

University of New Mexico
Bureau of Business and Economic Research



The Economic Impact of the University of New Mexico on the State of New Mexico

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-Doleswar Bhandari

Table of Contents

EXECUTIVE SUMMARY	V
INTRODUCTION	1
METHODOLOGY	3
Data	3
Method	3
INPUTS.....	6
Revenue	6
Expenditures	7
Employment	9
IMPACTS.....	10
Output.....	10
Employment	10
Income.....	10
CONCLUSION AND LIMITATIONS	12

Executive Summary

The University of New Mexico is a significant contributor to New Mexico's economy and has a significant impact resulting directly from its ability to attract out-of-state funds.

- In fiscal year 2010 UNM operations (and construction), including the UNM campuses, UNM hospitals and UNM Medical Group accounted for \$1.86 billion in expenditures and nearly 25,100 jobs (including 638 non-resident jobs). Total salaries and benefits were \$1.03 billion. Non-personnel expenditures totaled \$833 million.
- Overall, 48.8% of UNM's expenditures were supported by out-of-state revenue sources.
- These outside dollars supported \$620.2 million in UNM output, 6,839 jobs and \$319 UNM payroll.
- All this additional spending generated indirect and induced economic activity, generating approximately \$514.8 million in additional economic activity, \$155.3 in additional income and 4,325 additional jobs through indirect and induced economic activity.
- The total economic impact of the out-of-state dollars UNM brought into New Mexico in fiscal year 2010 amounts to more than \$1.1 billion in total output, \$474.6 million in income, and 11,164 in jobs. A total of \$1.83 was generated in the New Mexico economy for every dollar UNM spent in New Mexico that was supported by out-of-state revenues.

Introduction

The University of New Mexico Office of the President commissioned the UNM Bureau of Business and Economic Research (BBER) to conduct a study of the economic impact of the University of New Mexico (UNM) on the economy of New Mexico for the fiscal year 2010. This report contains the results of the study and outlines the data and methods used to arrive at these results.

Specifically, this study focuses on the economic impacts resulting from UNM spending and employment. The computed impacts show how the dollars that flow to UNM from outside of New Mexico (out-of-state) sources support direct spending on salaries, benefits, and goods and services. The impacts also show how spending creates additional, derivative, economic activity in the state of New Mexico.¹ For instance, UNM's expenditures on goods and services create indirect effects as the firms supplying UNM purchase supplies from other firms and employ people to produce their products. Part of salaries of UNM employees and UNM vendors are then spent in the community, creating induced effects, causing further demand for goods and services and resulting in more jobs and additional income. The indirect and induced effects, combined with the direct contribution of UNM funded by out-of-state sources, result in the total economic impact of the University of New Mexico on the state of New Mexico. However, it is important to note that this is not the maximum impact from UNM. Impacts of other factors such as encouraging technology development and contributing to an educated workforce are likely to be substantial even if they are less easily quantified.

A summary of these impacts can be found in Table 1.1. Approximately 51.3 percent of UNM's revenues are from non-New Mexico sources. These out-of-state revenues total \$907.8 million (see Table 1.2). Additionally, an estimated 68 percent of UNM's expenditures occur within the state, largely due to in-state employee compensation, and local construction spending. As a result, UNM's success in attracting out-of-state revenues is directly responsible for providing 6,839 jobs, \$319.4 million in salaries, and nearly \$620.2 million in in-state expenditures. These direct impacts go on to fuel total economic activity of \$1.135 billion in output, \$474.7 million in labor income, and 11,160 jobs. Finally, the output multiplier of 1.83 shows that a total of \$1.83 was generated in the New Mexico economy for every dollar UNM spent in New Mexico that was supported by out-of-state revenues.

¹ Out-of-state sources include a variety of federal funding sources such as federal grants as well as Medicaid and Medicare. Also included are out-of-state tuition and fees, gifts, contracts and others.

Table 1.1 Economic Impact of UNM on the State of New Mexico¹ (Labor income and output are presented in \$ million)

Impact Type	Employment ²	Labor Income ³	Output ⁴
Direct	6,835	319.4	\$620.2
Indirect	1,816	70.5	\$235.3
Induced	2,509	84.9	\$279.4
Total	11,160	\$474.7	\$1,135.0
Multiplier	1.63	1.49	1.83

¹ Excludes components such as some students expenditures, earnings of alumni, and technology attraction

² Employment = Full-time and part-time jobs supported by out-of-state revenue

³ Labor Income = Total employee compensations including benefits

⁴ Output = University expenditures supported by out-of-state revenues

Source: BBER Analysis using IMPLAN Version3

UNM Bureau of Business and Economic Research, 2010

Some aspects of these impacts may be overestimated. In particular, it is assumed that 100 percent of the activity from construction expenditures was spent in-state. This is because a majority of UNM construction activities occur in-state. Additionally, even if the contractors are located out-of-state, most workers are living and working in New Mexico. Nevertheless, there is some flow of dollars out of the state when out-of-state contractors and workers are utilized, and this leakage is not captured in these results. It is also assumed that all of the construction work started in 2010 was completed in the same year. This may not be an accurate portrayal as construction projects may be undertaken across multiple fiscal years. Another assumption is that health insurance spending by UNM was 80 percent in-state and 20 percent out-of-state. This assumption was imposed by the IMPLAN model and represents an industry average of spending.

The following sections of the report provide more detail regarding the methodology used to estimate the impacts, the data and inputs that represent direct economic activity, and the resulting total economic impacts in terms of output, income, and employment. The report's conclusion discusses the results and addresses questions and concerns.

Methodology

This study builds on previous studies performed by BBER² and is based on a generally accepted method of measuring the impact of universities used in other states. This method, which can be described as an “export-base” method, recognizes that only those expenditures supported by out-of-state revenues can be considered to have a tangible impact on New Mexico’s economy because revenues generated from in-state sources would presumably flow to some other activity if UNM did not exist, and so still yield an economic impact. As a result, UNM’s contribution to the state of New Mexico’s economy is derived from its ability to attract revenues from outside of New Mexico.

Data

Several key departments at UNM contributed revenue, expenditure, employee, and student data for this analysis. UNM Human Resource Department supplied payroll and benefits data for UNM Main Campus, North Campus and Branch Campuses. UNM Hospitals Human Resource Information System provided payroll and benefits data for UNM Hospitals’ employees. UNM Enrollment Management Division supplied the data on student residency. The Purchasing Office provided expenditure data for UNM Campuses. The UNM Foundation gave information regarding gifts received in Fiscal year 2010 and whether or not the source was within New Mexico. UNM Medical Group Human Resource Department provided the direct employment number associated with UNM Medical Group. Additional data was obtained from respective audit reports of UNM, UNM Hospitals, and UNM Medical Group. Most revenue and expenditure data was obtained from the same audit reports.

This data was used to estimate the percent of revenues that originated out-of-state followed by the percent of expenditures that went to in-state vendors.

Method

The basic premise behind the method used in this study is described above. The following steps were taken to estimate the economic impact of UNM on the New Mexico economy. Revenues from out-of-state sources were estimated by UNM Campuses, UNM Hospitals and the UNM Medical Group for fiscal year 2010. The percent of expenditures spent in-state was then estimated using the following formula:

² Potter, Nicholas “The Economic Impact of the University of New Mexico on the State of New Mexico.” Bureau of Business and Economic Research, UNM, December 2007. Francis, Norton. “The Economic Impact of The University of New Mexico on the State of New Mexico”. Bureau of Business and Economic Research, UNM. January 2004.

Direct Impact = (% Out-of-state Revenues) X (% In-state Expenditures) X (Total Expenditures)

The percent of revenues from out-of-state were estimated based on funding source as determined by data from the Controller's Office and by data from the fiscal year 2010 University of New Mexico Audit Report. This data listed revenues by out-of-state and in-state sources.

The percent of non-personnel expenditures occurring in-state were determined based on estimates from UNM's Purchasing Office. Benefits, construction and capital projects expenditures were assumed to occur 100 percent in-state.

Employee spending was estimated based on salary information provided by UNM's Controller's Office. Total income was adjusted to take into account both the percent of revenues originating from out-of-state sources as well as taxes and payments paid by employees. The resulting values are estimates of disposable income, which represent the actual purchasing power of UNM employees. This spending was applied to IMPLAN's estimated household spending profiles according to income category.

Student expenditures on tuition and fees, room and board, and books and supplies were included in UNM revenues. Room and board expenditure of out-of-state students who live off-campus is not captured in this analysis. Also excluded were the miscellaneous expenses that students might have incurred.

Classification of UNM's non-personnel expenditures, construction and hospital expenditures, the in-state share of expenditures for suppliers of these goods and services, and the estimation of economic impacts on output, salaries and employment were determined using IMPLAN Version 3 and the IMPLAN data set (2007).³

IMPLAN uses a variety of data sources to estimate the total economic impacts of economic activity, where the total economic impact is comprised of the sum of direct, indirect and induced impacts. **Direct impacts** occur as a result of UNM spending on employee compensation and goods and services from out-of-state sources. This impact also includes spending for capital projects. **Indirect impacts** occur as a result of expenditures by UNM on goods and services necessary to perform its activities. These expenditures create demand for the goods and services of other companies, who must then purchase goods and services and hire employees to produce their product. The sum total of these iterative purchases and employee hiring are termed indirect impacts.

The second way in which additional economic activity occurs is through **induced impacts**, which are a result of the wage and salary spending of UNM employees

³ Minnesota IMPLAN Group, Inc. IMPLAN System (data and software), 1725 Tower Drive West, Suite 140, Stillwater, MN 55082. <http://www.implan.com>.

and vendors. The spending of these employees creates further demand for goods and services for which firms must again purchase supplies and hire employees to produce. The sum of these iterations is collectively known as induced impacts.

These two impacts combined with the initial (direct) activity provided by UNM expenditures, yield the total economic activity that results from the share of UNM expenditures supported by out-of-state revenues. Dividing this total by the original direct activity gives **multipliers**, which provide a measure of economic activity generated per dollar or per employee. The economic impacts presented below are discussed in these terms.

Inputs

Inputs are the most important factor in accurately determining the economic impact of UNM. The input data resulting from the following calculations determine the basis for which the direct impact of UNM is computed. All derivative indirect and induced impacts are dependent on the accuracy of the initial inputs.

Revenue

Revenue data sources were provided by the UNM Controller’s Office, UNM Hospitals Finance Department, and UNM Medical Group Human Resource Department and are presented in full in Table 1.2. State and local appropriations and patient revenue make up the bulk of UNM’s revenue, with tuition/fees, federal grants, and sales and services making up the majority of the remaining revenue. Following the export-base methodology described earlier, all state and local sources are considered to have zero economic impact on the state since it is assumed they would be spent elsewhere if they did not go to UNM. Federal revenues in Table 1.2 include only federal contracts and grants. Federal Medicare and Medicaid payments are included in patient revenues. Tuition and fees include overall payments as well as scholarships and grants, with the percent coming from non-New Mexico sources being determined by students who are non-residents. Gifts were provided by the UNM Foundation, with the percent from out-of-state determined by the location of the donating party.

Table 1.2: Summary of Revenue Sources

Revenue Sources	Total Revenue ¹		Non-New Mexico Source (%)	Direct Revenues \$ Million
	\$ Million	%		
Tuition/Fees	\$108.1	6%	7%	\$7.1
State and Local	\$428.2	24%	0%	\$0.0
Federal	\$245.9	14%	100%	\$245.9
Sales/Service	\$91.4	5%	9%	\$8.5
Other Revenues including gifts	\$74.7	4%	34%	\$25.4
Non-governmental grants and contracts	\$27.1	2%	32%	\$8.7
Patient services and clinical operations ²	\$791.7	45%	77%	\$612.1
Total	\$1,767.2	100%	51%	\$907.8

¹ Bond Financing not included

² It includes Medicaid and Medicare which are not included in "Federal"

Source: UNM Controller, UNM Foundation, UNM Hospitals, UNM Medical Group
UNM Bureau of Business and Economic Research, 2010

Expenditures

Table 1.3 shows expenditures for fiscal year 2010 including employee compensation and construction. Compensation is broken out by general employment type then by benefits for each of the three UNM entities included in the analysis. UNM spent over \$1.86 billion in fiscal year 2010, evenly split between employee compensation and expenditures on construction and non-personnel operations.

Table 1.3: Summary of Expenditures (in \$ million)

Compensation	UNM Campuses ¹	UNM Hospitals	UNM Medical Group	Total Expenditures
Compensation	\$609.6	\$352.7	\$11.7	\$974.1
Faculty	\$257.2	-	-	\$257.2
Staff	\$275.7	\$295.4	\$9.8	\$580.9
Student Employee	\$43.2	-	-	\$43.2
Benefits ²	\$33.5	\$57.4	\$1.9	\$92.8
Expenditures	\$461.6	\$329.2	\$95.5	\$886.3
Construction	\$73.4	\$59.0	\$0.7	\$133.1
Non-Personnel Operations	\$388.3	\$270.2	\$94.8	\$753.3
Total Operating Expenditure	\$997.9	\$622.9	\$106.5	\$1,727.3
Total	\$1,071.2	\$681.9	\$107.2	\$1,860.4

¹ Includes main campus, branch campuses, and Health Sciences Center

² Benefits include employer contributed health benefits and other benefits

Source: UNM Controller, UNM Purchasing, UNM Hospitals, and UNM Medical Group

UNM Bureau of Business and Economic Research, 2010

Only that portion of expenditures supported by out-of-state revenues is considered to create an economic impact within the state. By this measure the UNM Hospitals are the largest driver of economic activity, largely due to the influx of out-of-state federal revenues for patient services. Though UNM Campuses account for the majority of total expenditures, the percent of its out-of-state revenues is only 27.5 percent. Overall, nearly 49 percent of UNM's expenditures are supported by out-of-state revenue. These expenditures are shown in Table 1.4.

Table 1.4: Expenditures Supported by Out-of-State Revenue (in \$ million)

UNM Entity	Total Expenditure	Out-of-State Percentage	Supported Expenditure
UNM Campuses	\$1,071.2	27.5%	\$294.1
UNM Hospital	\$681.9	77%	\$527.0
UNM Medical Group	\$107.2	81%	\$86.7
Total	\$1,860.4	48.8%	\$907.8

Source: UNM Controller , UNM Purchasing, UNM Hospitals, and UNM Medical Group
UNM Bureau of Business and Economic Research, 2010

The final step in determining the economic activity resulting from UNM is to account for the amount of UNM expenditures that are “leaked” out of state. That is, the amount of expenditures that go to purchasing goods and services from other states or internationally. New Mexico has a relatively small manufacturing and industrial base compared to other states and so we expect significant portions of expenditure are spent for import. Overall, 32% of UNM Campuses expenditures on goods and services are accounted for by import from outside of New Mexico. Since local expenditure percentage for UNM Hospitals and UNM Medical Group was not readily available, we use IMPLAN to estimate it. UNM construction expenditures are treated as 100 percent local for the purposes of this study though the purchases of supplies for construction industry will occur both in-state and out-of-state. Table 1.5 presents the externally funded and locally spent amount by UNM Campuses, UNM Hospitals and UNM Medical Group.

Table 1.5: Supported Expenditures Spent Locally (in \$ million)

UNM Entity	Supported Expenditure	Local Expenditure Percentage	Local Expenditure
UNM Campuses ¹	\$294.1	69.7%	\$204.9
UNM Hospitals	\$527.0	65.3%	\$344.0
UNM Medical Group	\$86.7	82.3%	\$71.3
Total	\$907.8	68.3%	\$620.2

¹ Includes main campus, branch campuses, and Health Sciences Center

Source: UNM Controller , UNM Purchasing, UNM Hospitals, and UNM Medical Group
UNM Bureau of Business and Economic Research, 2010

The total direct impact of UNM on the economy of New Mexico is \$620.2 million. This serves as the primary input for determining the overall economic impacts of UNM.

Employment

Though not explicitly used to estimate impacts, it is useful to consider how the process described above applies to employment. As of October 2009, UNM directly provided full-time and part-time employment to 25,093 people including 6,257 at UNM Hospitals, 164 in UNM Medical Group and 638 non-resident employees. This number also includes 1,256 construction employees. The number of employees supported by out-of-state revenues is 6,835, about 27 percent of total employment.

Table 1.6: UNM Direct Employment

Type of Employment	UNM Campuses	UNM Hospitals	UNM Medical Group	Total
Faculty	4,093	-	-	4,093
Staff	8,114	5,746	164	14,024
Students	5,720	-	-	5,720
Construction	740	511	6	1,256
Total Employment	18,667	6,257	170	25,093
% Supported	19%	50%	64%	27%
Employment Supported by Out-of-State Funding	3,570	3,156	109	6,835

Source: UNM Controller, UNM Hospitals, UNM Medical Group
UNM Bureau of Business and Economic Research, 2010

Impacts

Following the methodology outlined previously, the total economic impacts of UNM are determined using the total revenues that originate from outside New Mexico and tracing the portion of expenditures supported by those revenues that are spent locally, as well as the spending from non-resident students and the employees of UNM. The overall direct impact of UNM was \$620.2 million dollars. The derivative indirect and direct impacts of this economic activity by UNM are shown in Table 1.8 and are broken down by UNM entity.

Output

The \$620.2 million in direct output supported by out-of-state funds led to an additional \$514.8 million in indirect and induced economic activity. In other words, by attracting the funds necessary to support \$620.2 million in expenditures, UNM generated a total of \$1,135 million in economic activity for the state of New Mexico in fiscal year 2010. The accompanying multiplier of 1.83 indicates that a total of \$1.83 was generated in the New Mexico economy for every dollar UNM spent in New Mexico that was supported by out-of-state revenues. The majority of this activity was a result of UNM Hospitals by virtue of the relatively large portion of their revenues that originate from outside the state. UNM Campuses also generate significant activity, while the UNM Medical Group is responsible for a much smaller amount.

Employment

Out-of-state revenue directly supported 6,835 full-time and part-time employees and generated an additional 4,325 jobs due to indirect and induced economic activity, for a total of 11,160 jobs. UNM Campuses provided the largest number of jobs, followed by UNM Hospitals and UNM Medical Group. The overall employment multiplier is 1.63 which indicates a total of 1.63 jobs were generated in the New Mexico economy for every job UNM provided in New Mexico that was supported by out-of-state revenues.

Income

The \$319.4 million in income supported by out-of-state revenues resulted in more than \$155.3 million in additional income through indirect and induced activity for a total of \$474.7 million in labor income. UNM Hospitals were the largest generator of economic activity, followed by UNM Campuses. The income multiplier of 1.49 indicates a total of \$1.49 was generated in the New Mexico

economy for every dollar UNM spent in employee compensation in New Mexico that was supported by out-of-state revenues.

Table 1.8: Economic Impact of UNM on the State of New Mexico by UNM Entity (Output and income are presented in \$ million)

Output¹	Direct	Indirect/Induced	Total	Multiplier
UNM Campuses	\$204.9	\$177.8	\$382.7	1.87
UNM Hospital	\$344.0	\$270.1	\$614.1	1.79
UNM Medical Group	\$71.3	\$66.8	\$138.2	1.94
Total	\$620.2	\$514.8	\$1,135.0	1.83

Income²	Direct	Indirect/Induced	Total	Multiplier
UNM Campuses	\$122.5	\$51.8	\$174.4	1.42
UNM Hospital	\$189.0	\$81.6	\$270.6	1.43
UNM Medical Group	\$7.8	\$21.9	\$29.7	3.81
Total	\$319.4	\$155.3	\$474.7	1.49

Employment³	Direct	Indirect/Induced	Total	Multiplier
UNM Campuses	3,570	1,451	5,021	1.41
UNM Hospital	3,156	2,287	5,443	1.72
UNM Medical Group	109	586	696	6.37
Total	6,835	4,325	11,160	1.63

¹ Output = University expenditures supported by out-of-state revenue (it excludes out-of-state spending)

² Income = Salaries and benefits supported by out-of-state revenue

³ Employment = Full-time and part-time employment supported by out-of-state revenue

Source: BBER Analysis using IMPLAN V3

UNM Bureau of Business and Economic Research, 2010

Conclusion and Limitations

The overall economic impacts of UNM are quite large, and yet there are several ways in which the impacts discussed here may under or overstate the case. In the interest of full disclosure and an attempt to arrive at the most accurate estimate of economic impacts possible, it is always useful to discuss the limitations and drawbacks of a given method.

To begin with, our assumptions about construction being entirely in state are consistent with typical impact analyses, but likely overstate the impacts of UNM due to leakages that occur when out-of-state contractors are hired for major projects. In such cases, though the majority of jobs may be held by New Mexico residents, the profits accruing to the out-of-state contractor as well as part of the earnings of employees brought from out-of-state leak out of the New Mexico economy.⁴ Furthermore, BBER assumed that the construction project started in 2010 will be completed within 2010, which may overstate the impacts. Given the small number of employees and salary dollar on construction, we do not believe that this assumption would result in significant changes in the impact numbers.

On the other hand, UNM clearly plays a major role in the New Mexico economy and is intimately connected with many leading technological and industrial developments. Perhaps most clearly though, it is responsible for the education and equipping of a large percent of New Mexico's workforce with the skills necessary for higher paying and more productive jobs. This plays a role not just in providing residents an opportunity to increase their income, but also in creating a skilled workforce capable of attracting companies that may consider New Mexico as suitable a business location. None of these less tangible impacts is included in this impact study.

In the end, economic impact studies can only hope to minimize the effects of factors that have been under or overstated and to achieve the best estimate possible for the task at hand. It is BBER's hope that we have succeeded in doing this here.

⁴ Some portion, perhaps large, of earnings for out-of-state workers will be spent locally. However, a significant amount is likely to leave the state as workers send money to their families. Only the part of income necessary for living expenses would then be left in New Mexico.