



The Economic Impact of the University of Maryland, Baltimore on The State of Maryland FY 2011

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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 impacts of the University are presented in the Summary Table below. This study used two alternative methodologies to estimate the economic impacts of the University. The *Upper Bound* estimate assumes that there are no effective in-State substitutes for the educational services provided by the University, while the *Lower Bound* estimate adjusts for the potential substitution by other Maryland universities for these services. Using the *Upper Bound* estimate the total impact of the University of Maryland on the Maryland economy is over \$2.5 billion in increased economic activity with an associated 20,180 jobs earning almost \$1.3 billion in salaries and wages. Using the *Lower Bound* estimate the total impact of the University of Maryland, Baltimore on the Maryland economy is just over \$2.0 billion in increased economic activity with an associated 16,479 jobs over \$1.0 billion in salaries and wages. Using the *Upper Bound* estimate, UMB generates \$67.8 million in estimated state and local tax revenues and using the *Lower Bound* estimate UMB generates \$55.8 million in estimated state and local tax revenues.

Summary Table
Economic Impact of University of Maryland, Baltimore
(FY 2011)

Item	Upper Bound			Lower Bound		
	Direct	Indirect	Total Impact	Direct	Indirect	Total Impact
Economic Output (Mil. \$)	\$1,243.2	\$1,307.1	\$2,540.8	\$989.2	\$1,047.6	\$2,036.8
Employment (# of Jobs)	6,996	13,184	20,180	5,786	10,693	16,479
Earnings (Mil. \$)	\$701.2	\$578.1	\$1,279.3	\$577.6	\$475.6	\$1,053.2
State and Local Fiscal Impact (Mil. \$)	\$37.2	\$30.7	\$67.8	\$30.6	\$25.2	\$55.8

Source: University of Maryland and The Jacob France Institute

The economic impacts presented above are made possible by the support provided to the University by the State, which provides 19% of UMB's operating budget. However, the University leverages its State appropriations by attracting new research funding, students, and visitors into Maryland. As a result, when impacts are compared to State funding, for the *Upper Bound* impact estimate, the University of Maryland Baltimore generates \$13.77 in output for each \$1.00 appropriated. Using the *Lower Bound* impact estimate, the University of Maryland Baltimore generates \$11.04 in output for each \$1.00 appropriated.

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

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. The University and its affiliated institutions employed 6,996 workers who earned \$729.1 million in salaries and wages.

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

These expenditure and employment figures, however, do not represent the actual total impact of the University on the State of Maryland for two reasons:

- 1) Some of these expenditures would occur in Maryland in the absence of the University; and
- 2) Some of the expenditures associated with the University represent spending that would otherwise not occur in the State in the absence of the University, and this spending has “spin-off” or “multiplier” effects.

This report begins with a brief description of the methodology used to estimate the economic impact of the University and then goes on to calculate the economic, employment, and fiscal impacts of the University.

This report analyzes the impact of the University of Maryland, Baltimore on the State’s economy using 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. Direct effects must represent new spending in Maryland, or spending that would otherwise not occur in the absence of the project or event being analyzed, in this case 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 economic activity in a region), employment, and earnings attributable to the University of Maryland, Baltimore.

In computing the direct economic effects of the University, this study uses an "economic base analysis" approach to estimate the economic impacts on the State of Maryland.² In such an analysis, industries can be divided into export-oriented industries (those that produce or compete for goods or services for sale outside of the region) and local market-oriented industries (those that produce goods or services for sale within a region). Local market-oriented industries can also be import-substituting, or industries that decrease the importation of goods or services. Export-based and import-substituting industries can be viewed as exogenous demand industries³ and have "multiplier effects." Multiplier effects occur as an initial round of exogenous spending is spent and then re-spent in the state economy. For example, the University pays a worker a salary or purchases goods or services from a local company, a portion of which is then spent on purchasing other goods and services from Maryland companies that in turn becomes income for other workers and supplier firms. Thus, each dollar of new spending creates more than one dollar in economic impact, as that spending is earned and, in turn, spent by others in the State.

This analysis presents two estimates of the direct economic effects of the University.⁴ The first estimate is based on a conservative estimate of exogenously determined demand for the

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

² This analysis draws on methods used to analyze the impact of all public institutions of higher education on the State of Kentucky and the economic impact of the University of Colorado on the State of Colorado. See Charles Haywood, Analysis of the Annual Economic Impacts in Kentucky of the State's Public Institutions of Higher Education, University of Kentucky, 1993 and the Office of Central Administration & Analysis, University of Colorado Economic Impact Study, University of Colorado, 1996.

³ Exogenous demand industries are industries impacted by economic conditions outside of the region being studied.

⁴ The *Upper Bound* and *Lower Bound* estimation methodology used in this report is drawn from the University of Colorado Economic Impact Study, *Op Cit.*, pp. 4-8.

educational services provided by the University of Maryland, Baltimore. This *Lower Bound* estimate is based on the assumption that the University is at least partially substitutable by other institutions of higher education within the State. The second - *Upper Bound* - estimate assumes that the University has no reasonable substitution possibilities within the State. With this assumption, if the University of Maryland, Baltimore did not exist, all of its students would need to leave Maryland to obtain a similar educational experience, and thus, all of the University's economic activity is exogenously determined. **Given that the University is the public provider of health and professional educational services and, in fact, has no in-State competition in many of its key program areas, the *Upper Bound* is a reasonable estimate of the economic impact of the University.**

The *Lower Bound* estimate is based on the assumption that the University's economic impacts are exogenously determined only to the extent that students would need to leave Maryland to find a similar educational experience. A student survey was conducted of students in the University of Maryland, Baltimore's School of Law, School of Nursing, and School of Social Work on their willingness to attend another university in Maryland if they did not attend the University of Maryland, Baltimore.⁵ Fifty-six percent (56%) of School of Social Work, 36% of School of Nursing, and 88% of School of Law students said that they would leave Maryland for their education if they were not enrolled in the University of Maryland, Baltimore. The University of Maryland, Baltimore Dental School is the only dental program in Maryland and, thus, there are no educational substitutes for the educational services it provides. Furthermore, it was determined in consultation with University administrators that there was only limited competition for students between the University of Maryland, Baltimore Schools of Medicine and Pharmacy and the other instate medical and pharmacy schools. Thus, there are negligible in-state substitution opportunities for the educational services provided by these schools.

The *Lower Bound* estimate was derived by calculating the estimated loss in full-time student enrollment in Maryland that would occur if the University of Maryland, Baltimore did not exist. For the School of Law, School of Nursing, and School of Social Work, full-time resident student enrollment was multiplied by the substitution factors identified in the survey.⁶ Zero substitution effects were applied to non-resident student enrollment on the grounds that these students were attracted into Maryland by these three schools. Furthermore, as described above, zero substitution effects were applied to the Dental School, School of Medicine, and School of Pharmacy. The results of these calculations were used to derive adjustment factors used to compute the *Lower Bound* spending estimate. The adjustment factors used are presented in Table 2.

⁵ The survey was conducted in 2009 as part of a full economic impact analysis. The results were consistent with past surveys.

⁶ The survey-based substitution factors were 56% for the School of Social Work, 36% for the School of Nursing, and 88% for the School of Law. These factors were only applied to in-State resident students. Out-of-State students were assumed to be attracted into Maryland by the strength of UMB's programs. Thus, the adjustment factors presented in Table 2 differ from the survey results because they are the result of the multiplication of the survey-based substitution factor to in-State students plus the full substitution of out-of-State students.

Table 2
Lower Bound Student Enrollment Changes and Adjustment Factors

	% Exogenously Determined Enrollment	Adjustment Factor
School of Dentistry	100%	1.00
School of Law	92%	0.92
School of Medicine	100%	1.00
School of Nursing	42%	0.42
School of Pharmacy	100%	1.00
School of Social Work	65%	0.65
University Average	84%	0.84

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

A different methodology was used to estimate the level of expenditures associated with the University of Maryland, Baltimore’s Medical Service Plan/University Maryland Physicians Incorporated (MSP-FPI) to include this program in this analysis. MSP-FPI revenues represent the health care services operations of the medical school faculty. The *Upper Bound* estimate includes all of the expenditures associated with MSP/FPI. The *Lower Bound* estimate includes the MSP-FPI general and staff expenses attributable to out-of-State patients and patients receiving what are classified as “extreme” care. UMB estimates that 8% of revenues and operating costs are associated with out-of-state patients and 16% of revenues and operating costs are associated with Maryland patients receiving what is medically classified as extreme care for which only limited local competition exists. For the *Lower Bound* estimate, out-of-state patients are considered as exogenous demand and included in the analysis because they were attracted into the State by the reputation of the medical school faculty, and Maryland patients receiving “extreme” care are included because these patients would likely need to leave Maryland to receive comparable medical treatment. It is important to note that in this report MSP-FPI has changed the data it provides for this analysis. Based on a review of revenue and expense figures, MSP-FPI realized it had under-reported some of its expenses and revenues for past economic reports and provided larger figures for this report. Thus, the results for MSP-FPI in this year’s report is not directly comparable to the results of past years reports.

In order to assess the economic importance of the University of Maryland, Baltimore to the Maryland economy, this report analyzes only net new, exogenously determined expenditures in the State economy. Net new expenditures represent spending that would otherwise not occur in Maryland if the University of Maryland, Baltimore did not exist. The *Upper Bound* and *Lower Bound* expenditures are presented by major expenditure type in Table 3 and by School in Table 4. As described above, the *Upper Bound* spending figures include the total expenditures of the University and its affiliated institutions. The *Lower Bound* spending figures represent the portion of University and affiliate spending that is exogenously determined. This was calculated by multiplying the expenditures associated with each of the six University of Maryland,

Baltimore schools by the adjustment figure in Table 2 and adjusting the MSP-FPI spending to include only exogenously determined expenditures. The types of spending analyzed in this study are as follows:

University Operating Expenditures include University payroll paid to employees residing in Maryland and purchases made from suppliers in the State of Maryland. Student salaries and wages were subtracted from total operating expenditures because these would be captured in student expenditures (described below). The majority of these expenditures are derived from the revenues associated with research contracts, tuition and fees, and charitable contributions, which are attracted into the State by the University. These expenditures by the University comprise the major share of university-related expenditures in Maryland, and at \$826.5 million account for 67% of the *Upper Bound* and 78% of the *Lower Bound* expenditures (\$776.1 million).

Student Expenditures represent the living expenses of University of Maryland, Baltimore full-time students. Part-time students are not included since it is assumed that most of these students already live in Maryland.⁷ The University of Maryland, Baltimore estimates that student living expenses range from a low of \$23,000 for a School of Law student to a high of \$34,700 for a School of Dentistry student.⁸ The number of full-time students in each program was multiplied by each program's estimated living expenses to estimate total student spending. The *Upper Bound* student expenditure estimate, \$133.4 million, includes spending by all University of Maryland, Baltimore full-time students. Student expenditures account for 11% of total *Upper Bound* University-related expenditures. The *Lower Bound* estimate at \$113.9 million, account for 12% of the *Lower Bound* expenditures, includes expenditures only for students who would not have attended another Maryland university in the absence of the University of Maryland, Baltimore.

Visitor Expenditures represent expenditures by out-of-state visitors attracted into Maryland by the University of Maryland, Baltimore. The University of Maryland, Baltimore's national and international reputation draws visitors from around the world. There are an estimated total of almost 266,000 visitor days associated with out-of-State visitors to UMB to visit students or attend meetings, conferences, or other events at the University. These visitors to the State spent an estimated \$25.8 million on hotels, restaurants, retail purchases, and entertainment in Maryland and account for 2% of total *Upper Bound* University-related expenditures. The *Lower Bound* visitor expenditure estimate is \$23.2 million and accounts for 2% of total *Lower Bound* University-related expenditures.

Capital Expenditures consist of new construction, major renovation expenditures and major equipment purchases made by the University of Maryland, Baltimore. The University spent \$13.6 million on capital expenditures in fiscal 2010, consisting of \$8.5 million in construction projects and \$5.1 million in bond funded capital equipment purchases. Because it is unlikely that most of the capital equipment purchased was manufactured in Maryland, only the local margin of these purchases was included in this economic analysis. In-State, capital expenditures of \$9.5 million account for 1% of total *Upper Bound* University-related expenditures. The *Lower Bound*

⁷ Some part-time students commute into Maryland from out-of-State, and in-state spending by these students could be included in this analysis. However, no estimates of this spending were available. Thus, the overall impact of student expenditures could be larger than is indicated in this report.

⁸ No recent estimates of the cost of attendance, including non-tuition educational expenditures as well as cost of room and board were available. As a result, student living expenditures were estimated based on prior year's information adjusted for inflation.

construction expenditure estimate is \$8.0 million, accounting for 1% of total estimated *Lower Bound* University-related expenditures.

UMB Foundation Expenditures consist of expenditures made by the UMB Foundation, Inc. to support the teaching, research, scholarship, and community service activities of the University of Maryland, Baltimore. These expenditures are derived from income generated from gifts and endowments. These expenditures include only direct, in-state spending by the Foundation and exclude transfers to the University of Maryland, Baltimore, which would be included in University operating expenditures. UMB Foundation expenditures represent 1% of estimated *Upper Bound* and 1% of *Lower Bound* expenditures.

Medical Service Plan/University Physicians Incorporated (MSP-FPI) Expenditures, as described above, consist of in-state spending related to the provision of health care services by School of Medicine faculty. These expenditures account for 18% of total estimated *Upper Bound* expenditures and for 5% of estimated *Lower Bound* expenditures.

Table 3
University of Maryland, Baltimore and Affiliated Institutions
Total In-State Expenditures, by Category
 Fiscal 2011
 (Millions of Dollars)

Item	Upper Bound Estimate	% of Total	Lower Bound Estimate	% of Total
Total Maryland Expenditures	<u>\$1,233.7</u>	<u>100%</u>	<u>\$989.2</u>	<u>100%</u>
Total Operating Expenditures ¹	\$826.5	67%	\$776.1	78%
Student Expenditures	\$133.4	11%	\$113.9	12%
Visitor Expenditures	\$25.8	2%	\$23.2	2%
Capital Expenditures	\$9.5	1%	\$8.0	1%
UMB Foundation	\$18.3	1%	\$15.3	2%
MSP-FPI	\$220.2	18%	\$52.7	5%

(1) Student Stipends were removed to avoid double counting.

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

Table 4
University of Maryland, Baltimore In-State Expenditures by School
 Fiscal 2011
 (Millions of Dollars)

Item	Upper Bound Estimate	% of Total	Lower Bound Estimate	% of Total
Total	<u>\$1,233.7</u>	<u>100%</u>	<u>\$989.2</u>	<u>100%</u>
School of Dentistry	\$76.9	6%	\$76.9	8%
School of Law	\$53.8	4%	\$49.7	5%
School of Medicine	\$560.6	45%	\$560.6	57%
School of Nursing	\$52.0	4%	\$21.9	2%
School of Pharmacy	\$52.8	4%	\$52.8	5%
School of Social Work	\$41.7	3%	\$27.3	3%
Central Administration (1)	\$157.5	13%	\$132.0	13%
UMB Foundation	\$18.3	1%	\$15.3	2%
MSP-FPI	\$220.2	18%	\$52.7	5%

(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

2.0 The Impact of the University of Maryland, Baltimore on Maryland Output

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 impact, as that spending is earned and, in turn, spent by others in the State.

The estimated output impact of the University of Maryland, Baltimore by expenditure category is presented in Table 5 and by School in Table 6. 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.

Using the *Upper Bound* estimate, total direct University and associated student and visitor expenditures of \$1.2 billion are leveraged with an additional \$1.3 billion in indirect spending for a combined total impact of nearly \$2.5 billion. With the *Lower Bound* estimate, total direct University and associated student and visitor expenditures of \$989.2 million are leveraged with an additional \$1.0 billion in indirect spending for a total impact of just over \$2.0 billion.⁹

Table 5
Output Impact of
The University of Maryland, Baltimore on the Maryland Economy
By Expenditure Category, Fiscal 2011
(Millions of Dollars)

Item	Upper Bound			Lower Bound		
	Direct	Indirect	Total Impact	Direct	Indirect	Total Impact
Total Maryland Expenditures	<u>\$1,243.2</u>	<u>\$1,307.1</u>	<u>\$2,540.8</u>	<u>\$989.2</u>	<u>\$1,047.6</u>	<u>\$2,036.8</u>
Total Operating Expenditures	\$826.5	\$904.6	\$1,731.0	\$776.1	\$849.4	\$1,625.6
Student Expenditures	\$133.4	\$111.5	\$244.9	\$113.9	\$95.2	\$209.1
Visitor Expenditures	\$25.8	\$23.4	\$49.2	\$23.2	\$21.0	\$44.3
Capital Expenditures	\$9.5	\$9.5	\$19.0	\$8.0	\$8.1	\$16.1
UMB Foundation	\$18.3	\$20.0	\$38.2	\$15.3	\$16.8	\$32.1
MSP-FPI	\$220.2	\$238.1	\$458.3	\$52.7	\$57.0	\$109.7

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

⁹ No multipliers for students or visitors exist in the RIMSII model. In order to estimate the economic impact of this spending, blended multipliers were derived for each category of spending based on average spending by major expenditure category by students (from the U.S. Department of Labor's *Consumer Expenditure Survey*) and by visitors (from average tourist expenditures data from the Maryland Department of Business and Economic Development).

Table 6 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 UMB Foundation to support both overall University and individual School operations are included in the UMB 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. By school, the School of Medicine has the greatest impacts under both the *Upper Bound* and the *Lower Bound* estimates.

Table 6
Output Impact of
The University of Maryland, Baltimore on the Maryland Economy
By School, Fiscal 2011
(Millions of Dollars)

Item	Upper Bound			Lower Bound		
	Direct	Indirect	Total Impact	Direct	Indirect	Total Impact
Total	<u>\$1,233.7</u>	<u>\$1,307.1</u>	<u>\$2,540.8</u>	<u>\$989.2</u>	<u>\$1,047.6</u>	<u>\$2,036.8</u>
School of Dentistry	\$76.9	\$77.7	\$154.6	\$76.9	\$77.7	\$154.6
School of Law	\$53.8	\$52.8	\$106.5	\$49.7	\$48.8	\$98.5
School of Medicine	\$560.6	\$602.9	\$1,163.5	\$560.6	\$602.9	\$1,163.5
School of Nursing	\$52.0	\$51.3	\$103.3	\$21.9	\$21.6	\$43.5
School of Pharmacy	\$52.8	\$52.5	\$105.3	\$52.8	\$52.5	\$105.3
School of Social Work	\$41.7	\$40.3	\$82.0	\$27.3	\$26.4	\$53.6
University Central Administration (1)	\$157.5	\$171.5	\$329.0	\$132.0	\$143.9	\$275.9
UMB Foundation	\$18.3	\$20.0	\$38.2	\$15.3	\$16.8	\$32.1
MSP-FPI	\$220.2	\$238.1	\$458.3	\$52.7	\$57.0	\$109.7

(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

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 Baltimore City and in the State of Maryland. The University and its affiliated institutions directly employ 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 employment impacts of the University of Maryland, Baltimore are presented by major expenditure area in Table 7, by School in Table 8 and the wage and salary impacts of the University of Maryland, Baltimore are presented by major expenditure area in Table 9 and by School in Table 10.

Using the *Upper Bound* estimate, the expenditures made by the University, its students, and visitors support an additional 13,184 jobs in Maryland, for a total University employment impact of 20,180. As presented in Table 9, there is a total of nearly \$1.3 billion in salaries and wages associated with the jobs at, or supported by, the University of Maryland, Baltimore. Using the *Lower Bound* estimate, the expenditures made by the University, its students, and visitors support an additional 10,693 jobs in Maryland, for a total University employment impact of 16,479 with an associated \$1.1 billion in salaries and wages for the jobs at, or supported by, the University of Maryland, Baltimore.

Table 7
Employment Impact of
The University of Maryland, Baltimore on the Maryland Economy
By Expenditure Category, Fiscal 2011
(Number of Jobs)

Item	Upper Bound			Lower Bound		
	Direct	Indirect	Total Impact	Direct	Indirect	Total Impact
Total Maryland Employment	<u>6,996</u>	<u>13,184</u>	<u>20,180</u>	<u>5,786</u>	<u>10,693</u>	<u>16,479</u>
Total Operating Expenditures	5,972	8,142	14,114	5,541	7,713	13,254
Student Expenditures	-	1,953	1,953	-	1,667	1,667
Visitor Expenditures	-	473	473	-	425	425
Capital Expenditures	-	124	124	-	104	104
UMB Foundation	-	312	312	-	261	261
MSP-FPI	1,024	2,180	3,204	245	522	767

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

Table 8
Employment Impact of
The University of Maryland, Baltimore on the Maryland Economy
By School, Fiscal 2011
(Number of Jobs)

Item	Upper Bound			Lower Bound		
	Direct	Indirect	Total Impact	Direct	Indirect	Total Impact
Total	<u>6,996</u>	<u>13,184</u>	<u>20,180</u>	<u>5,786</u>	<u>10,693</u>	<u>16,479</u>
School of Dentistry	342	917	1,259	342	917	1,259
School of Law	242	627	869	224	580	804
School of Medicine	3,484	6,029	9,513	3,484	6,029	9,513
School of Nursing	273	570	843	115	240	355
School of Pharmacy	300	559	859	300	559	859
School of Social Work	217	452	669	142	296	438
University Central Administration (1)	1,114	1,537	2,651	934	1,289	2,223
UMB Foundation	-	312	312	-	261	261
MSP-FPI	1,024	2,180	3,204	245	522	767

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

Table 9
Earnings Impact of
The University of Maryland, Baltimore on the Maryland Economy
By Expenditure Category, Fiscal 2011
(Millions of Dollars)

Item	Upper Bound			Lower Bound		
	Direct	Indirect	Total Impact	Direct	Indirect	Total Impact
Total Employee Compensation	<u>\$701.2</u>	<u>\$578.1</u>	<u>\$1,279.3</u>	<u>\$577.6</u>	<u>\$475.6</u>	<u>\$1,053.2</u>
Total Operating Expenditures	\$581.6	\$396.6	\$978.2	\$549.0	\$373.8	\$922.8
Student Expenditures	-	\$61.8	\$61.8	-	\$52.8	\$52.8
Visitor Expenditures	-	\$13.9	\$13.9	-	\$12.5	\$12.5
Capital Expenditures	-	\$5.9	\$5.9	-	\$4.9	\$4.9
UMB Foundation	-	\$12.8	\$12.8	-	\$10.8	\$10.8
MSP-FPI	\$119.6	\$87.1	\$206.7	\$28.6	\$20.8	\$49.5

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

Table 10
Earnings Impact of
The University of Maryland, Baltimore on the Maryland Economy
By School, Fiscal 2011
(Millions of Dollars)

Item	Upper Bound			Lower Bound		
	Direct	Indirect	Total Impact	Direct	Indirect	Total Impact
Total	<u>\$701.2</u>	<u>\$578.1</u>	<u>\$1,279.3</u>	<u>\$577.6</u>	<u>\$475.6</u>	<u>\$1,053.2</u>
School of Dentistry	\$34.3	\$34.9	\$69.2	\$34.3	\$34.9	\$69.2
School of Law	\$23.5	\$27.3	\$50.8	\$21.7	\$25.2	\$46.9
School of Medicine	\$392.2	\$285.7	\$677.9	\$392.2	\$285.7	\$677.9
School of Nursing	\$26.1	\$28.1	\$54.2	\$11.0	\$11.9	\$22.9
School of Pharmacy	\$28.6	\$29.2	\$57.8	\$28.6	\$29.2	\$57.8
School of Social Work	\$17.9	\$22.0	\$39.9	\$11.7	\$14.4	\$26.1
University Central Administration (1)	\$59.1	\$50.9	\$109.9	\$49.5	\$42.6	\$92.2
UMB Foundation	-	\$12.8	\$12.8	-	\$10.8	\$10.8
MSP-FPI	\$119.6	\$87.1	\$206.7	\$28.6	\$20.8	\$49.5

(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 *Upper Bound* estimate of the income and sales tax impact of the University and its related economic impacts on the State is \$50.8 million, with \$27.9 million in State income taxes and \$22.9 million in sales taxes. The *Upper Bound* estimate of local income tax revenues for the University is \$17.0 million. The *Lower Bound* estimate of the State income and sales tax impact of the University and its related economic impacts is \$41.8 million, with \$22.9 million in State income taxes and \$18.9 million in sales taxes. The *Lower Bound* estimate of local income tax revenues for the University is \$14.0 million.

Table 11
Selected Fiscal Impact of
The University of Maryland, Baltimore on the State of Maryland, Fiscal 2011
(Millions of Dollars)

Item	Upper Bound			Lower Bound		
	Direct	Indirect	Total Impact	Direct	Indirect	Total Impact
Total State Government Revenues	<u>\$27.9</u>	<u>\$23.0</u>	<u>\$50.8</u>	<u>\$22.9</u>	<u>\$18.9</u>	<u>\$41.8</u>
State Income Tax (1)	\$15.3	\$12.6	\$27.9	\$12.6	\$10.4	\$22.9
Retail Sales Tax (2)	\$12.6	\$10.4	\$22.9	\$10.4	\$8.5	\$18.9
Estimated Local Income Tax	\$9.3	\$7.7	\$17.0	\$7.7	\$6.3	\$14.0

(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 output 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 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 impacts of the University by the State appropriation provides an estimate of the economic returns on the State's investment in the University of Maryland, Baltimore. For the *Upper Bound* impact estimate, the University of Maryland, Baltimore generates \$13.77 in output for each \$1.00 appropriated. Using the *Lower Bound* impact estimate, the University of Maryland, Baltimore generates \$11.04 in output for each \$1.00 appropriated.

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