ECONOMIC IMPACT ANALYSIS: THE CASE OF A HISTORICALLY BLACK UNIVERSITY

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ABSTRACT

The estimated Albany State University expenditure-output multiplier was 1.40. Total net expenditures associated with the University had an impact of $82,963,806 on Albany MSA economic output, $49,089,890 in value added (local earnings), and an employment impact of 1,746 full-time and part-time jobs in Albany MSA. Albany MSA industry mix was dominated by service industries and wholesale/retail businesses. All University expenditure sources had significant economic impacts on the major sectors of our local economy. Hence, Albany State University was intricately interwoven with these sectors of the local economy that sustain local economic well being. This study is a "snap-shot" analysis of economic contributions of Albany State University to Albany MSA economy in 1998/99 rather than a long-range outlook of the University's economic contributions. Also, the study did not account for the non-economic impact of the University, the University's economic impact beyond the Albany MSA, and the economic impact of the University's visitors during the study period.

INTRODUCTION

Non-profit organizations, including institutions of higher learning, often undertake economic impact studies as proxy for measuring their economic relevance in their locale and, in some cases, to justify public investments in their existence. Harik (1995) reported the economic impact of Western Michigan University (WMU) on Kalamazoo County, Michigan. In his study, Harik estimated the economic impact of WMU on employment, personal income and population of Kalamazoo County, Michigan as well as the rate of return on the State of Michigan's investment in Western Michigan University. Willis (1992) documented the impact of Virginia Commonwealth University (VCU) on Richmond Area, Virginia. Willis' work demonstrated all impacts of VCU, both economic and qualitative, on its community.

Willis' impact study, unlike most other impact studies, did not account for indirect and induced economic impact but accounted for direct economic impacts alone.

Garner and Holmes (1995) studied the economic impact of Tennessee-Tombigbee Waterway on its local economies and the United States economy in 1994. In their study, Garner and Holmes estimated direct, indirect and induced economic impacts of the waterway on economies of Alabama, Mississippi, Tennessee, Kentucky, and the United States. Also, Humphreys, et. al (1999) reported economic impact of the University of Georgia (UGA) on Athens Area in FY 1998. Humprey et. al. reported UGA's direct and indirect impact on Athens Area output, employment, and earnings. Two previous attempts were made to document economic impact of Albany State University (ASU), Albany, Georgia. Kooti (1993) and Brown (1997) estimated the economic impact of ASU on Albany economy in 1992 and 1994, respectively. Kooti and Brown reported direct economic impact of ASU expenditures on the Albany economy.

Other institutions of higher learning that recently conducted economic impact studies include Syracuse University, New York (Dickinson, 1999), Duke University, North Carolina (Rogoski, 1998), and Royals University College, East London, United Kingdom (Turner, 1997). In academic and non-academic (trade) journals, economic impact studies are often reported to justify private and/or public investments such as airport expansion (Sekhri, 1999), university research and development (Martin, 1998), stadiums (Baker, 1999), tourism (Rodriguez, 1999 and Fessenden, 1999) prisons construction (Hall, 1999), hospitals construction (Shepherd), etc.

The economic impacts of an institution of higher learning go beyond its locale. A university contributes to the local economy through technical assistance to local businesses and government and technology transfer resulting from faculty research. It also contributes to quality of life in providing cultural activities, sporting events, public lectures, volunteerism, charitable contributions, and in many other ways. This study seeks to determine the level of the fiscal impact of the University in Southwest Georgia in 1998/99 and to determine the nature of economic interrelationships between the university and the local businesses.

ECONOMIC IMPACT MODEL

The economic impacts of an economic unit is the response in a region's economic activities, such as output and employment, per unit dollars of final demand for goods and/or services of that economic unit to customers (households, businesses, and governments) outside the local economic region. Simply put, economic impacts of an establishment in a region are the net changes in the region's economic activities as a result of inflow of money from outside the region that are attributable to the existence of that establishment in the region. Therefore, all

expenditures in a region originating from outside the region constitute economic impacts in the region.

Economic impacts could be classified into three broad categories: direct effects, indirect effects, and induced effects. Direct effects represent the net change in economic activities (e.g., output or employment) as a result of a unit expenditure on final demand for goods and/or services of an industry or establishment. Indirect effects are net changes in economic activities resulting from interactions of all local industries, per unit value of final demand for goods and/or services of an industry or establishment. Induced effects represent the net change in economic activities resulting from expenditures of new household income generated by the direct and indirect effects, per unit value of final demand for goods and/or services of an industry or establishment. Both the indirect and induced effects constitute total effect of secondary, repetitive and continuous flow of spending and income on the local economy over a period of time. The cumulative effect of such secondary, repetitive and continuous flow of spending and income on the local economy over a period of time is technically known as the multiplier effect. The sum of the direct, indirect, and induced effects is the total impact effect, which represents the total net change in economic activities per unit value of final demand for goods and/or services of an economic unit.

The Multiplier Effect

The concept of multiplier effect is based on the notion that total impact of an initial exogenous spending (spending that originated outside the local economy) on the local economy is a multiple of that initial exogenous spending in the local economy. For instance, if an exogenous expenditure of $1 billion in a local economy results in a total economic impact of $4 billion on the local economy's output, then the initial exogenous spending of $1 billion has created an additional $3 billion in local economy's output. Therefore, the expenditure-output multiplier in that local economy is 3, i.e., each extra exogenous dollar spending creates an additional $3. The multiplier is the net change in economic activity (such as output) per additional unit of initial exogenous spending in the economy.

The concept of multiplier is based on the assumptions that the initial expenditure is usually associated with investment spending and the economy supports repetitive, continuous flow of expenditures and income (McConnell, et. al.). Thus an initial change in rate of spending will cause a spending chain with numerous successive steps of diminishing importance that accumulate to a multiple change in the level of output or employment. Generally, the greater the interaction of an industry within the local economy, the higher the multiplier of that industry or the higher the marginal propensity to consume locally (MPCL) by the households, the higher the multiplier for the local economy. Marginal propensity to consume locally

is the proportion of each extra exogenous dollar expenditure that is spent on locally produced goods and/or services.

Table 1 illustrates the concept of multiplier numerically. For a local economy, for instance, suppose the marginal propensity to consume locally is 0.75, the successive spending and incomes created as a result of an exogenous expenditure of $1 are shown in Table 1. Given that the MPCL = 0.75, each exogenous dollar spent in the local economy has a $1 direct impact on our local economy, initially, and it will create $0.75 in local income that will be available for further spending. In the second round of re-spending, the $0.75 additional local income has a direct impact on the local economy and it will create $0.56 in local income for further spending, etc. This repetitive, continuous flow of expenditures and income will continue until no additional income and expenditure can be created and the economy is said to be in equilibrium. At the new equilibrium, an extra dollar spent in the local economy would have resulted in a sum of $5.00 (additional $4.00) being created in the local economy with a total leakage (income spent outside the local economy though non-local taxes and non-local expenditures) of $1. In this case, the initial injection of $1.00 into the economy resulted in an extra $4.00 in local income/output, thus the spending-income (output) multiplier is 4. The concept of multiplier is applicable to other economic variables such as employment and each industry or sector of the economy has a unique multiplier of its own for an economic activity.

Table 1: Numerical Illustration of the Multiplier Concept

	Direct Impact	Income Created for Successive Spending Locally (MPCL = 0.75)	Leakage (Income Spent Non-Locally)
Initial Expenditure	**$1.00**	$0.75	$0.25
First Round of Re-Spending	$0.75	$0.56	$0.19
Second Round of Re-Spending	$0.56	$0.42	$0.12
Third Round of Re-Spending	$0.42	$0.32	$0.10
Fourth Round of Re-Spending	$0.32	$0.24	$0.08
Fifth Round of Re- Spending	$0.24	$0.18	$0.06
All other Rounds of Re-Spending	$1.71	$0.78	$0.20
Total	**$5.00**	**$4.00**	**$1.00**

DATA SOURCES

Data for this study were obtained from primary and secondary sources. Data on student, faculty and staff demographic and expenditures were obtained from student and faculty surveys conducted in Fall 1998. Additional information on faculty and students such as student enrollment and faculty and staff compensations were obtained from the Fiscal Affairs Office, the Registrar's Office and the Institutional Research and Planning Office. Albany MSA regional economic data were obtained from Minnesota IMPLAN Group, Inc. IMPLAN economic data contain multipliers for various economic spending levels (sectors) for specific counties in the United States. IMPLAN economic data are consistent with RIMS II regional multipliers calculated by the Bureau of Economic Analysis, United States Department of Commerce (Gazel, 1998).

EMPIRICAL RESULTS

The results obtained from this study were classified into three broad categories: economic impact of ASU student spending, economic impact of ASU faculty and staff spending, economic impact of ASU Operating Costs, and total output, value added, and employment impacts. This study does not include impacts of the University's visitors spending and the University spending on ASU reconstruction. The University expenditures on reconstruction were excluded because they were non-continuous but only to remedy unfortunate circumstances imposed on the University as a result of natural disasters – the floods of 1994 and 1998. The expenditures by the University's visitors were not accounted for primarily because of inadequate data. The omission of the visitors' expenditures will, therefore, cause an underestimation of the total economic impact of the University on Albany MSA.

(A) Economic Impact of Albany State University's Student Spending:

Albany State University's students spent about $14,289,942 in 1998/99, primarily on living expenses. Since students' sources of fund are from outside the Albany MSA, such as federal government grants, loans, etc. and because local resident-students could have spent their educational expenses at other Universities outside Albany MSA, student expenditures are, therefore, considered exogenous spending and they constitute direct economic impact on Albany MSA. Student tuition, health-care, and other University fees were not included to avoid double counting since these fees constituted income to the University that the University invariable spent in the local economy. The impact of such student expenditures was already accounted for elsewhere.

Table 2 shows the impact of Albany State University's student expenditures on the level of economic output in Albany MSA. In 1998/99, Albany State University's student expenditures generated a total output of $21,031,808. In Albany

MSA, Albany State University's student expenditures had greatest output impact on real estate, retail businesses, general merchandise and food stores, automotive dealers and service stations, restaurants, banking and insurance services, and commercial printing businesses. In addition, as Table 3 indicates, ASU student expenditures generated $13,079,298 in local income (value added).

Table 2: ASU Student Spending Impact on Albany MSA Output

Economic Sector	OUTPUT ($) Direct	Indirect	Induced	Total
Periodicals and Paper Products	362,834	75,112	29,940	467,886
Wholesale Trade	167,345	285,696	209,598	662,639
Real Estate	3,224,025	503,701	244,113	3,971,839
Petroleum Products	360,633	1,569	1,493	363,695
Hotels and Lodging Places	4,702	35,531	23,875	64,108
Amusement & Recreation Services	38,729	2	10,427	49,158
Government Services, including UPS	177,456	186,828	129,830	494,114
Commercial Printing	1,258,439	43,260	5,124	1,306,823
General Merchandise and Food Stores	1,792,117	15,278	188,298	1,995,693
Automotive Dealers and Service Stations	1,666,767	61,466	190,371	1,918,604
Restaurants	1,645,164	39,096	221,907	1,906,167
Miscellaneous Retail	1,016,031	8,662	106,754	1,131,447
Banking and Insurance Services	1,334,966	288,015	312,069	1,935,050
Other	1,240,734	1,571,904	1,951,947	4,764,585
Total	14,289,942	3,116,120	3,625,746	21,031,808

Table 3: ASU Student Spending Impact on Albany MSA Value Added

Economic Sector	VALUE ADDED ($) Direct	Indirect	Induced	Total

Periodicals and Paper Products	153,717	34,137	12,825	200,679
Wholesale Trade	114,889	196,142	143,897	454,928
Real Estate	2,234,877	349,163	169,218	2,753,258
Petroleum Products	166,609	725	690	168,024
Hotels and Lodging Places	2,432	18,375	12,347	33,154
Amusement & Recreation Services	17,237	1	4,641	21,879
Government Services, including UPS	59,242	97,419	56,462	213,123
Commercial Printing	211,266	15,663	1,892	228,821
General Merchandise and Food Stores	1,436,083	12,243	150,889	1,599,215
Automotive Dealers and Service Stations	1,032,749	13,833	126,673	1,173,255
Restaurants	788,392	18,735	106,342	913,469
Miscellaneous Retail	851,087	7,256	89,424	947,767
Banking and Insurance Services	916,551	186,902	200,153	1,303,606
Other	926,309	901,398	1,240,413	3,068,120
Total	8,911,440	1,851,992	2,315,866	13,079,298

Economic sectors in Albany MSA that experienced most significant income impact were the same as the economic sectors that student expenditures had greatest output impact upon, except commercial printing industry. ASU student expenditures' impact on commercial printing output in Albany MSA was $1,306,823 while its impact on commercial printing local income was low $228,821. Low income impact on commercial printing industry occurred because a high proportion of student spending on commercial printing did not constitute retained earning (income) in Albany MSA. Rather, most of the student spending on commercial printing leaked out of the Albany MSA to the regions where the major textbooks publishers were located. As Table 4 indicates, total student spending generated about 362 jobs in Albany MSA with greatest impact on general merchandise and food stores, restaurants, retail businesses, and real estate.

Table 4: ASU Student Spending Impact on Albany MSA Employment

Economic Sector	Total Employment (Number of Jobs*)
Periodicals and Paper Products	2.3

Wholesale Trade	7.6
Real Estate	25.8
Petroleum Products	1.0
Hotels and Lodging Places	1.4
Amusement & Recreation Services	2.7
Government Services, including UPS	3.4
Commercial Printing	8.4
General Merchandise and Food Stores	78.7
Automotive Dealers and Service Stations	31.0
Restaurants	59.0
Miscellaneous Retail	41.2
Banking and Insurance Services	14.6
Other	84.8
Total	361.9

*Full-time and part-time jobs.

(B) Economic Impact of Albany State University's Faculty and Staff Spending:

In 1998/99, Albany State University faculty and staff earned $24,691,530 in salaries, wages, and fringe benefits. Since not all earned income was received, faculty earned income and staff earned income were adjusted by factors of 0.70 and 0.85, respectively. Faculty members, including faculty/administrators, were assumed to pay an average of 30% income tax while the University staff was assumed to pay an average of 15% income tax.

ASU faculty and staff expenditures had output impact of $16,827,781 on Albany MSA (Table 5). Faculty and staff spending had greatest output impact on real estate, medical and health services, and banking and insurance services. Also, ASU faculty and staff expenditures created $10,740,653 in local income in Albany MSA, with the greatest impact on the same industries as output (Table 6). Albany State University's faculty and staff expenditures also had significant output and income impacts on wholesale/retail businesses, general merchandise and food stores, automotive dealers and service stations, and restaurants. In addition, Albany State

University's faculty and staff spending created 266 jobs in Albany MSA, with greatest employment impact on medical services, general merchandise and food stores, restaurants, wholesale/retail businesses, and banking and insurance services (Table 7).

Table 5: ASU Faculty and Staff Expenditures Impact on Albany MSA Output

Economic Sector	Direct	OUTPUT ($) Indirect	Induced	Total
		Indirect		
Maintenance & Repairs – Residential, etc.	-	316,224	76,177	392,401
Wholesale Trade	602,576	177,547	191,772	971,895
Real Estate	1,894,006	367,957	541,764	2,803,727
Communications	303,817	84,729	92,936	481,482
Educational Services	86,285	304	19,359	105,948
Medical and Health Services	2,123,383	24,529	522,095	2,670,007
Government Services, including UPS	356,154	136,539	118,788	611,481
Legal Services	175,272	69,797	63,910	308,979
General Merchandise and Food Stores	668,676	12,612	172,283	853,571
Automotive Dealers and Service Stations	646,674	48,048	174,180	868,902
Restaurants	764,146	28,987	203,034	996,167
Miscellaneous Retail	379,103	7,151	97,675	483,929
Banking and Insurance Services	818,506	283,580	285,527	1,387,613
Other	2,152,100	981,703	757,876	3,891,679
Total	10,970,698	2,539,707	3,317,376	16,827,781

Table 6: ASU Faculty and Staff Spending Impact on Albany MSA Value Added

Economic Sector	VALUE ADDED ($) Direct	Indirect	Induced	Total
Maintenance & Repairs – Residential, etc.	-	157,013	37,806	194,819
Wholesale Trade	413,691	121,893	131,659	667,243
Real Estate	1,442,488	255,066	407,346	2,104,900
Communications	194,594	54,182	59,430	308,206
Educational Services	38,123	129	8,540	46,792
Medical and Health Services	1,371,698	12,425	336,761	1,720,884
Government Services, including UPS	140,736	73,715	199,697	414,148
Legal Services	88,271	35,151	32,186	155,608
General Merchandise and Food Stores	535,832	10,107	138,056	683,995
Automotive Dealers and Service Stations	440,483	20,491	165,155	626,129
Restaurants	366,192	13,891	97,297	477,380
Miscellaneous Retail	317,559	5,989	81,818	405,366
Banking and Insurance Services	521,433	187,498	167,130	876,061
Other	1,238,410	564,691	256,021	2,059,122
Total	7,109,510	1,512,241	2,118,902	10,740,653

(C) Economic Impact of Albany State University's Operating Costs:

In 1998/99, Albany State University's total operating cost was $25,738,609. This level of direct spending in operating costs had a $54,104,217 impact on output in Albany MSA, with the greatest impact on economic output of the education sector (universities, colleges and schools) in Albany MSA (Table 8). In addition, significant output impact occurred in other sectors of Albany MSA economy such as facility maintenance and repairs, real estate, wholesale/ retail businesses, medical and health services, and banking and insurance services.

Table 7: ASU Faculty & Staff Spending Impact on Albany MSA Employment

Economic Sector	Total Employment (Number of Jobs*)
Maintenance & Repairs – Residential, etc.	5.4
Wholesale Trade	11.1
Real Estate	7.7
Communications	1.8
Educational Services	2.9
Medical and Health Services	38.9
Government Services, including UPS	4.3
Legal Services	3.8
General Merchandise and Food Stores	33.5
Automotive Dealers and Service Stations	14.6
Restaurants	30.8
Miscellaneous Retail	17.5
Banking and Insurance Services	12.8
Other	81.0
Total	266.1

*Full-time and part-time jobs.

Albany State University operating costs generated $25, 269,939 income in Albany MSA (Table 9). ASU operating costs had significant impact on income on the same economic sectors as output. In Albany MSA, a total of 1,118 jobs were attributed to Albany State University operating costs (Table 10). The greatest employment impact was recorded by the education sector (universities, colleges and schools) in Albany MSA. Other sectors of Albany MSA economy that experienced significant employment impact included maintenance and repairs, real estate, medical and health services, wholesale/retail services, general merchandise and food stores, restaurants, computer and data processing services, and banking and insurance.

Table 8: ASU Operating Costs Impact on Albany MSA Output

Economic Sector	Direct	OUTPUT ($) Indirect	Induced	Total
Facility Maintenance & Repairs	-	2,320,886	153,249	2,474,135
Wholesale Trade	-	422,127	637,418	1,059,545
Real Estate	-	1,708,594	742,380	2,450,974
Computer and Data Processing Services	-	722,780	38,349	761,129
Universities, Colleges and Schools	25,738,602	73	2,376	25,741,051
Medical and Health Services	-	2,052	1,735,355	1,737,407
Government Services, including UPS	-	246,787	394,831	641,618
Land Scape and Horticultural Services	-	37,051	113,121	150,172
General Merchandise and Food Stores	-	47,255	572,639	619,894
Automotive Dealers and Service Stations	-	33,486	405,796	439,282
Restaurants	-	42,507	674,850	717,357
Miscellaneous Retail	-	26,791	324,655	351,446
Banking and Insurance Services	-	327,586	949,045	1,276,631
Other	-	2,401,245	4,282,331	6,683,576
Total	25,738,602	8,339,220	11,026,395	45,104,217

Table 9: ASU Operating Costs Impact on Albany MSA Value Added

Economic Sector	VALUE ADDED ($) Direct	Indirect	Induced	Total
Facility Maintenance & Repairs	-	1,304,429	86,132	1,390,561
Wholesale Trade	-	289,807	437,612	727,419
Real Estate	-	1,184,388	514,614	1,699,002
Computer and Data Processing Services	-	383,006	20,321	403,327
Universities, Colleges and Schools	13,209,844	37	1,219	13,211,100
Medical and Health Services	-	1,321	1,119,338	1,120,659
Government Services, including UPS	-	131,712	171,708	303,420
Land Scape and Horticultural Services	-	32,618	99,428	132,046
General Merchandise and Food Stores	-	37,866	458,875	496,741
Automotive Dealers and Service Stations	-	25,403	307,839	333,242
Restaurants	-	20,370	323,400	343,770
Miscellaneous Retail	-	22,441	271,950	294,391
Banking and Insurance Services	-	191,331	608,692	800,023
Other	-	1,393,817	3,741,080	5,134,897
Total	13,209,844	5,017,225	7,042,870	25,269,939

Table 10: ASU Operating Costs Impact on Albany MSA Employment

Economic Sector	Total Employment (Number of Jobs*)
Facility Maintenance & Repairs	36.9
Wholesale Trade	12.1
Real Estate	15.9
Computer and Data Processing Services	10.3
Universities, Colleges and Schools	827.5
Medical and Health Services	25.2
Government Services, including UPS	5.1
Land Scape and Horticultural Services	6.4
General Merchandise and Food Stores	24.5
Automotive Dealers and Service Stations	8.7
Restaurants	22.2
Miscellaneous Retail	12.8
Banking and Insurance Services	11.7
Other	99.2
Total	1,118.5

*Full-time and part-time jobs.

(D) Total Output, Value Added (Earnings) and Employment Impacts:

In 1998/99 Albany State University's total spending in operating costs, faculty and staff salaries and fringe benefits was $50,430,139 and estimated total student expenditures was $14,395,140. After making the necessary adjustments for faculty and staff federal and state income taxes, Albany State University's total net injections into Albany MSA was $59,228,895, excluding the University visitors' spending and the University sending on campus reconstruction. Total net expenditures associated with the University had $82,963,806 impact on Albany MSA economic output (Table 11). Therefore, Albany State University's expenditure-output multiplier was 1.40, i.e., each dollar expenditure associated with the University generated an additional $1.40 of economic output in Albany MSA.

Among the sources of expenditures associated with the University, Albany State University's operating costs posted the largest output-expenditure multiplier of 1.75.

Table 11: ASU Total Output, Earnings, and Employment Impacts on Albany MSA

Expenditure	Output ($)	Value Added ($)	Employment (Number of Jobs*)
Student Expenditures	21,031,808	13,079,298	362
Faculty Expenditures	7,783,754	4,981,642	124
Staff Expenditures	9,044,027	5,759,011	142
ASU Operating Costs	45,104,217	25,269,939	1,118
Total	82,963,806	49,089,890	1,746

*Full-time and part-time jobs.

Similarly, total net expenditures associated with Albany State University resulted in $49,089,890 in value added or earnings in Albany MSA (Table 11), i.e., Albany State University's total net spending created $49.09 million income to local businesses and households in Albany MSA. Also, the University had an employment impact on Albany MSA with 1,746 full-time and part-time jobs. Considering the fact that the University employed 492 workers, Albany State University, therefore, created an additional 1,254 jobs in the local economy.

LIMITATIONS

Economic impact analyses are "snap-shot" analyses of economic contributions of an industry or establishment over a period of time. Therefore, this study is a reflection of Albany State University's economic contribution to Albany MSA in 1998/99 rather than a long-range outlook of the University's economic contributions. Also, the study did not account for the non-economic impact of the University such as contribution to quality of life in providing cultural activities, charitable contributions, volunteerism, etc. In addition, the study did not account for the University's economic impact beyond the Albany MSA. The study also ignored the economic impact of University visitors during the study period. All of the aforementioned limitations will lead to an underestimation of total impact of Albany

State University. Nevertheless, the study provided useful information on the economic impact of the University on the local economy in 1998/99.

CONCLUSIONS

This study indicated that Albany State University made a significant economic impact on Albany MSA economy in 1998/99. The University expenditures generated significant impact on Albany MSA output, employment, and value added or earnings (local income). Therefore, Albany State University is a great asset to Albany MSA as a result of its economic, educational, and other non-economic contributions to improve the quality of life locally and nationwide.

Albany MSA industry mix is dominated by service industries and wholesale/retail businesses. All University expenditure sources had significant economic impacts on the major sectors of our local economy. Hence, Albany State University was intricately interwoven with these sectors of our local economy that sustain our local economic well being.

This study provides a detailed study of economic impact of Albany State University on the local economy (Albany MSA). The methodology of the study was based on sound economic theory and defensible assumptions that made its results reasonable. Therefore, the underestimation of the economic impact of Albany State University as a result of the omitted University related expenditures is associated with an unknown but determinable probability.

This study has provided a good basis for further study of Albany State University that incorporates all expenditure sources and measurable non-economic impact as well.

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