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Texas Tech University Health Sciences Center

2016 Economic Impact in El Paso, Texas

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HUNT INSTITUTE
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ECONOMIC IMPACT SUMMARY SHEET

Texas Tech University Health Sciences Center

Impacts in El Paso County, Texas

(Dollar amounts in 2016 $)

Operating Cost

Business Volume	**$ 222.923 mil.**
Employment	**2,433**
Labor Income	**$ 162.728 mil.**

Capital Investments

Business Volume	**$ 4.661 mil.**
Employment	**18**
Labor Income	**$ 0.885 mil.**

Texas Tech University Health Sciences Center Economic Impact Analysis: Operations, Construction and Equipment Purchases in El Paso, Texas

Introduction

The Institute for Policy and Economic Development (IPED) and the Hunt Institute for Global Competitiveness at the University of Texas at El Paso were contracted by the Texas Tech University Health Sciences Center (TTUHSC) in El Paso to conduct an economic impact analysis regarding some of the functions this organization performs within El Paso County. TTUHSC was formed by the Texas legislature in 1969 as a multi-campus institution including a local branch in El Paso. This local branch has three schools: the Paul L. Foster School of Medicine, the Gayle Greve Hunt School of Nursing, and the Graduate School of Biomedical Sciences. During Fiscal Year (FY) 2015, TTUHSC reported 1,613 employees (including faculty, staff, residents and students), within the three schools that operate in El Paso. With an operating budget of over $204 million, plus construction activities and institutional equipment purchases of $10 million, TTUHSC constitutes a relevant economic force in El Paso. The present study estimates the economic impacts resulting from the TTUHSC regular activities in El Paso County. Financial expenses for FY 2015 were provided by TTUHSC and classified as Operating Costs and Capital Investments, which include construction projects and fixed asset acquisitions.

Methodology

To estimate the economic impact of TTUHSC in El Paso County, a modeling technique known as Input-Output (I-O) analysis is utilized. I-O analysis illustrates how industries and institutions are linked by the intermediate inputs they provide one another to produce the final output in a given economy. For example, in order to produce a good or provide a service, an industry or institution requires materials, products and services from other supplier industries or institutions. Similarly, these supplier industries require materials, products and services to produce the intermediate inputs that will be used for the provision of the final product or service. Essentially, an I-O model captures all rounds of inter-industry/institutional relationships that make up the production processes of industries in a given economy.[1] Therefore, an I-O model can be used to estimate the regional effects of a particular change or shock to that region's economy.

[1] Miernyk, W. H. (1965). *Elements of Input-Output Analysis.* New York: Random House.

Inter-industry/institutional relationships and their overall economic effects on a region are measured using multipliers. Multipliers estimate the total change in an economy resulting from a one unit change in production, employment, income, or some other component of value added. For example, an employment multiplier of 2 suggests that for every one job created by a given industry, an additional job will be generated within the region. It is important to note that different industries or sectors will vary in multiplier size. For instance, industries exhibiting higher levels of interdependence with other industries within a given economy will typically be characterized by larger multipliers. Thus, industries relying less heavily on imports will generally have larger multipliers relative to those requiring commodities and services produced outside the given economy. As a result, larger regions will often have larger multipliers than smaller regions.

There are several I-O commercial software packages available, each of which provides its own unique regionalized multipliers. The model chosen for this study is the IMPLAN or IMpact analysis for PLANing system.[2] Similar to traditional regional economic modeling techniques, IMPLAN employs a top-down approach, using national data as a control total for state data, and state data, in turn, is used as a control total for county data. In addition to being flexible and relatively easy to modify, IMPLAN explicitly breaks out impacts into three types of effects measured by its multipliers, making this an attractive I-O software package.[3] The three types of effects measured by the IMPLAN multipliers used in this report include the **direct**, the **indirect**, and the **induced** effects. IMPLAN is widely accepted and extensively used by numerous public and private organizations to conduct economic impact studies.[4]

The **direct** effect refers to the initial change in demand resulting from new or current expenditures or employment. This effect is the impact that is actually applied to the predictive model for analysis. I-O multipliers are then used to generate changes in other regional economic sectors given the expenditure or employment value of interest. Examples of a direct effect include new operation expenses by a firm in the region or construction expenses in the area.

Indirect effects represent all changes in regional industry activity, such as increase in production and employment that result from the direct effect. For example, increases in the production of communications equipment will result in increased sales of semiconductors, software, and other necessary inputs from supplier industries within the region. This increased supplier industry activity is captured by the indirect impact.

[2] IMPLAN Group, LLC, IMPLAN System (data and software),16740 Birkdale Commons Parkway, Suite 206, Huntersville, NC 28078 www.IMPLAN.com

[3] Rickman, D. S., & Schwer, K. (Fall 1993). A Systematic Comparison of the REMI and IMPLAN Models: The Case of Southern Nevada. *The Review of Regional Studies*, 148-149.

[4] Bonn, M. A., & Harrington, J. (2008). A comparison of the three economic impact models for applied hospitality and tourism research. *Tourism Economics*, 14 (4) 769 – 789.

Finally, the **induced** effect measures the impact of household spending within a region due to changes in labor income or compensation received by workers and business proprietors for both the directly and indirectly impacted regional industries. Continuing with our previous example, increases in the production of communications equipment and supplier industry activities generate increases in worker and proprietor incomes. Households then spend a portion of this income on various goods and services offered within the regional economy, further increasing area sales employment, and income for other local economic sectors. The sum of these three effects represents the total impact of the new or current expenditure/employment value of interest.

IMPLAN provides information and impact results for three key regional economic variables: **output, employment,** and **labor income.** Each of these variables is defined below:

1. **Output -** represents the total value of industry production or the value of all goods and services produced within the region's economy. Output is an overall measure of economic activity and is the sum of income paid to all factors of production as well as all inter-industry purchases.

2. **Labor Income -** represents the sum of compensation paid to workers as well as business proprietors. This value includes employer paid benefits and payroll taxes, in addition to wages and salaries. Note that when interpreting the results of this study, labor income and output should not be summed, as labor income is a component of the output value.

3. **Employment –** represents the average annual jobs within a sector and consists of both full-time and part-time positions. This approach is consistent with the international standard for counting the number of jobs in an economic system.

Data

The IMPLAN model requires some basic information in order to estimate the total (direct + indirect + induced) impacts of TTUHSC activities on output, employment, and labor income in El Paso County. The analysis was conducted in two sections: Annual Operations and Capital Investments. Operations were divided into Employees & Payroll[5] and Other Operating Expenses for four different categories (Paul L. Foster School of Medicine, the Gayle Greve Hunt School of Nursing, the Graduate School of Biomedical Sciences, and Institutional Support). Capital Investment expenditures were divided into Construction and Equipment Purchases for the four entities. All data was provided by TTUHSC based on FY 2015 expense

[5] As noted, Employees & Payroll include wages, salaries, and stipends, as well as paid benefits for each employee.

report (total employment, total payroll, annual operations, construction investment and equipment purchases). In addition, several assumptions and calculations were made by IPED. For instance, the percentage of employee local expenses (as opposed to spending outside of the region) was calculated using US Bureau of Labor Statistics' annual expenditure means by deciles of income.[6] TTUHSC provided information on local expenditures for annual operations, construction investment, and purchases of equipment. A summary of the TTUHSC expense report during the FY 2015 is presented in Table 1.

Table 1. Summary Data

	Total Employment	Total Expense
Operating Cost		
Employees & Payroll		
Paul L. Foster School of Medicine	*1282*	*118,786.5*
Gayle Greve Hunt School of Nursing	*24*	*2,141.5*
Graduate School of Biomedical Sciences	*3*	*155.1*
Institutional Support	*304*	*24,126.4*
Total	***1613***	***145,209.6***
Operating Expenses		
Paul L. Foster School of Medicine		*25,455.6*
Gayle Greve Hunt School of Nursing		*994.5*
Graduate School of Biomedical Sciences		*145.0*
Institutional Support		*32,728.4*
Total		***59,323.5***
Capital Investments		
Construction		***4,904.8***
Equipment Purchases		***5,079.2***

Source: Texas Tech University Health Science Center.

Note: All dollar amounts are reported in thousands, based upon FY 2015 figures.

[6] Table 1110 of the Consumer Expenditure Survey, U.S. Bureau of Labor Statistics, 2015.

Economic Impact Findings

Impact of Annual Operations

The economic impact results of TTUHSC Operating Cost are presented in Table 2. All dollar impact values, based on FY 2015 data, are adjusted to thousands of 2016 dollars. As noted above, Operating Cost represents the Employees & Payroll plus Operating Expenses combined. Employees & Payroll in TTUHSC account for more than $145 million for all four categories. Annual Operating Expenses are reported to exceed $59 million. The $169.4 million direct impact of local expenditures is multiplied into $222.9 million in Output or Business Volume in El Paso County. Approximately $7.4 million represents increased sales of supplier industries, and $46 million represents increased household spending. In terms of employment, 1613 people were employed by TTUHSC during FY 2015. IMPLAN results indicate that TTUHSC's operations lead to an additional 820 indirect jobs within El Paso County; 51 of which are in support of increased industry supplier and 769 in support of increased household spending. The reported direct payroll expenses account for over $147 million in labor income, which generates an additional $15 million paid to other laborers and self-employed individuals residing within El Paso County.

Table 2. TTUHSC Economic Impacts in El Paso (Operating Cost)

	Output	*Employment*	*Labor Income*
Direct Effects	$169,450.2	1,613	$147,984.5
Indirect Effects	$7,455.0	51	$1,718.1
Induced Effects	$46,017.9	769	$13,026.0
Total Effect	$222,923.2	2,433	$162,728.7

Source: UTEP Institute for Policy and Economic Development
Notes: All dollar amounts are reported in thousands of 2016 dollars; amounts may not add up due to rounding.

Impact of Capital Investments

The economic impact results derived from TTUHSC construction activities and equipment purchases are presented in Table 3. Dollar impact values are based on FY 2015 budget data and are adjusted to thousands of 2016 dollars. Capital Investments represent construction figures of $4.9 million and equipment purchases for more than $5 million, almost $10 million combined. The direct effect of $3.4 million (based upon the portion spent locally) is multiplied into a total of $4.6 million in Output or Business Volume

in El Paso County. Impacts derived from subsequent rounds of supplier industries spending are estimated to be about $0.7 million, and almost $0.5 million of increased household spending. A total of 18 additional jobs is expected to be generated from TTUHSC capital investments. Total labor income is estimated to be $0.9 million.

Table 3. TTUHSC Economic Impacts in El Paso (Capital Investments)

	Output	*Employment*	*Labor Income*
Direct Effects	$3,477.7	10	$557.5
Indirect Effects	$690.0	4	$187.2
Induced Effects	$494.1	4	$139.9
Total Effect	$4,661.9	18	$884.8

Source: UTEP Institute for Policy and Economic Development
Notes: All dollar amounts are reported in thousands of 2016 dollars; amounts may not add up due to rounding.

Additional Impact

In addition to economic impacts resulting from TTUHSC regular activities, an additional economic benefit was calculated in this study. TTUHSC provides unreimbursed care and uncompensated charity care regularly. During FY 2015, TTUHSC reported a value of $28.9million for such services. This translates to approximately $734 of free medical care annually to families with income below the poverty line in El Paso County[7].

Conclusion

The overall economic benefits derived from TTUHSC activities are substantial to the local economy. Impacts on business volume and labor income resulting from TTUHSC activities are approximately $227.5 million and $163.6 million, respectively. Total jobs resulting from all TTUHSC activities is estimated to be 2,451. These impacts along with the unreimbursed care and uncompensated charity care that TTUHSC provides regularly are tangible evidence of the value of TTUHSC to El Paso County, Texas.

[7] The $734 figure was estimated using data from U.S. Census Bureau, 2014 American Community Survey 1 – Year Estimates.

Disclosure: The Hunt Institute for Global Competitiveness has assumed the functions and responsibilities of the Institute for Policy and Economic Development (IPED). The latter organization has been disestablished. Please refer all questions to the Hunt Institute.

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