

The Economic Impact of Nonprofit Hospitals, Colleges and Universities on the City of Baltimore



Prepared
for

MICUA

Maryland Independent College
and University Association



Maryland
Hospital Association

Prepared
by

The Jacob
france
Institute

June 2012

1.0 Introduction and Summary

The Maryland Independent College and University Association (MICUA) and the Maryland Hospital Association (MHA) retained the Jacob France Institute of the Merrick School of Business at the University of Baltimore to analyze the economic contribution of private nonprofit colleges, hospitals and universities on the Baltimore City economy. The results of this analysis are presented in Table 1 and a summary of major results is as follows:

- The combined Baltimore City revenues and associated construction, student and visitor expenditures of all private nonprofit colleges, hospitals and universities total \$11.7 billion. The eighteen Institutions analyzed employ 68,846 workers earning \$4.8 billion dollars;
- The \$11.7 billion in economic activity associated with MHA and MICUA's eighteen member institutions in the City supported nearly \$18.0 billion in economic activity in the City, supported 120,113 jobs earning \$7.8 billion in labor income and generated \$644.0 million in combined state and local government revenues;
- The thirteen hospitals analyzed had nearly \$7.0 billion in revenues, spent \$642.4 million in capital spending and attracted 737,398 visitors to the City who spent \$65.8 million for a total revenue and spending impact of nearly \$7.7 billion;
- The \$7.7 billion in direct economic activity supported by MHA's thirteen member hospitals in the City supported nearly \$11.8 billion in economic activity in the City, supported 82,140 jobs earning \$4.8 billion in labor income and generated \$389.3 million in combined state and local government revenues¹;
- The five colleges and universities analyzed had more than \$3.5 billion in revenues, spent \$167.8 million in capital spending, had 21,508 students who spent \$264.1 million and attracted 194,029 visitors to the City who spent \$18.6 million for a total revenue and spending impact of nearly \$4.0 billion;
- The \$4.0 billion in economic activity supported by MICUA's five member colleges and universities in the City supported \$6.2 billion in economic activity in the City, supported 37,973 jobs earning \$3.0 billion in labor income and generated \$254.7 million in combined state and local government revenues;
- The 75,180 jobs directly supported by the eighteen MHA and MICUA institutions account for 22% of total City of Baltimore employment and when multiplier effects are included, the 120,113 jobs at or supported by these institutions account for 35% of total City of Baltimore employment;
- The Jacob France Institute collected data on a number of the other impacts associated with the eighteen colleges, hospitals and universities analyzed. Some of the other impacts associated with these institutions are as follows:
 - Overall 13% of suppliers to the eighteen institutions analyzed are located in the City and 20% of purchases, a total of \$822.3 million, are made from City businesses;
 - Thirty-nine percent (39%) of the employees of the eighteen institutions analyzed reside in the City and 34% of wages and salaries, a total of \$1.1 billion, are paid to City residents; and
 - Forty five-percent (45%) of the employees of the eighteen institutions analyzed are members of a minority.

¹ This analysis of the economic contribution of MHA hospitals does not adjust for the potential substitution by other medical institutions for the healthcare and medical services provided. It simply analyzes the linkages between these hospitals and the City economy.

Table 1
The Economic Impact and Activity Generated or Supported by
MHA and MICUA Member in the Baltimore City Economy Operations

Item	Direct Impact	Indirect Impact	Induced Impact	Total Impact
<u>Total Impact/Activity</u>				
Economic Output	\$11,383,458,647	\$3,103,630,637	\$3,476,693,856	\$17,963,783,140
Employment (# of Jobs)	75,180	20,014	24,919	120,113
Labor Income	\$5,240,663,032	\$1,153,653,042	\$1,372,948,760	\$7,767,264,834
State and Local Fiscal Impact	--	--	--	<u>\$643,954,299</u>
Estimated State Revenue Impact	--	--	--	\$355,756,282
Estimated City Revenue Impact	--	--	--	\$288,198,017
<u>MHA Hospitals</u>				
Economic Output	\$7,651,587,661	\$2,080,396,109	\$2,047,862,740	\$11,779,846,510
Employment (# of Jobs)	53,041	14,415	14,684	82,140
Labor Income	\$3,186,178,301	\$811,234,305	\$808,626,861	\$4,806,039,467
State and Local Fiscal Impact	--	--	--	<u>\$389,280,881</u>
Estimated State Revenue Impact	--	--	--	\$216,287,003
Estimated City Revenue Impact	--	--	--	\$172,993,878
<u>MICUA Colleges and Universities</u>				
Economic Output	3,731,870,986	\$1,023,234,528	\$1,428,831,116	\$6,183,936,630
Employment (# of Jobs)	22,139	5,599	10,235	37,973
Labor Income	\$2,054,484,731	\$342,418,737	\$564,321,899	\$2,961,225,367
State and Local Fiscal Impact	--	--	--	<u>\$254,673,418</u>
Estimated State Revenue Impact	--	--	--	\$139,469,279
Estimated City Revenue Impact	--	--	--	\$115,204,139

Source: MHA, MICUA, the JFI and IMPLAN

2.0 Methodology and MHA and MICUA Institution Spending

MHA and MICUA commissioned the Jacob France Institute to analyze the contribution made to the Baltimore City economy by the operations of the eighteen MHA and MICUA members located in the City.² This study uses the standard regional economics modeling method of input/output analysis to quantify the direct and indirect (multiplier) impacts of the revenues and expenditures associated with the eighteen colleges, hospital and universities, analyzed. The JFI's analysis of the impacts associated with these private nonprofit colleges, hospitals and universities on Baltimore City employs a custom economic input/output (I/O) model that quantifies the interrelationships between economic sectors in the areas analyzed. I/O data show the flow of commodities to industries from producers and institutional consumers for any given state, region or county. The data also show consumption activities by workers, owners of capital, and imports from outside the state or region. These trade flows built into the model permit estimating the impacts of one sector on all other sectors with which it interacts. These impacts consist of three types:

- **Direct Impacts** are, in this case, the specific impact of the health care, educational, research and other related revenues and capital spending of MHA and MICUA members as well as estimated student spending (for colleges and universities) and visitor spending attracted into the City;
- **Indirect Impacts** are the impact of purchases from local in-City suppliers related to the operations and spending associated with the eighteen institutions; and
- **Induced Impacts** are the additional economic impacts associated with the spending of the employees of these institutions and the employees of all impacted firms in the overall City economy that can be attributed to these institutions and their associated spending.

In other words, I/O analysis models the flow of funds that originate from the direct expenditures associated with the operations of these eighteen institutions and the ongoing ripple (multiplier) effect of these expenditures. I/O analysis represents the “gold standard” for measurement of economic impacts and is the generally accepted methodology for measuring the economic impact associated with projects, companies or of entire industries.

The economic contribution analysis conducted used the IMPLAN model for Baltimore City.³ IMPLAN provides a specialized software system for impact analysis and highly detailed data tables at the national, state, and county levels. The IMPLAN model uses detailed sector- and region-specific information to estimate outcomes and gauge potential impacts. The model incorporates detail on more than 420 individual industry sectors that cover the entire regional, state, or national economy. The IMPLAN model allows for the estimation of three key economic impact measures used in this analysis:

- | | |
|-----------------------|--|
| Employment – | The total number of full and part time jobs in all industries; |
| Labor Income – | All forms of employment income including wages, benefits and self employment earnings; and |

² See Appendix Table 1 for a list of the 18 institutions.

³ For a description of input-output analysis and the IMPLAN modeling process, please reference: The Minnesota IMPLAN Group, Inc., IMPLAN Pro Users Guide, (Stillwater, MN: MIG, Inc, 1997) pp. 77-104.

Output – The total value of production or sales in all industries.

The data on operations (revenues, expenditures, and employment), capital spending, student spending, and visitors collected and used in this analysis were based on a survey of all eighteen institutions.⁴ The four inputs to the model were as follows:

- Total Revenues** - These are the health care (for hospitals) and educational and research (for universities) revenues of the eighteen institutions;
- Capital Spending** - These are the in-City capital expenditures of the eighteen institutions;
- Visitor Spending** - These are the expenditures associated with the visitors attracted into the City by the eighteen institutions (described in more detail below); and
- Student Spending** - These are the expenditures associated with the students attending the five universities analyzed. This was calculated based on data on student living expenses provided by each college and university.

The total revenues and expenditures associated with the eighteen MHA and MICUA institutions analyzed are presented in Table 2. These institutions directly employ 68,846 workers generate nearly \$11.7 billion in revenues and associated capital, visitor and student expenditures.

Table 2
Total Reported Employment, Revenues and Spending
Associated with MHA and MICUA Members, FY 2011

Item	MHA - Hospitals	MICUA Colleges and Universities	Total MHA and MICUA Institutions
Total Revenues and Associated Spending	<u>\$7,660,217,137</u>	<u>\$3,998,415,879</u>	<u>\$11,658,633,016</u>
Revenues	\$6,952,064,861	\$3,547,889,564	\$10,499,954,425
Capital Spending	\$642,377,094	\$167,784,539	\$810,161,633
Visitor Spending	\$65,775,182	\$18,642,856	\$84,418,038
Student Spending	--	\$264,098,920	\$264,098,920
Employment	48,042	20,804	68,846

Source: MHA and MICUA Institutions and the JFI

⁴ Only one of the eighteen institutions, Sojourner-Douglas College did not provide survey data. Their analysis was based on data from a 2011 analysis of the economic impacts associated with all MICUA member institutions on the State of Maryland – see <http://www.micua.org/economic-impact-of-micua-colleges-and-universities-tops-64-billion>. Data for the revenues, student spending and visitor spending associated with Sojourner-Douglas College were for FY2010 not FY2011. Because of the small size of Sojourner-Douglas College, this data is unlikely to bias the results of this analysis.

3.0 Economic Contribution of MHA and MICUA Institutions to the City of Baltimore

Private nonprofit colleges, hospitals and universities are a major source of economic activity in Baltimore City. As described above, these institutions directly employ 68,846 workers generate nearly \$11.7 billion in revenues and associated capital, visitor and student expenditures. When multiplier effects are included, these revenues and expenditures support \$18.0 billion in City economic activity, support 120,113 jobs earning \$7.8 billion in labor income. This economic activity and employment supports an estimated \$644.0 million in combined state and local government revenues. These impacts are distributed between the thirteen MHA hospitals and five MICUA colleges and universities as follows:

- Private nonprofit hospitals had direct revenues and associated expenditures of \$7.7 billion and employ 48,042 workers. When associated spending and multiplier effects are included, these revenues and expenditures support \$11.8 billion in City economic activity, support 82,140 jobs earning \$4.8 billion in labor income.⁵ This economic activity and employment supports an estimated \$389.3 million in combined state and local government revenues; and
- Private universities had revenues and associated expenditures of \$4.0 billion and directly employ 20,804 workers. When associated spending and multiplier effects are included, these revenues and expenditures support \$6.2 billion in City economic activity, support 37,973 jobs earning \$3.0 billion in labor income. This economic activity and employment supports an estimated \$254.7 million in combined state and local government revenues.

The IMPLAN model used in this analysis provides estimates of total *combined* State and Local Government Revenues. These estimates are based on standard relationships of government revenues to economic activity. In order to better describe the fiscal contribution of the eighteen MHA and MICUA members analyzed, the IMPLAN estimated total state and local government revenues were divided into the estimated State of Maryland and Baltimore City share of revenue, based on data from the U.S. Bureau of the Census State and Local Government Finance⁶ data. Based on this analysis, the thirteen MHA hospitals analyzed generate \$173.0 million in Baltimore City revenues and the five MICUA colleges and universities analyzed generate \$115.2 million in Baltimore City revenues. The eighteen institutions combined generate an *estimated* \$288.2 million in Baltimore City revenues.⁷ Additional discussion of the fiscal impacts is included in the analysis of selected additional impacts of MHA and MICUA Institutions below.

⁵ It is important to note that the analysis for hospitals is an economic contribution analysis – which measures the linkages between the hospitals and the City economy – rather than a traditional economic impact analysis, which only includes net, new and incremental spending.

⁶ See <http://www.census.gov/govs/estimate/> for the data used.

⁷ This is a rough, high level estimate of the fiscal contribution of the contribution of the eighteen institutions to the City of Baltimore based on general relationships between economic activity and government revenues. It is not and does not substitute for a comprehensive and detailed analysis of the fiscal contribution of these institutions to the City. These estimated revenues would not include payments such as the City's nonprofit assessment. It is important to note that this estimate is based on State averages, and therefore, is likely to underestimate City revenues.

Table 3
Baltimore Economic Activity Associated with MHA and MICUA Members
FY 2011

Item	MHA - Hospitals	MICUA Colleges and Universities	Total MHA and MICUA Institutions
Total Revenues and Associated Spending	\$7,660,217,137	\$3,998,415,879	\$11,658,633,016
<u>Economic Impacts</u>			
Output	\$11,779,846,510	\$6,183,936,630	\$17,963,783,140
Employment	82,140	37,973	120,113
Labor Income	\$4,806,039,467	\$2,961,225,367	\$7,767,264,834
Estimated State and Local Government Revenues	<u>\$389,280,881</u>	<u>\$254,673,424</u>	<u>\$643,954,305</u>
Estimated State Revenue Impact	\$216,287,003	\$139,469,279	\$355,756,282
Estimated City Revenue Impact	\$172,993,878	\$115,204,139	\$288,198,017

Source: MHA and MICUA Institutions and the JFI

4.0 Selected Additional Socio-Economic Impacts of MHA and MICUA Institutions

In order to conduct the economic impact analysis describe above, the data required for the IMPLAN I/O modeling was collected through a survey of the eighteen MHA and MICUA members in the City. As part of this survey, additional data was requested from participating institutions in order to provide information on other aspects of the social and economic contribution made by these institutions to the Baltimore City. Some of the additional social and economic contributions of these institutions are as follow:

- Baltimore’s hospitality and tourism sector is one of the leading sources of economic activity in the City. MHA and MICUA member institutions make an important contribution to this sector by attracting visitors to the City to seek medical treatment, attend conferences and educational activities, visit patients or students, attend sporting events, and attend a variety of other events and activities. As presented in Table 4, based on the survey of the eighteen institutions, private nonprofit hospitals, colleges and universities attracted 931,427 visitors into Baltimore City, who stayed an estimated 1,263,340 nights, and spent a total of \$84.4 million;
- Baltimore is a leading “college town” and is home to one of the nation’s elite, leading research universities as well as a host of public and private higher educational institutions. These colleges and universities attract students from across the State and around the world to the City. Spending by these students is an important source of economic activity to the City. As presented in Table 5, these institutions have 21,508 full time students, who generate \$264.1 million in spending;
- Not only does the presence of leading private and research colleges and universities attract students into the City, these higher education institutions provide valuable educational services to City residents. As presented in Table 5, City residents account for 14% of enrollment and 15% of the financial aid awarded by at the five MICUA institutions studied;
- Baltimore City also benefits from the job opportunities created by the operations of the eighteen private nonprofit hospitals, colleges and universities located in the City. Hospitals and universities – the so called Meds and Eds – are leading drivers of economic activity in cities across the nation and are the major non-government employers in the City. Not only do these institutions create a large number of jobs in the City, they employ a large number of City residents. As presented in Table 6, 39% of reported employees at City MHA and MICUA member institutions are Baltimore City residents and 34% of total wages and salaries are paid to Baltimore City residents;
- Baltimore City is also one of the largest majority, minority resident jurisdictions in the nation. As a result, employment opportunities for minority persons are a key issue. As presented in Table 7, minority workers account for 45% of reported employment at City MHA and MICUA member institutions;
- Enhancing opportunities for locally owned businesses is a key issue for Baltimore City. As presented in Table 8, MHA-MICUA member institutions purchase \$822.3 million in goods and services from in-City suppliers. For these eighteen institutions, 13% of suppliers accounting for 20% of total purchases made are located in the City; and
- MHA-MICUA member institutions also make an important contribution to the fiscal health of the City. In fiscal 2011, they provided \$5.4 million to the City in its annual nonprofit assessment. In the survey these institutions were also asked to provide information on a variety of tax and other payments to the City, and these totaled almost \$42.0 million.

Table 4
Total Visitors and Visitor Days
Associated with MHA and MICUA Members, FY 2011

Item	Number of Visitors	Visitor Days	Estimated Visitor Spending
<u>Total MHA and MICUA Institutions</u>	<u>931,427</u>	<u>1,263,340</u>	<u>\$84,418,038</u>
MHA - Hospitals	737,398	984,344	\$65,775,182
MICUA Colleges and Universities ¹	194,029	278,996	\$18,642,856

(1) Sojourner–Douglass College did not complete a survey for this study. Data are for FY 2010.

Source: MHA and MICUA Institutions and the JFI

Table 5
Selected MICUA College and University Student Data
FY 2011

Item	
Student Enrollment ¹	21,508
Student Spending ¹	\$264,098,920
Total Undergraduate and Graduate Student Enrollment ²	34,529
Baltimore City Resident Undergraduate and Graduate Student Enrollment	4,877
% Baltimore City Resident	14%
Total Financial Aid ²	\$590,426,858
Baltimore City Resident Financial Aid	\$86,299,516
% Baltimore City Resident Financial Aid	15%

(1) Sojourner–Douglass College did not complete a survey for this study. Full time enrollment is for Fall 2010 from the Maryland Higher Education Commission. Student living expenses were estimated based on Cost of Attendance estimates from the College's website.

(2) Not including Sojourner–Douglass College.

Source: MICUA Institutions and the JFI

Table 6
Baltimore Economic Activity Associated with MHA and MICUA Members
FY 2011

Item	MHA - Hospitals	MICUA Colleges and Universities	Total MHA and MICUA Institutions
Total Employment	49,885	20,411	70,296
Baltimore City Resident Employment	17,155	9,982	27,137
% Baltimore City Employment	34%	49%	39%
Total Wages and Salaries	\$1,942,886,918	\$1,324,554,939	\$3,267,441,857
Baltimore City Wages and Salaries	\$483,083,160	\$625,846,442	\$1,108,929,601
% Baltimore City Wages and Salaries	25%	47%	34%

(1) Data on City employment and wages for some institutions is from Human Resources Departments and differs from the employment number used in the economic impact report.

Source: MHA and MICUA Member Institutions

Table 7
Total and Minority Employment
Associated with MHA and MICUA Members, FY 2011

Item	Employment	Minority Employment	% Minority Employment
<u>Total MHA and MICUA Institutions</u>	<u>68,846</u>	<u>30,795</u>	<u>45%</u>
MHA - Hospitals	48,042	24,774	52%
MICUA Colleges and Universities	20,804	6,020	29%

Source: MHA and MICUA Member Institutions

Table 8
Baltimore Economic Activity Associated with MHA and MICUA Members
FY 2011

Item	MHA - Hospitals	MICUA Colleges and Universities	Total MHA and MICUA Institutions
Total Suppliers ¹	39,545	48,145	87,690
Baltimore City Suppliers	4,288	6,727	11,015
% Baltimore City Suppliers	11%	14%	13%
Total Purchases ¹	\$2,481,274,352	\$1,578,048,223	\$4,059,322,575
Baltimore City Purchases	\$561,872,700	\$260,401,093	\$822,273,793
% Baltimore City Purchases	23%	17%	20%

(1) Data for JHHS and JHU are for FY2010.

Source: MHA and MICUA Member Institutions

Appendix

Appendix Table 1
MHA and MICUA Institutions Analyzed

MHA - Hospitals

Bon Secours Hospital
Good Samaritan Hospital
Harbor Hospital
Johns Hopkins Hospital
Johns Hopkins Bayview Medical Center
Kernan
Maryland General Hospital
Mercy Medical Center
Mt. Washington Pediatric Hospital
Sinai Hospital
St. Agnes Hospital
Union Memorial Hospital
University of MD Medical Center

MICUA Colleges and Universities

Johns Hopkins University
Loyola University
Maryland Institute College of Art
Notre Dame of Maryland University
Sojourner–Douglass College¹

(1) Sojourner–Douglass College did not submit a survey. Data are from for FY 2010 - from an MICUA Study.

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