



The Economic Activity Generated by the University of Maryland, Baltimore FY 2005

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Executive Summary

The University of Maryland, Baltimore is the flagship public provider of health and professional educational services in Maryland. The University 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 it pays to its Maryland workforce. The University also plays a vital role in providing a skilled and educated workforce, and is the only provider of educational services in several key areas. 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 \$993.3 million generates nearly \$1.22 billion in Indirect Economic Impacts for a total impact on the Maryland economy of over \$2.2 billion. Total direct university employment of 6,031 is augmented by an estimated 16,147 jobs supported or created through indirect impacts, for a total employment impact of 22,178 jobs. There is a total of \$969 million in salaries and wages associated with these 22,178 jobs. The combined state and local fiscal impact of the wages and salaries paid to University employees or the employees supported by the University's operations is \$46.8 million in fiscal 2005.

Summary Table
Economic Activity Generated by the
University of Maryland, Baltimore
(FY 2005)

Item	Direct	Indirect	Total Impact
Economic Output (Mil. \$)	993.3	1,215.3	2,208.6
Employment (# of Jobs)	6,031	16,147	22,178
Earnings (Mil. \$)	476.6	492.5	969.1
Fiscal Impact (Mil. \$)	23.0	23.8	46.8

Source: University of Maryland 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 2005, State appropriations of \$133.5 million only accounted for 20% 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 \$16.54 in economic activity for each \$1 appropriated.

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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 direct effects are 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 economic output (a measure similar to gross national product (GNP) which measures the level of economic activity in a 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 construction expenditures of the University.

As presented in Table 1, in fiscal 2004, the University, its affiliated institutions, its students, and the out-of-state visitors attracted into Maryland by the University spent a total of \$999.6 million. The University and its affiliated institutions employed or supported 6,031 workers who earned \$476.6 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 of the U.S. Bureau of the Census.

Table 1

**Total Expenditures, Employment, and Payroll Associated with
the University of Maryland, Baltimore and its Affiliated
Institutions (Fiscal 2005)**

Item	
Total Expenditures (Mil. \$)	<u>999.6</u>
Total Operating Expenditures	667.4
Student Expenditures	106.5
Visitor Expenditures	16.9
Construction Expenditures	101.5
University of Maryland Foundation	19.5
MSP/UPI	87.8
Total Employment (Number of Jobs)	6,031
Total Payroll and Fringe (Mil. \$)	476.6

Source: University of Maryland, Baltimore

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

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

The estimated economic output activity 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 \$993.3 million are leveraged with an additional \$1.22 billion in indirect spending for a combined total impact of over \$2.2 billion.

Table 2
Economic Output Impact of
The University of Maryland, Baltimore on the Maryland Economy
By Expenditure Category

Item	Direct	Indirect	Total Impact
Total Maryland Expenditures	<u>993.3</u>	<u>1,215.3</u>	<u>2,208.6</u>
Total Operating Expenditures ¹	661.1	855.7	1,516.7
Student Expenditures	106.5	91.8	198.2
Visitor Expenditures	16.9	16.9	33.9
Construction Expenditures	101.5	118.8	220.4
University of Maryland Foundation	19.5	25.2	44.7
Medical Service Plan/University Physicians Inc.	87.8	106.9	194.7

(1) Operating expenditures were reduced by the \$6.3 million paid as salaries or stipends to students in order to avoid double counting.

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

Table 3 presents the economic output impact of the University of Maryland, Baltimore on the Maryland economy by school. The School of Medicine has a total economic impact of over \$1 billion on the State economy, accounting for 47% of the total impact.

Table 3
Economic Output Impact of
The University of Maryland, Baltimore on the Maryland Economy
By School

Item	Direct	Indirect	Total Impact
Total	<u>993.3</u>	<u>1,215.3</u>	<u>2,208.6</u>
School of Dentistry	59.7	69.1	128.8
School of Law	36.9	40.2	77.2
School of Medicine	459.4	579.7	1,039.1
School of Nursing	42.2	46.5	88.7
School of Pharmacy	36.5	41.3	77.8
School of Social Work	28.8	31.0	59.7
University Central Administration (1)	222.5	275.4	498.0
University of Maryland Foundation	19.5	25.2	44.7
MSP/UPI	87.8	106.9	194.7

(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 both Baltimore City and in the State. The University and its affiliated institutions directly employ or support 6,031 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 16,147 jobs in Maryland, for a total University employment impact of 22,178. As presented in Table 6 and Table 7, there is a total of \$969.1 million in salaries and wages associated with the 22,178 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.

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

Item	Direct	Indirect	Total Impact
Total Maryland Employment	<u>6,031</u>	<u>16,147</u>	<u>22,178</u>
Total Operating Expenditures	5,117	10,856	15,973
Student Expenditures	--	1,929	1,929
Visitor Expenditures	--	436	436
Construction Expenditures	--	1,650	1,650
University of Maryland Foundation	--	471	471
MSP/UPI	914	805	1,719

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
(Number of Jobs)

Item	Direct	Indirect	Total Impact
Total	<u>6,031</u>	<u>16,147</u>	<u>22,178</u>
School of Dentistry	323	1,012	1,335
School of Law	169	626	795
School of Medicine	2,949	8,003	10,952
School of Nursing	282	633	915
School of Pharmacy	261	543	804
School of Social Work	144	470	614
University Central Administration (1)	989	3,585	4,574
University of Maryland Foundation		471	471
MSP/UIP	914	805	1,719

(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
(Millions of Dollars)

Item	Direct	Indirect	Total Impact
Total Employee Compensation	<u>476.6</u>	<u>492.5</u>	<u>969.1</u>
Total Operating Expenditures	437.5	319.8	757.3
Student Expenditures	--	51.3	51.3
Visitor Expenditures	--	10.1	10.1
Construction Expenditures	--	66.6	66.6
University of Maryland Foundation	--	15.2	15.2
MSP/UIP	39.1	29.5	68.6

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
(Millions of Dollars)

Item	Direct	Indirect	Total Impact
Total Employee Compensation	<u>476.6</u>	<u>492.5</u>	<u>969.1</u>
School of Dentistry	27.0	28.4	55.5
School of Law	15.0	19.5	34.5
School of Medicine	298.2	230.4	528.6
School of Nursing	18.1	22.3	40.4
School of Pharmacy	18.5	20.1	38.6
School of Social Work	11.4	15.4	26.7
University Central Administration (1)	49.3	111.7	161.0
University of Maryland Foundation		15.2	15.2
MSP/UPI	39.1	29.5	68.6

(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 \$34.5 million, with \$20.0 million in income taxes and \$14.5 million in sales taxes. The estimated local income tax revenues generated by the University are \$12.4 million.

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

Item	Direct	Indirect	Total Impact
Total State Government Revenues	<u>17.0</u>	<u>17.5</u>	<u>34.5</u>
State Income Tax (1)	9.8	10.2	20.0
Retail Sales Tax (2)	7.1	7.4	14.5
Estimated Local Income Tax Revenues (1)	6.1	6.3	12.4

(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 5% sales tax rate.

Source: University of Maryland 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 2005, State appropriations of \$133.5 million only accounted for 20% 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 \$16.54 in economic activity for each \$1 appropriated.

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