



Development of Modeling Tool to be Used in Evaluating Alternatives to the Current Gross Receipts Tax

January 29, 2015

Lee A. Reynis, PhD

UNIVERSITY OF NEW MEXICO
BUREAU OF BUSINESS AND ECONOMIC RESEARCH
303 Girard Blvd. NE
MSC06 3510 / Oñate Hall
Albuquerque, New Mexico 87131

Table of Contents

Acknowledgements.....	3
Validation of the IMPLAN Model and Databases.....	4
Structure of the Tax Models.....	4
Gross Receipts Tax Model.....	5
Preliminary Results.....	7
Transactions Tax Model.....	8
Preliminary Results.....	9
Limitations of the Analysis.....	10
Model Revisions Made in January.....	12
Appendix A. Validation of the IMPLAN Model and Databases.....	13

Acknowledgements

This study grew out of a request from James O'Neill last summer for us to consider using the IMPLAN model and proprietary databases, which BBER is licensed to use, to develop a tax model to be used in estimating alternatives to the gross receipts tax. We explored the possibility, came up with the basic conceptualization for the model, and with Jim's encouragement, developed a proposal for funding from the New Mexico Legislative Council Service. We appreciate the funding that has enabled us to develop this new and hopefully useful application of the IMPLAN model. We also appreciate the willingness to extend the initial deadline, giving us until December to develop the model and report to the Revenue Stabilization and Tax Policy Committee.

On BBER's staff, I wish to thank Dr. Doleswar Bhandari, our IMPLAN guru, who provided the tabulations of IMPLAN data for 2012 that are the core of the model we built as well as ongoing valuable consultation. Our student Tim Becker provided critical research assistance.

In putting together the model, we benefitted greatly from numerous conversations with Jim O'Neill. Some of these conversations were with respect to the details of the gross receipts tax. Others explored proposals, including legislation first introduced by Senator Sharer and Representative Taylor in 2013, to reform New Mexico taxes by creating an entirely new transaction tax that would replace the gross receipts and compensating taxes, certain excise taxes, and both the personal and the corporate income tax.

We also benefitted from discussions with Richard Anklam, President and Executive Director of the NM Tax Research Institute, but we particularly appreciated his willingness to lend us his copy of the *New Mexico Selected Taxation and Revenue Laws and Regulations*. This document became our source document as we sought to estimate various exemptions and deductions.

Finally, I wish thank Janet Peacock for jogging my memory about the municipal state-shared gross receipts tax and Professor Emeritus William Beyers of the University of Washington for his encouragement to proceed with our modeling effort.

Lee A. Reynis

Development of Modeling Tool to be Used in Evaluating Alternatives to the Current Gross Receipts Tax

The Bureau of Business and Economic Research was asked to analyze the structure of the NM economy to develop estimates of commercial transactions in the state as well as other information critical to a full assessment of tax options by the Revenue Stabilization and Tax Policy Committee. BBER had determined that the IMPLAN model and proprietary databases could provide an appropriate tool for a model of the structure of the New Mexico economy that would yield information critical to evaluating alternatives to the current gross receipts tax. The first phase of the research involved validating the IMPLAN model and IMPLAN databases on the structure of NM economy in 2012. We then combined the IMPLAN data with other data in an effort to build a model for estimating the gross receipts tax base statewide. Finally, we put the model to the test by examining the revenue impacts of the Sharer-Taylor 2013 legislation to replace the Gross Receipts, Income and other taxes with a broad-based tax on transactions.

Validation of the IMPLAN Model and Databases

IMPLAN produces annual estimates of activity by 3-digit NAICS codes for a variety of variables that are estimated by federal and state agencies, including the Census Bureau, the Bureau of Labor Statistics, and the Bureau of Economic Analysis (BEA). These variables are all critical to presenting a picture of the structure of the NM economy, including the transaction flows within, between and among different industries.

The details of the analysis are presented in Appendix A. The IMPLAN estimates were reasonable close for most industries. Differences between and among different data series for a particular variable, like employment, can be large for particular industries because of differences in who is included, who is not included. In some cases the annual data are an average of months or quarters; in other cases the data may be collected for a representative month, like March.

Structure of the Tax Model

In constructing a tax model, BBER availed itself of the aggregated 3-digit NAICS series available from IMPLAN on Output, Value Added, and particularly component on Labor Income, Property Income, Exports to the rest of the US and abroad, and both the aggregated and detailed data on inter-industry purchases by industry.

Gross Receipts Tax Model

The basic structure of the gross receipts tax model is suggested by **Figure 1.1**. In developing this model we had the advantage of actual data for 2012 against which to check the numbers. The major difficulties seemed to arise because the NAICS codes used by NM businesses in filing gross receipts taxes are self-selected and never audited. John Tiessling, former Chief Economist at TRD gave us examples of where major businesses had reported their data under completely inappropriate NAICS codes, and BBER has itself had experience trying to sort out the filings under “other services”. Before any major discussion of tax reform, the State should avail itself of the opportunity to match by NAICS code with the employer file for Quarterly Census of Employment and Wage prepared by the NM Department of Workforce Solutions. This file is regularly audited with corrections made typically during the first quarter of the calendar year. Future tax reform efforts would benefit from having more accurate industrial classification assignments for NM businesses and there would also be ongoing benefits in terms of tax enforcement.

Figure 1.1. Schematic of Gross Receipts Tax Model

Output	– Exemptions	= Gross Receipts
Sales by 3-digit Naics Industry net of Indirect taxes and custom duties	Sales of goods to govts, Sales by nonprofits, Sale taxed elsewhere motor vehicles), Other specific (agriculture), govt agency receipts (7-9-13)	Estimates of total reported by 3-digit NAICs industry (Per NM TRD Report 80)
Gross Receipts	– Deductions	= Taxable Gross Receipts
	Inter-state commerce, Foreign exports, Sales to non-profits, Mfg consumptables, Inputs for construction, Sales for resale, Many specific (prosthetic devices, jet fuel)	Estimates of total reported

To review the methodology, BBER used IMPLAN data for 2012 aggregated to 3 digit NAICS industry on total output, or sales. This output for each industry is equal to total

value added by labor and capital plus inter-industry purchases of NM goods and services and imports from the rest of the US and abroad and excluding indirect business taxes and taxes on imports.

NM sales of business output include sales to households, to federal, state and local governments, including Indian tribes, and to other businesses. The *Economic Census* (2007 was all that was available) provided estimates of total sales for wholesalers and also for retailers by 3 digit NAICS that were used to estimate total output for these industries. The Economic Census also provided a breakdown for each industry of sales to governments and also sales by non-profits 501(c) (3) organizations.

Preliminary results. Exemptions were estimated by following State statute. We used IMPLAN data on the agricultural sector to capture the exemptions related to that sector. IMPLAN data by commodity was used to capture exemptions where the good or service was otherwise subject to an excise tax or subject to a specific exemptions. In some cases we verified the number by using the actual excise tax revenues. We used the IMPLAN data on government receipts. Where the IMPLAN data for a particular exemption were not available, we used other sources, for example FDIC reports on interest paid on loans to banks. We used data from the 2007 Economic Census to calculate the percent of sales that were tax exempt and applied these percentages to the IMPLAN numbers. Our estimates of exemptions following this methodology picked up about \$66.0 billion. Total Gross Receipts as reported by the NM Taxation and Revenue Department were within about \$42 billion, or 0.04% of the estimated Total Output minus Exemptions.

Modeled deductions were \$82.2 billion including actual Food and Medical Deductions. In estimating these deductions, we took the food and medical deduction as given, but were able to avail ourselves of IMPLAN data on sales to federal, state and local governments as well as on inter-state commerce and foreign exports. We also mined the detailed data from IMPLAN on commodity purchases by particular detailed industries in an effort to gather more precise estimates of sales for resale and of purchases of inputs (goods) by the construction and manufacturing industries. Since the data were for 2012, we made no effort to capture consumables such as electricity; nor did we include services, such as those provided by architects and engineering firms.

However, the multiple deductions applicable for different industries sometimes exceeded estimated total gross receipts (Total Output less Exemptions). Constraining each to be within available total gross receipts resulted in Modified Total Deductions of \$55.0 billion versus Total Deductions reported by TRD of \$55.8 billion, a difference of \$800 million. Given the difficulties sometimes in precisely associating the particular industry impacted, BBER believes that the total modeled deductions could be higher or perhaps lower than the constrained total of \$55.0 billion.

The model estimated Taxable Gross Receipts off the original IMPLAN output estimate net of indirect business taxes to be \$50.1 billion versus the \$49.3 billion reported by TRD, a difference of \$800 million.

Transactions Tax Model

The basic structure of the model is suggested by **Figure 1.2**. Conceptionally the model is relatively simple: Tax all transactions including wages and salaries, corporate profits, proprietors' income, dividends, interest and rents, and all intermediate transactions. Basically tax sales at every stage of production and tax all purchases. The proposed legislation does away with a number of other taxes, including all income taxes, the motor vehicle excise tax and the leased vehicle gross receipts tax. The premium tax is retained as is the liquor excise tax, the cigarette tax, tobacco products tax, among others, but no deductions are allowed. A number of tax credits are eliminated.

Figure 1.2. Schematic of Sharer/Taylor Transactions Tax Model

Output 3-digit NAICS Sales	+	Labor Income W&S & self-employ earnings	+	Property Income Corp profits, Proprietors, Dividends, interest, rents	+	
All Intermed Transactions						
by businesses of goods & services used in production.			–	Exemptions Sales of goods to govts, Taxed elsewhere (oil & gas)		
= Receipts						
Receipts	–	Deductions Inter-state commerce, Foreign exports, Sales of goods to govts, Other very limited	=	Taxable Receipts		

There are a limited number of exemptions, specifically on government receipts, and on oil and gas activity that is otherwise taxed. Deductions applied are similarly sparse. The list includes exports (interstate commerce and foreign exports) and sales of goods to governments, with others that are very specific and limited, some, like taxation of Medicare payments, by the federal government. The state may have more discretion than modeled regarding deductions.

Using Implan 3-digit NAICS data on output, labor income, proprietor income, and other property income, and interindustry purchases, including imports, BBER calculated taxable transactions for each industry to consist of total sales (output), which includes

value added (labor income plus property income) plus inter-industry purchases. The latter includes goods and service produced in NM and those imported into the state from the rest of the US and abroad. We then added wages and salaries plus property income and the total for inter-industry purchases. It should be noted that the total for inter-industry purchases in all likelihood understates the sum total value of all transactions. The IMPLAN numbers come from an Input-Output model that captures the total value of steel, of grains, of electronic components, etc. embedded in the goods and services purchased and used at the different stages of production. Ideally to get at transactions, one would want all the survey data on purchases that were the basis for creating the Input Output matrix for the US economy, but this information is not readily available.

From these estimates of total transactions by industry are then subtracted the few applicable exemptions, including government receipts and oil and gas activity subject to other taxes, and all applicable deductions. The list of deductions easily includes all sales in interstate commerce, all exports, and sales of goods to federal, state and local governments. With the exception of wholesale and retail trade sales which were calculated with input from the 2007 Economic Census, the series for each of these by 3-digit NAICS is readily available in IMPLAN.

In addition to the series readily available from IMPLAN, BBER carefully scrutinized the bill to see which deductions were retained and which were eliminated and used estimates of the impacts drawn from a variety of sources, most of which had already been estimated for the Gross Receipts Model.

Preliminary results. The total transactions by industry (net of indirect business taxes but inclusive of custom fees) were estimated to be \$333.4 billion from which was subtracted an estimate of total exemptions (\$30.4 billion) and of deductions (\$54.3 billion), or together a total of \$84.7 billion. Taxable receipts were thus estimated at \$248.75 billion. Multiplying by 2.125%, the tax rate in the original legislation, yield revenues of \$5.29 billion. This revenue would easily replace the \$2.0 billion generated by the general sales taxes, gross receipts and compensating, but it also would need to cover the revenues generated by the taxes that would be eliminated by the legislation: income taxes, which yielded \$1.5 billion in FY 13 when NM residents and businesses paid their 2012 income taxes; the Motor Vehicle Excise tax, which brought in \$114.7 million in FY 12, and the leased vehicle surcharge, which generated \$5.4 million.

Assuming that the remaining revenue losses to the General Fund are relatively minor, the balance is a positive \$1.66 billion. However, the State gross receipts tax is currently shared with municipalities through a 1.225% distribution. Keeping them whole in 2012 would have required an estimated \$418 million, leaving a balance of 1.24 billion. When added to the \$2.26 billion in additional recurring revenues from existing sources (FY12 basis), the estimated revenues from the transactions tax next of the municipal distribution results in total recurring general fund revenues of \$7.13 billion, which is \$1.37 billion above the average of actual General Fund Revenues in Fiscal Years 2012 and 2013.

Limitations of the analysis

With the exception of providing for the State Shared Municipal Gross Receipts tax distributions, we have confined our analysis to the State's General Fund. Although the bill itself provides for local option taxes, we have made no attempt to estimate the impacts on local governments nor to assess the adequacy of the revenue streams. We are sensitive to current local government and particularly municipality dependence on the gross receipts tax to fund general government. We also recognize that some local governments may have outstanding bond issues against which gross receipts tax revenues from local option taxes were pledged.

Nor have we attempted to estimate revenues from the governmental gross receipts tax. According to TRD's website, "The state distributes the governmental gross receipts tax dollars to the Public Project Revolving Fund at the New Mexico Finance Authority, the Energy, Minerals and Natural Resources Department, and the Department of Cultural Affairs."

The preliminary nature of these results needs to be underscored. These estimates are based on IMPLAN proprietary databases. While the data offer reasonable estimates of economic data one might use to describe the structure of the NM economy, there are issues with some of the detailed data. For example, the model includes an estimate for output in NAICS 521, Monetary Authorities, of \$2.97 billion, with 10,016 employed. This is basically a NAICS code reserved for the Federal Reserve, but NM does not have a Federal Reserve Bank presence as do cities such as Denver, Omaha, Oklahoma City and, of course Kansas City and Dallas. That said, the overall data on employment for this NAICS code and 522 Credit Intermediation & Related total very close to the employment reported for 522 by the 2007 Economic Census. Also, there is no aggregates reported

for 315 the Apparel Industry, although the detailed commodity data, for example on exports, include the output of this industry.

Use of data from an Input-Output model captures taxes on all transactions. IMPLAN provides very detailed data on commodities purchased in NM and used in the production of other commodities by NM industries, but there is no way of estimating how many times individual commodity inputs may have been sold and used to produce inputs at successively higher stages of production. In short, there is no way of estimating all the intermediate transactions, nor of estimating how taxes on these various transactions may affect sourcing decisions nor the limits of an individual company (since vertical integration could reduce the taxes paid on inputs).

Because the *2012 Economic Census* was unavailable at this writing, we did not have data on total sales against which to verify the figures on total output, and we had to use the numbers from the *2007 Economic Census* to gross up the estimates for retail and wholesale trade. The wholesale trade figure in particular seems low given the reported taxable gross receipts for this sector. We tried similarly to gross up the estimates for interbusiness sales, including those which would be revealing of sales for resale, and of exports and imports, but the results were generally not satisfactory. This means that some of the estimated exemptions and deductions may be too low.

The estimates of reported activity not taxed due to exemptions and deductions have been approximated by IMPLAN data, including data on detailed commodities purchased and sold, where available. In other cases, we have used a variety of sources including reports available on line. We have tried to be as thorough as possible, but undoubtedly have missed or failed to find a way of closely approximating some deductions, credits and possibly some of the remaining exemptions.

The bill repeals a number of rebates and credits. We had hoped to estimate these by using the TRD's *2013 New Mexico Tax Expenditure Report*, which reports tax expenditures for FY 12, but were unable to complete the task in a satisfactory manner.

The approach used here in no way takes into account the complexity of household and business behavioural responses to changes in relative prices and other incentives. IMPLAN is a static model used primarily to do comparative static analyses. It is not a tool for estimating and capturing the dynamic impacts of major tax reform.

No analysis has been done regarding the **federal tax deductibility** of receipts from this transaction tax, which would replace income and to a limited extent sales taxes that are deductible. Having the federal government pick up part of the state's tax bill is an important way to bring federal dollars into the state, so it is in the State's interest as well as in the individual taxpayer's interest to maximize the amount that will be accepted as federal tax deductions.

Texas is recognized as a "sales tax state" and benefits from different rules. This option needs to be explored. Indeed, the whole issue of federal tax deductibility needs to be studied in detail and the results taken into consideration in designing the tax reform package.

No analysis has been included on the **re-distribution of income** likely to occur should this new tax be implemented. Sales taxes have a disproportionately large burden on lower income people who spend a higher proportion of their income.¹

The original legislation (2013) decoupled NM taxes on income from federal income taxes and called for a flat tax on wages and salaries with no deductions, rebates or credits, and leaves it up to the governor to propose an allocation of any balances in the "taxpayers dividend fund". We understand that many of these issues will be addressed in subsequent versions of the legislation.

Revisions Made to the Models in January

Models were cleaned up and made more user-friendly and documentation was prepared. In the course of doing this work, BBER discovered some errors in the formulas that were used to calculate certain important variables. In the case of both the Gross Receipts Tax Model and the Transactions Tax Model, the most serious error appeared in the formula for calculating constrained estimates of deductions.

Gross Receipts Tax Model. The error in the case of the gross receipts tax model had resulted in an over-estimate of deductions of \$55.0 billion. After correction, the estimate fell to \$53.8 billion, a difference of \$1.2 billion, and this resulted in a revised estimate of Taxable Gross Receipts for calendar 2012 of \$51.2 billion. This compares with calculated total taxable gross receipts from TRD's Report 80 of \$49.3 billion, reflecting a difference of \$1.9 billion, which is larger than reported above and published in our revised Presentation. It should be noted that BBER is generally applying a strict

¹ For a preliminary analysis, see Gerry Bradley, "The 2 Percent Disaster," NM Voices for Children website.

standard here, calculating the error for each three digit SIC code and constraining deductions so that for that the total of deductions plus exemptions will not exceed the value of the output potentially subject to tax. We found errors in the NAICS codes assigned by IMPLAN. There have also long been issues about businesses using an inappropriate industry code in reporting their gross receipts information to the NM Department of Taxation and Revenue (TRD). TRD does not audit these industry assignments; nor have they yet availed themselves of opportunities to match with other data, for example, employment data collected by the NM Department of Workforce Solutions, where there is an ongoing attempt to assign correct industry classifications.

Transactions Model. With respect to the Transactions Model, the preliminary model, run with a 2.125% tax had indicated a balance of \$1.24 billion after netting out gross receipts and compensating taxes, income taxes, certain excise taxes, and the \$418 million in state-shared gross receipts taxes for municipalities. The modified estimated deduction total that produced this result was \$54.3 billion. After correction, and with no change in exemptions, the modified estimated deductions were \$61.2 billion and the balance remaining had shrunk by almost \$150 million to \$1.09 billion.

The revised and corrected transaction model and accompanying documentation is a potentially useful tool in tax reform discussions. As modified, it is possible to enter a tax rate and immediately have an estimate of the potential balance after holding harmless both the State's General Fund and the Municipal State-Shared Distribution.

The model is also useful because it explicitly estimates the amounts for different types of exemptions and deductions. The details of the model need to be scrutinized closely, however. BBER has attempted to capture the relevant exemptions and deductions, but the details should be reviewed by those knowledgeable in the law as well as by NM tax economists, who have an extensive toolkit for doing fiscal impact analyses. Also and from a policy perspective, the transactions included among the deductions and exemptions should be scrutinized. Some of those imposed externally may or may have a binding legal basis. Some, like the deductions for exports may make sense from an economic standpoint.

Appendix A

Validation of the IMPLAN Model and Databases

IMPLAN produces annual estimates of activity by 3-digit NAICS codes for a variety of variables that are estimated by federal and state agencies, including the Census Bureau, the Bureau of Labor Statistics, and the Bureau of Economic Analysis (BEA). These variables are all key to presenting a picture of the structure of the NM economy, including the transaction flows within, between and among different industries.

The details of the analysis are presented below. The IMPLAN estimates were reasonable close for most industries. Differences between and among different data series for a particular variable, like employment, can be large for particular industries because of differences in who is included, who is not included. In some cases the annual data are an average of months or quarters; in other cases the data may be collected for a representative month, like March.

Employment. IMPLAN data on employment by industry includes both wage and salary employment and self-employment. The definition thus corresponds to that used by the Bureau of Economic Analysis. In both cases we use 2012 data for New Mexico as a whole. The comparison is provided in **Table A.1**. Note that overall, the IMPLAN estimates are within 1.1% of the BEA estimates. The IMPLAN estimates undercount private sector employment by 8,400 (1.0%), with more than half of the difference in agriculture. Government is also undercounted by 3,700 (1.7%) if use BEA as the comparison.²

² BBER's estimates for 2012 government employment based on the Quarterly Census of Employment and Wages are similar to BEA's except in the case of State government where are estimates are about 10,000 below BEA and below the Current Employment Estimates series produced monthly by the Bureau of Labor Statistics. However, the QCEW does not count student employees including Interns and others who work at UNM Hospital, nor those who work at NM State, and it does not include elected officials.

Table A.1. NM Employment in 2012: IMPLAN and BEA Estimates Compared

2 Digit NAICS Industries and Super Sectors	IMPLAN Estimates	BEA Estimates	Difference	%
Private Sector	846,937	855,362	(8,425)	-1.0%
11 Agriculture, Forestry, Fishing & Hunting	27,833	32,617	(4,784)	-14.7%
21 Mining	33,669	34,188	(520)	-1.5%
23 Construction	58,557	58,116	441	0.8%
31-33 Manufacturing	34,739	35,670	(931)	-2.6%
42 Wholesale Trade	25,399	26,100	(701)	-2.7%
44-45 Retail Trade	111,192	111,781	(589)	-0.5%
48-49, 22 Transportation, Warehousing & Utilities	33,318	29,878	3,440	11.5%
51 Informaion	13,028	16,477	(3,449)	-20.9%
52-53 Financial Services	75,519	73,460	2,059	2.8%
54-56 Business & Professional Services	137,429	134,982	2,447	1.8%
61-62 Educational and Health Services	140,156	139,389	767	0.5%
71-72 Leisure and Hospitality	105,951	106,795	(844)	-0.8%
81 Other Services	50,148	55,909	(5,761)	-10.3%
Government	208,184	211,879	(3,695)	-1.7%
Total Employment	1,055,121	1,067,241	(12,120)	-1.1%

Labor Income. Again the comparison, which can be found in **Table A.2**, is with BEA data for the same workers covered by their employment statistics. Note that while overall the differences are very slight (0.1%), private sector labor income in IMPLAN is more than \$1.4 billion, or 4% above that reported in the most recent estimates by BEA, while government earnings are down by almost \$1.4 billion, or 10%. The BEA income numbers are subject to several revisions that can be very large. The wage and salary estimates come primarily from the BLS covered employment data and this data lags by as much as a year. As with the employment data, it is instructive to see where the largest differences between the two series lie. In this case, IMPLAN over-estimated agriculture by \$500 million, the opposte direction of the error in employment. IMPLAN also over-estimated business and professional services – by \$365 billion, or 5%. In this case, the employment numbers were also over-estimated, by 2,447, or 1.8%. Government earnings in IMPLAN were underestimated by \$1.4 billion, or 10%, while employment in this series was also low, but by 3,700, or 1.7%. The estimates for the information sector undershot, respectively by 21% for employment and 17% for earnings. Due the film industry, this relatively small sector can display considerable volatility.

**Table 1.2. NM Labor Income in 2012: Implan and BEA Estimates Compared
(in \$Millions)**

2 Digit NAICS Industries and Super Sectors	IMPLAN Estimates	BEA Estimates	Difference	%
Private Sector	\$37,514	\$36,069	\$1,445	4.0%
11 Agriculture, Forestry, Fishing & Hunting	\$1,842	\$1,337	\$506	37.8%
21 Mining	\$2,436	\$2,698	(\$261)	-9.7%
23 Construction	\$2,994	\$2,859	\$135	4.7%
31-33 Manufacturing	\$2,309	\$2,206	\$103	4.7%
42 Wholesale Trade	\$1,395	\$1,389	\$6	0.4%
44-45 Retail Trade	\$3,472	\$3,325	\$147	4.4%
48-49, 22 Transportation, Warehousing & Utilities	\$2,013	\$1,913	\$100	5.3%
51 Informaion	\$710	\$856	(\$146)	-17.0%
52-53 Financial Services	\$2,386	\$2,299	\$86	3.8%
54-56 Business & Professional Services	\$7,668	\$7,303	\$365	5.0%
61-62 Educational and Health Services	\$6,263	\$6,097	\$167	2.7%
71-72 Leisure and Hospitality	\$2,172	\$2,055	\$117	5.7%
81 Other Services	\$1,852	\$1,732	\$121	7.0%
Government	\$12,369	\$13,754	(\$1,386)	-10.1%
Total Income	\$49,883	\$49,824	\$59	0.1%

Gross Domestic Product/Total Value Added. New Mexico gross state product should correspond to the total value-added by each industrial sector. BEA provides estimates of gross state product by year in current and in real dollars adjusted for inflation. The IMPLAN estimates are all expressed in current dollars in 2012, unadjusted for inflation. The comparison is provided in **Table A.3**.

In this case, the IMPLAN estimates for the private sector are off by less than \$1 billion, or 1% but the estimates for government are low by 17%, resulting in an overall difference of minus \$2.7 billion, which is 3% below BEA. As is true of income, BEA's estimates of Gross State Product are subject to large revisions as more and better data is received and as methodological changes are made. In 2013 there was a major change in GDP that for the first time recognized R&D expenditures as Investment. NM with its large national laboratories was one of the states most impacted by the change.

**Table 1.3. NM Value Added in 2012: Implan and BEA Estimates Compared
(in \$Millions)**

2 Digit NAICS Industries and Super Sectors	IMPLAN Estimates	BEA Estimates	Difference	%
Private Sector	\$69,024	\$68,053	\$971	1%
11 Agriculture, Forestry, Fishing & Hunting	\$1,617	\$1,822	(\$205)	-11%
21 Mining	\$6,881	\$8,088	(\$1,207)	-15%
23 Construction	\$3,628	\$3,517	\$111	3%
31-33 Manufacturing	\$6,971	\$5,579	\$1,392	25%
42 Wholesale Trade	\$2,507	\$2,933	(\$426)	-15%
44-45 Retail Trade	\$5,241	\$5,220	\$21	0%
48-49, 22 Transportation, Warehousing & Utilities	\$3,692	\$3,647	\$45	1%
51 Informaion	\$2,490	\$2,399	\$91	4%
52-53 Financial Services	\$13,986	\$14,227	(\$241)	-2%
54-56 Business & Professional Services	\$9,227	\$9,033	\$194	2%
61-62 Educational and Health Services	\$7,245	\$6,702	\$543	8%
71-72 Leisure and Hospitality	\$3,260	\$2,925	\$335	11%
81 Other Services	\$2,279	\$1,961	\$318	16%
Government	\$17,489	\$21,135	(\$3,646)	-17%
Total Value Added	\$86,513	\$89,188	(\$2,675)	-3%

Output. BBER had hoped to validate the estimates of total output/sales using the 2012 *Economic Census*. The New Mexico numbers ordinarily would have been released before the end of 2014. Unfortunately, the Census Bureau created a new metropolitan area which includes both Las Cruces and El Paso. While this geography speaks to the reality of what is happening along the border, the creation of the combined El Paso –Las Cruces MSAs necessitated a postponement of the New Mexico data release until the release of the Texas data, which will not be until April, 2015. This created a problem in that the numbers on total output for Wholesale and Retail trade capture only the margin. To estimate output and interindustry purchases it is necessary to gross up the figures using data from the Economic Census. The latest Economic Census is from 2007. Fortunately, at least from a data standpoint, the NM economy has seen negligible growth since 2007. The estimates of total retail and wholesale trade activity were made using the 2007 figures from the Economic Census. These estimates at an aggregate level are in the ball park when compared with the gross receipts numbers from the NM Taxation and Revenue Department's Report 80, however, the 2007 numbers for wholesale trade appear to be some \$2 billion below what might be expected based on total gross receipts for this sector.

Foreign Exports and Out-of-State Sales to Locations within the US. IMPLAN produces its own estimates of domestic and foreign exports by 3-digit NAICS industry. Domestic

exports were estimated to total \$42.4 billion, while foreign exports in 2012 were estimated to be \$8.2 billion, including \$5.8 billion in goods and \$2.4 billion in services.

The information on foreign exports produced by the Commerce Department and reformatted by WISER upon which BBER has relied for years was recently called into question by data made available to the Brookings Institution for their Metro Export project. With respect to goods, the data collected are based on an analysis of actual bills of lading for goods shipped by different carriers from one point to another. BBER had suspected that the WISER data, which in 2012 identified \$2.97 billion in goods exports, might be incomplete.³ The magnitude of the undercount is only suggested by the Brookings numbers, which count \$3.28 billion in foreign goods exports for the state's 4 MSAs, Albuquerque, Las Cruces, Santa Fe and Farmington. The IMPLAN estimates for NM's largest foreign export industry, computers and other electronics, is \$1.55 billion versus WISER's \$1.67 billion.

Like IMPLAN, Brookings also estimates the value of exports of services. For just the Albuquerque MSA, these international exports totaled \$1.7 billion.

Brookings data indicate that each of the MSAs imports more from the rest of the world than they export. The IMPLAN data similarly show a net trade deficit both for the US and for the rest of the world. Internationally, NM imports were estimated at \$15.8 billion as compared to the \$8.2 billion exported. Domestically, IMPLAN exports total \$60.9 billion versus the \$42.4 billion imported.

³ NM as a land-locked state and without, until recently, a functioning commercial port, was forced to ship exports through ports in other states. Efforts were made by the NM Congressional Delegation to ensure that Intel's exports of electronics components and computers would be counted, but the accuracy of the data for other industries was more questionable.