The Economic Impact of Presentation Medical Center and Clinic on Rolette County, North Dakota

Prepared by:

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Prepared for:

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Medical facilities have a tremendous medical and economic impact on the community or county in which they are located. This is especially true with health care facilities, such as hospitals and nursing homes. These facilities not only employ a number of people and have a large payroll, but they also draw into the community or county a large number of people from rural areas that need medical services. The overall objective of this study is to measure the economic impact of Presentation Medical Center and Clinic (PMC) on Rolette County in North Dakota. The specific objectives of this report are to:

1. Discuss the importance of health care services to rural development, including national health trend data;
2. Review demographic and economic data for Rolette County;
3. Summarize the direct economic activities of PMC from operations in Rolette County;
4. Present concepts of community economics and multipliers; and
5. Estimate the economic impact of PMC from operating activities in Rolette County.

No recommendations will be made in this report.

Health Services and Rural Development

The nexus between health care services and rural development is often overlooked. At least three primary areas of commonality exist. A strong health care system can help attract and maintain business and industry growth, and attract and retain retirees (**Table 1**). A strong health care system can also create jobs in the local area.

Table 1
Services that Impact Rural Development

Type of Growth	Services Important to Attract Growth
Industrial and Business	Health and Education
Retirees	Health and Safety

Studies have found that quality-of-life (QOL) factors are playing a dramatic role in business and industry location decisions. Among the most significant of the QOL variables are health care services, which are important for at least three reasons.

Business and Industry Growth

First, as noted by a member of the Board of Directors of a community economic development corporation, the presence of good health and education services is imperative to industrial and business leaders as they select a community for location. Employees and participating management may offer strong resistance if they are asked to move into a community with substandard or inconveniently located health services.

Secondly, when a business or industry makes a location decision, it wants to ensure that the local labor force will be productive, and a key factor in productivity is good health. Thus, investments in health care services can be expected to yield dividends in the form of increased labor productivity.

The cost of health care services is the third factor that is considered by business and industry in development decisions. Research shows that corporations take a serious look at health care costs in determining site locations. Sites that provide health care services at a lower cost are given higher consideration for new industry than sites with much higher health care costs.

Health Services and Attracting Retirees

A strong and convenient health care system is important to retirees, a special group of residents whose spending and purchasing can be a significant source of income for the local economy. Many rural areas have environments (e.g., outdoor activities) that enable them to be in a good position to attract and retain retirees. The amount of spending embodied in this population, including the purchasing power associated with Social Security, Medicare, and other transfer payments, is substantial. Additionally, middle and upper income retirees often have substantial net worth. Although the data are limited, several studies suggest health services may be a critical variable that influences the location decision of retirees. For example, one study found that four items were the best predictors of retirement locations: safety, recreational facilities, dwelling units, and health care. Another study found that nearly 60 percent of potential retirees said health services were in the "must have" category when considering a retirement community. Only protective services were mentioned more often than health services as a "must have" service.

Health Services and Job Growth

A factor important to the success of rural economic development is job creation. ***The health care sector is an extremely fast growing sector, and based on the current demographics, there is every reason to expect this trend to continue.*** Data in **Table 2** provide selected expenditure and employment data for the United States. Several highlights from the national data are:

- In 1970, health care services as a share of the national gross domestic product (GDP) were 7.0 percent and increased to 17.4 percent in 2013;

Table 2
United States Health Expenditures and Employment Data
1970-2013; Projected for 2016-2024

Year	Total Health Expenditures ($Billions)	Per Capita Health Expenditures ($)	Health as % of GDP (%)	Health Sector Employment (000)	Avg Annual Increase in Employment (%)
Historical					
1970	$74.9	$356	7.0%	3,052 [a]	
1980	255.8	1,110	8.9%	5,278 [a]	7.3%
1990	724.3	2,855	12.1%	8,211 [a]	5.6%
2000	1,378.0	4,881	13.4%	10,858 [a]	3.2%
2010	2,604.1	8,428	17.4%	13,777 [b]	2.7%
2011	2,705.3	8,698	17.4%	14,026 [b]	1.8%
2012	2,817.3	8,996	17.4%	14,282 [b]	1.8%
2013	2,919.1	9,257	17.4%	14,511 [b]	1.8%
				Avg Yrly Increase 2000 to 2013	2.6%
Projections					
2016	3,402.6	10,527	18.1%		
2020	4,273.8	12,741	18.5%		
2024	5,425.1	15,618	19.6%		

SOURCES: U.S. Department of Labor, Bureau of Labor Statistics (www.bls.gov [December 2015]); U.S. Department of Health and Human Services, Centers for Medicare and Medicaid Services, National Health Expenditures 1960-2013 and National Health Expenditure Projections 2014-2024 (https://www.cms.gov/Research-Statistics-Data-and-Systems/Statistics-Trends-and-Reports/NationalHealthExpendData/NationalHealthAccountsProjected.html [December 2015]).

[a] Based on Standard Industrial Classification (SIC) codes for health sector employment.

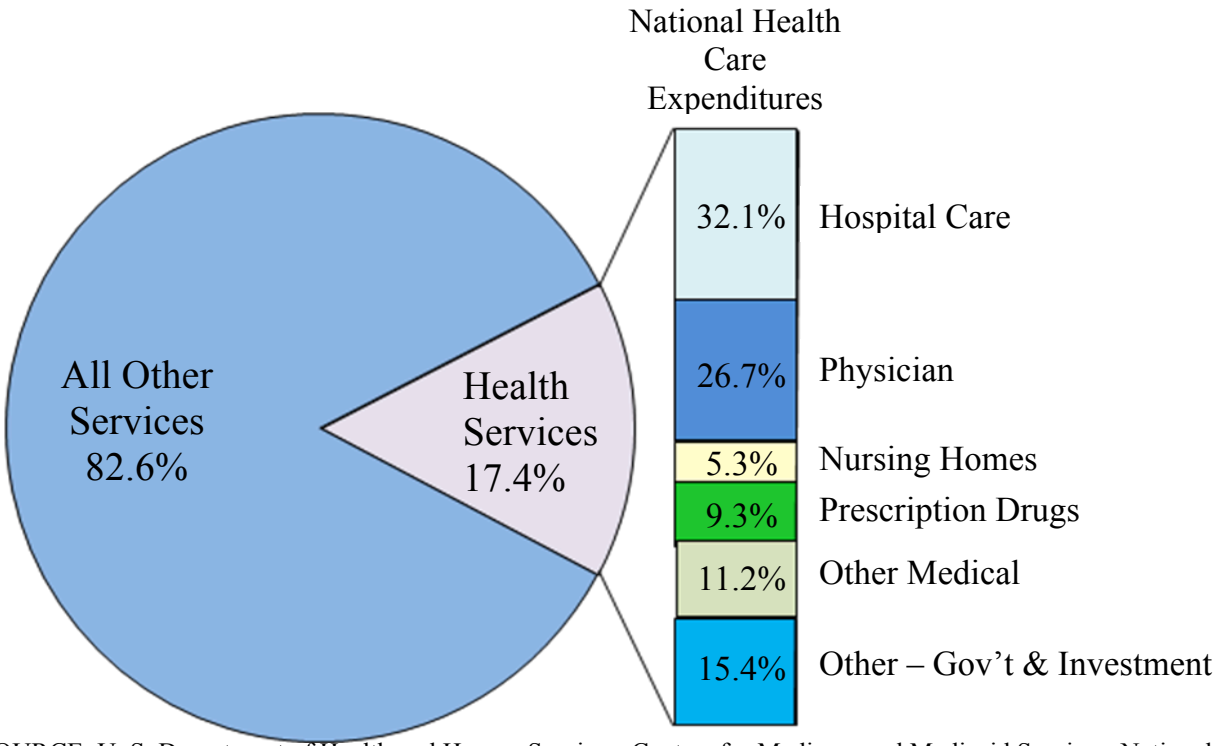
[b] Based on North American Industrial Classification System (NAICS) for health sector employment.

- Per capita health expenditures increased from $356 in 1970 to $9,257 in 2013;
- Employment in the health sector increased 375.5 percent from 1970 to 2013; and
- Annual increases in employment from 2000 to 2013 ranged from 1.8 percent to 3.2 percent, with an average of 2.6 percent.

The U. S. Department of Health and Human Services, Centers for Medicare and Medicaid Services, also projects that health care expenditures will account for 18.5 percent of GDP by 2020 and increase to 19.6 percent of GDP in 2024. Per capita health care expenditures are projected to increase to $12,741 in 2020 and to $15,618 in 2024. Total health expenditures are projected to increase to over $5.4 trillion in 2024.

Figure 1 illustrates 2013 health expenditures by percent of GDP and by type of health service. Health services represented 17.4 percent of national GDP in 2013. The largest category of health services was hospital care, representing 32.1 percent of the total and the second largest category was physician services with 26.7 percent of the total.

Figure 1
National Health Expenditures as a Percent of Gross Domestic Product and by Health Service Type, 2013



SOURCE: U. S. Department of Health and Human Services, Centers for Medicare and Medicaid Services, National Health Expenditures 2013 (http://www.cms.gov/Research-Statistics-Data-and-Systems/Statistics-Trends-and-Reports/NationalHealthExpendData/index.html [December 2015]).

Rolette County Demographic and Economic Data

PMC is located in Rolla in Rolette County, North Dakota. The medical service area is Rolette County, North Dakota. **Table 3** illustrates the last two U. S. Census Bureau populations for Rolette County cities and surrounding rural area, Rolette County and North Dakota. The most current population estimates for 2014 are also provided.

The data in **Table 3** show Rolla, the county seat, had population of 1,417 in 2000 and 1,280 in 2010, which represents a decrease of 9.7 percent. Rolla and St. John City show a decrease in population from 2000 to 2010. The rural area increased 3.1 percent during this same time period. This compares to Rolette County increasing 1.9 percent and North Dakota increasing 4.7 percent. The 2014 estimates show increasing population from the 2010 Census to 2014 for the rural area (5.0 percent), the county (4.9 percent) and the state (9.9 percent).

The 2010 Census populations and population projections for the county and state are illustrated in **Table 4**. The 2010 populations are from the U. S. Census Bureau and the projections from the North Dakota Housing Finance Agency, 2012 Statewide Housing Assessment Resource Project. The populations are projected to increase for both the county and the state from 2010 through 2025.

Table 5 shows the populations for the county and state by age group and gender for the 2000 and 2010 Census years and the 2014 estimate year. From 2000 to 2010, the younger age groups in Rolette County decreased in total population with 0-14 year olds decreasing 6.4 percent and 15-19 year olds decreasing 6.5 percent. The age group in the county with the largest increase is the 45-64 year olds with 32.0 percent. North Dakota showed similar trends with the two youngest age groups decreasing and the 45-64 age group having the largest increase. The male population for the county increased 2.3 percent and the female population for the county

Table 3
Population and Percent Change for Rolla,
Rolette County, and the State of North Dakota

	2000 Population	2010 Population	2014 Estimate	% change '00 to '10	% change '10 to '14
Dunseith City	739	773	838	4.6%	8.4%
Mylo City	19	20	8	5.3%	-60.0%
Rolette City	538	594	656	10.4%	10.4%
Rolla (county seat)	1,417	1,280	1280	-9.7%	0.0%
St. John City	358	341	361	-4.7%	5.9%
Rural Area	10,603	10,929	11,473	3.1%	5.0%
Rolette County	13,674	13,937	14,616	1.9%	4.9%
North Dakota	642,200	672,591	739,482	4.7%	9.9%

SOURCE: 2000 and 2010 Census populations and 2013 and 2014 population estimate, U.S. Census Bureau (www.census.gov [December 2015]).

*CDP Census Designated Place

Table 4
2010 Census Population and 2020 and 2025 Population Projections
for Rolette County, North Dakota

	2010 Census	2020 Projected	2025 Projected	% Change '10-'20	% Change '10-'25
Rolette County	13,937	15,172	15,651	8.9%	12.3%
North Dakota	672,591	806,541	841,820	19.9%	25.2%

SOURCE: 2010 Census Population, U.S. Census Bureau (www.census.gov [December 2015]); 2020-2025 Population Projections, North Dakota Housing and Finance Agency, Statewide Housing Needs Assessment, Detailed Tables (www.ndhfa.org [December 2015]).

increased 1.5 percent. The state had male population increase of 6.0 percent and female increase of 3.4 percent. From 2010 to 2014, the county had the largest decrease in population for the age 15-19 age group and the largest increase in the 20-24 age group; the state increased in all categories with the largest increase in the age 20-24 age group.

Table 5
U.S. Census Bureau Population by Age Groups and Gender
for Rolette County and the State of North Dakota, 2000, 2010, 2014 Estimates

	Age Groups							Gender	
	0-14	15-19	20-24	25-44	45-64	65+	Totals	Male	Female
2000 Census									
Dunseith city	229	53	60	176	107	114	739	351	388
Mylo city	2	0	1	3	6	7	19	11	8
Rolette city	88	33	27	112	122	156	538	261	277
Rolla city	317	112	68	342	308	270	1,417	650	767
St. John city	101	25	22	92	75	43	358	166	192
Rolette County	4,108	1,345	837	3,529	2,530	1,325	13,674	6,741	6,933
Percent of Total	30.0%	9.8%	6.1%	25.8%	18.5%	9.7%	100.0%	49.3%	50.7%
North Dakota	129,846	53,618	50,503	174,891	138,864	94,478	642,200	320,524	321,676
Percent of Total	20.2%	8.3%	7.9%	27.2%	21.6%	14.7%	100.0%	49.9%	50.1%
2010 Census									
Dunseith city	235	57	63	184	140	94	773	380	393
Mylo city	6	0	0	4	8	2	20	10	10
Rolette city	118	38	34	115	149	140	594	286	308
Rolla city	303	75	81	283	319	219	1,280	605	675
St. John city	85	30	26	88	75	37	341	161	180
Rolette County	3,846	1,257	911	3,186	3,339	1,398	13,937	6,897	7,040
Percent of Total	27.6%	9.0%	6.5%	22.9%	24.0%	10.0%	100.0%	49.5%	50.5%
North Dakota	124,461	47,474	58,956	165,747	178,476	97,477	672,591	339,864	332,727
Percent of Total	18.5%	7.1%	8.8%	24.6%	26.5%	14.5%	100.0%	50.5%	49.5%
2014 Estimate									
Rolette County	4,263	1,082	1,019	3,341	3,418	1,493	14,616	7,183	7,433
Percent of Total	29.2%	7.4%	7.0%	22.9%	23.4%	10.2%	100.0%	49.1%	50.9%
North Dakota	142,444	49,127	70,908	190,044	181,961	104,998	739,482	379,019	360,463
Percent of Total	19.3%	6.6%	9.6%	25.7%	24.6%	14.2%	100.0%	51.3%	48.7%
% Change '00-'10									
Rolette County	-6.4%	-6.5%	8.8%	-9.7%	32.0%	5.5%	1.9%	2.3%	1.5%
North Dakota	-4.1%	-11.5%	16.7%	-5.2%	28.5%	3.2%	4.7%	6.0%	3.4%
% Change '10-'14									
Rolette County	10.8%	-13.9%	11.9%	4.9%	2.4%	6.8%	4.9%	4.1%	5.6%
North Dakota	14.4%	3.5%	20.3%	14.7%	2.0%	7.7%	9.9%	11.5%	8.3%

SOURCE: 2000 and 2010 Census population and 2014 Population Estimate by age groups, U.S. Census Bureau (www.census.gov [December 2015]).

Table 6 provides the populations of Rolette County and North Dakota by race groups and Hispanic origin. From 2000 to 2010, Rolette County shows a decrease in the white race group (-17.8 percent) and North Dakota shows an increase in all race groups. Hispanic origin from 2000 to 2010 increased in both the county (20.9 percent) and the state (73.0 percent).

Data from County Business Patterns and Bureau of Economic Analysis show trends in the health services employment and payroll (income) over time; the two data sources have different definitions but the trends show how health services and industries, in general, change over time.

Data from U.S. Census Bureau, County Business Patterns, are illustrated in **Table 7**, showing employment and payroll for health services compared to the total employment and payroll for the county and the state. The data show that the county health services employment decreased 3.2 percent from 2003 to 2013 while the total county employment decreased 5.2 percent. County health services employment as a percent of total county employment was 21.8 percent in 2003 and increased to 22.3 percent in 2013; the state health services employment was 19.8 percent of total state employment in 2003 and decreased to 17.3 percent in 2013.

County health services payroll increased 31.7 percent from 2003 to 2013, while total county payroll increased 19.4 percent. County health services payroll as a percent of total county payroll was 31.7 percent in 2003 and increased to 34.9 percent in 2013. This compares to the state health services payroll as a percent of total state payroll of 21.0 percent in 2003 and decreasing to 16.6 percent in 2013.

Data from U.S. Department of Commerce, Regional Economic Information System, Bureau of Economic Analysis (BEA) are illustrated in **Tables 8** and **9**. **Table 8** shows employment by type and by industry. Total county employment decreased 0.1 percent from 2013

to 2014. No county data are available for health care/social assistance to confidentiality issues.

Table 6
U.S. Census Bureau Population by Race and Hispanic Origin
Rolette County and the State of North Dakota, 2000 and 2010

	White	Black	Native American[1]	Other[2]	Two or More Races[3]	Totals	Hispanic Origin[4]
2000 Census							
Rolette County	3,435	10	9,983	26	220	13,674	110
% of Total	25.1%	0.1%	73.0%	0.2%	1.6%	100.0%	0.8%
North Dakota	593,181	3,916	31,329	6,376	7,398	642,200	7,786
% of Total	92.4%	0.6%	4.9%	1.0%	1.2%	100.0%	1.2%
2010 Census							
Rolette County	2,825	21	10,763	32	296	13,937	133
% of Total	20.3%	0.2%	77.2%	0.2%	2.1%	100.0%	1.0%
North Dakota	605,449	7,960	36,591	10,738	11,853	672,591	13,467
% of Total	90.0%	1.2%	5.4%	1.6%	1.8%	100.0%	2.0%
2014 Estimate							
Rolette County	3,006	64	11,164	22	360	14,616	230
% of Total	20.6%	0.4%	76.4%	0.2%	2.5%	100.0%	1.6%
North Dakota	659,128	15,555	40,277	9,957	14,565	739,482	23,439
% of Total	89.1%	2.1%	5.4%	1.3%	2.0%	100.0%	3.2%
% Change '00-'10							
Rolette County	-17.8%	110.0%	7.8%	23.1%	34.5%	1.9%	20.9%
North Dakota	2.1%	103.3%	16.8%	68.4%	60.2%	4.7%	73.0%
% Change '10-'14							
Rolette County	6.4%	204.8%	3.7%	-31.3%	21.6%	4.9%	72.9%
North Dakota	8.9%	95.4%	10.1%	-7.3%	22.9%	9.9%	74.0%

SOURCE: 2000 and 2010 Census population and 2014 Population Estimates by race and ethnic origin, U.S. Census Bureau (www.census.gov [December 2015]).

[1]Native Americans include American Indians and Alaska Natives.

[2]Other is defined as Asian Americans, Native Hawaiians, Pacific Islanders, and all others.

[3]Two or More Races indicated a person is included in more than one race group, it was introduced as a new category in the 2000 Census.

[4]Hispanic population is not a race but rather a description of ethnic origin; Hispanics are included in the five race groups.

Table 7

Health Services for Employment and Payroll in Rolette County and North Dakota

	Employment			
	Health Services	Total County	Health Services as a % of Total County Employment	Health Services as a % of Total State Employment
2003	567	2,601	21.8%	19.8%
2004	570	2,661	21.4%	19.4%
2005	547	2,613	20.9%	18.6%
2006	595	2,628	22.6%	18.4%
2007	658	2,723	24.2%	17.5%
2008	550	2,674	20.6%	17.0%
2009	545	2,395	22.8%	18.0%
2010	522	2,456	21.3%	18.6%
2011	529	2,395	22.1%	18.4%
2012	537	2,404	22.3%	17.4%
2013	549	2,466	22.3%	17.3%
% Chg '03-'13	**-3.2%**	**-5.2%**		
	Payroll ($1000s)			
	Health Services	Total County	Health Services as a % of Total County Payroll	Health Services as a % of Total State Payroll
2003	18,625	58,838	31.7%	21.0%
2004	18,183	59,288	30.7%	20.9%
2005	18,086	61,109	29.6%	20.7%
2006	19,674	66,229	29.7%	19.9%
2007	22,856	67,740	33.7%	18.6%
2008	19,003	67,624	28.1%	18.4%
2009	19,434	62,762	31.0%	19.5%
2010	18,743	62,404	30.0%	19.5%
2011	19,049	61,498	31.0%	18.7%
2012	23,674	69,762	33.9%	17.0%
2013	24,524	70,248	34.9%	16.6%
% Chg '03-'13	**31.7%**	**19.4%**		

SOURCE: U.S. Census Bureau, County Business Patterns; 2003-2013 based upon NAICS (www.census.gov [December 2015]).

[1]The Health Care and Social Assistance NAICS sector comprises establishments providing health care and social assistance for individuals. The sector includes both health care and social assistance because it is sometimes difficult to distinguish between the boundaries of these two activities. Industries in this sector are arranged on a continuum starting with those establishments providing medical care exclusively, continuing with those providing health care and social assistance, and finally finishing with those providing only social assistance. The services provided by establishments in this sector are delivered by trained professionals. All industries in the sector shared this commonality of process, namely, labor inputs of health practitioners or social workers with the requisite expertise. Many of the industries in the sector are defined based on the educational degree held by the practitioners included in the industry.

[2] Data are excluded for self-employed persons, employees of private households, railroad employees, agricultural production workers, and for most government employees (except for those working in wholesale liquor establishments, retail liquor stores, Federally-chartered savings institutions, Federally-chartered credit unions, and hospitals).

Table 8

Full- & Part-Time Employment by Type of Employment & by Major Industry(NAICS)[1] for Rolette County and North Dakota, 2013 and 2014

	2013 Rolette County			2014 Rolette County			'13-'14	'13-'14
	No. of Jobs	% of Total	% of Private	No. of Jobs	% of Total	% of Private	% Chg County	% Chg State
Total employment	6,415	100.0%		6,407	100.0%		-0.1%	3.3%
Wage & salary	4,842	75.5%		4,834	75.4%		-0.2%	4.0%
Proprietors'	1,573	24.5%		1,573	24.6%		0.0%	0.6%
Farm proprietors'	542	8.4%		533	8.3%		-1.7%	-1.6%
Nonfarm proprietors' [2]	1,031	16.1%		1,040	16.2%		0.9%	1.3%
By Industry:								
Farm employment	591	9.2%		587	9.2%		-0.7%	0.7%
Nonfarm employment	5,824	90.8%		5,820	90.8%		-0.1%	3.5%
Private employment	2,820	44.0%	100.0%	2,812	43.9%	100.0%	-0.3%	4.0%
For, fshng, & related	(D)		**	(D)		**	**	0.2%
Mining	(D)		**	(D)		**	**	13.1%
Utilities	(L)		**	(L)		**	**	3.2%
Construction	289		10.2%	280		10.0%	-3.1%	6.2%
Manufacturing	213		7.6%	204		7.3%	-4.2%	2.4%
Wholesale trade	97		3.4%	110		3.9%	13.4%	3.3%
Retail trade	557		19.8%	571		20.3%	2.5%	2.9%
Transp & wrhsng	58		2.1%	61		2.2%	5.2%	8.0%
Information	44		1.6%	32		1.1%	-27.3%	0.4%
Finance & ins	(D)		**	(D)		**	**	2.1%
RE/rental/leasing	(D)		**	(D)		**	**	4.2%
Prof/sci/techn svcs	46		1.6%	43		1.5%	-6.5%	5.6%
Mgmt/cos & enterpr	0		0	0		0	0.0%	3.1%
Admin/waste svcs	110		3.9%	101		3.6%	-8.2%	4.5%
Educ services	(D)		**	(D)		**	**	3.5%
Hlth care/social asst	(D)		**	(D)		**	**	0.6%
Arts/entertnmnt/rec	(D)		**	(D)		**	**	2.7%
Accomm/food svcs	(D)		**	(D)		**	**	3.1%
Other/Not pub adm	205		7.3%	209		7.4%	2.0%	3.2%
Sum (D)s and /(L)s[3]	1,201		42.6%	1,201		42.7%	0.0%	N/A
Govt & govt enterpr	3,004	46.8%		3,008	46.9%		0.1%	0.7%

SOURCE: U.S. Department of Commerce, Regional Economic Information System, Bureau of Economic Analysis (www.bea.gov [December 2015]).

[1]The estimates of employment for 2001-2006 are based on the 2002 North American Industry Classification System (NAICS). The estimates for 2007-2010 are based on the 2007 NAICS. The estimates for 2011 forward are based on the 2012 NAICS.

[2]Excludes limited partners.

[3]All (D) & (L) categories have been totaled to show the total amount of missing data from private earnings.

(D) Not shown to avoid disclosure of confidential information, but the estimates for this item are included in the totals.

(L) Less than 10 jobs, but the estimates for this item are included in the totals.

**Due to confidential data not being disclosed, no percentages are available.

Table 9

Personal Income by Place of Work and by Industry (NAICS)[1]
for Rolette County and North Dakota, 2013 and 2014

	2013 Rolette County			2014 Rolette County			'13-'14	'13-'14
	Income ($1000s)	% of Total	% of Private	Income ($1000s)	% of Total	% of Private	% Chg County	% Chg State
Ttl earnings-plce of wrk	254,426	100.0%		260,477	100.0%		2.4%	5.8%
Wage/salary disbsmnts	160,362	63.0%		167,855	64.4%		4.7%	10.7%
Proprietors' income[2]	40,351	15.9%		36,826	14.1%		-8.7%	-16.5%
All other earnings	53,713	21.1%		55,796	21.4%		3.9%	7.8%
Earnings by Industry								
Farm earnings	21,244	8.3%		16,669	6.4%		-21.5%	-41.8%
Nonfarm earnings	233,182	91.7%		243,808	93.6%		4.6%	9.7%
Private earnings	77,109	30.3%	100.0%	82,854	31.8%	100.0%	7.5%	10.8%
For/fishng/related	(D)		**	(D)		**	**	7.5%
Mining	(D)		**	(D)		**	**	20.4%
Utilities	91		0.1%	117		0.1%	28.6%	8.9%
Construction	15,775		20.5%	16,919		20.4%	7.3%	14.6%
Manufacturing	8,964		11.6%	9,872		11.9%	10.1%	6.2%
Wholesale trade	3,619		4.7%	4,893		5.9%	35.2%	7.9%
Retail trade	14,727		19.1%	15,421		18.6%	4.7%	7.8%
Transp. & wrhsng	1,646		2.1%	1,751		2.1%	6.4%	12.7%
Information	930		1.2%	764		0.9%	-17.8%	6.4%
Finance & Ins.	(D)		**	(D)		**	**	7.6%
RE/rental/leasing	(D)		**	(D)		**	**	12.2%
Prof, sci, & tech srvcs	505		0.7%	474		0.6%	-6.1%	13.2%
Mgmnt/Cos & Entprs	0		0.0%	0		0.0%	0.0%	10.5%
Admin & waste svcs	1,734		2.2%	1,691		2.0%	-2.5%	12.2%
Educational services	(D)		**	(D)		**	**	6.6%
Hlth care/soc asst.	(D)		**	(D)		**	**	4.8%
Arts, Entmnt, & Recr.	(D)		**	(D)		**	**	5.7%
Accmdtn/food srvcs	(D)		**	(D)		**	**	9.5%
Other/Not pub adm	5,870		7.6%	6,251		7.5%	6.5%	8.4%
Sum (D) Categories[3]	23,248		30.1%	24,701		29.8%	6.3%	N/A
Govt & Govt Entprss	156,073	61.3%		160,954	61.8%		3.1%	3.6%

SOURCE: U.S. Department of Commerce, Regional Economic Information System, Bureau of Economic Analysis (www.bea.gov [December 2015]).

[1]The estimates are based on the North American Industry Classification System (NAICS).

[2]Proprietors' income includes the inventory valuation adjustment and capital consumption adjustment.

[3]All (D) categories have been totaled to show the total amount of missing data from private earnings.

(D) Not shown to avoid disclosure of confidential information, but the estimates for this item are included in the totals.

**Due to confidential data not being disclosed, no percentages are available.

The largest industry was retail trade for the county for both years. The industry with the largest percent change from 2013 to 2014 was wholesale trade, compared to the state with the largest percent change in the mining industry

Table 9 shows personal income by source and by industry. Total county income increased 2.4 percent from 2013 to 2014. No county data are available for health care/social assistance to confidentiality issues. The largest industry was construction for the county for both years. The industry with the largest percent change from 2013 to 2014 was construction, compared to the state with the largest percent change in the mining industry.

Basic economic indicators for Rolette County, North Dakota, and the United States are illustrated in **Table 10**. BEA data for 2014 show per capita income in Rolette County at $30,621, with the state ($55,802) and the nation ($46,049) much higher. The employment and labor force data are from the U.S. Department of Labor, Bureau of Labor Statistics. For 2014, the annual unemployment rate was 9.7 percent for Rolette County, compared to 2.8 percent for the state and 6.2 percent for the U.S. For the preliminary year-to-date October 2015 employment and labor force data, the unemployment rate for Rolette County was 6.8 percent; this compared to 2.0 percent for the state and 5.0 percent for the U.S.

Based on 2013 U. S. Census poverty data, Rolette County had 46.8 percent of the population under age 18 below poverty level; this compared to 14.1 percent for the state and 21.6 percent for the U.S. From BEA 2014 data, transfer receipts as a percentage for total personal income for Rolette County (33.5 percent) were much higher than the state (12.2 percent) and the nation (17.2 percent). Rolette This indicator shows the entity's percent of total personal income that comes from federal and state funds.

Table 10
Economic Indicators for Rolette County,
North Dakota and the United States

Indicator	Rolette County	North Dakota	United States
Total Personal Income (2014)	447,553,000	41,264,895,000	14,683,147,000,000
Per Capita Income (2014)	30,621	55,802	46,049
Employment (2014)	4,191	404,666	146,305,000
Unemployment (2014)	449	11,675	9,617,000
Unemployment Rate (2014)	9.7%	2.8%	6.2%
Employment (Oct. 2015)	3,998	402,742	149,120,000
Unemployment (Oct. 2015)	290	8,298	7,937,000
Unemployment Rate (Oct. 2015)	6.8%	2.0%	5.0%
% of People in Poverty (2013)	36.0%	11.9%	15.4%
% Under 18 in Poverty (2013)	46.8%	14.1%	21.6%
Transfer Receipts (2014)	150,059,000	5,054,891,000	2,529,139,000,000
Transfer Receipts as a Percentage of Total Personal Income (2014)	33.5%	12.2%	17.2%

SOURCE: Employment and unemployment data, U.S. Department of Labor, Bureau of Labor Statistics (www.bls.gov [December 2015]); Personal income, per capita income, and transfer receipts, U.S. Department of Commerce, Regional Economic Information System, Bureau of Economic Analysis (www.bea.gov [December 2015]); Poverty data, U.S. Census Bureau (www.census.gov [December 2015]).

Direct Economic Activities of Presentation Medical Center and Clinic

PMC in union with the Sisters of Mary of the Presentation is a Catholic healthcare organization. Through the power and example of Jesus Christ and his gospel values, we are committed to joyfully provide wholistic care and healing with integrity, compassion and respect to all we serve. PMC continues to provide our patients with the best care possible at a local level, making sure out patients receive the needed help, preventative measures, and necessary services to live a healthy life style and grow within a healthy community.

PMC is a 25 bed Critical Access Hospital (CAH) and Rural Health Clinic (RHC) located in Rolla, Rolette County, ND. PMC is a critical infrastructure to our community and is a major medical provider for Rolette County, providing inpatient, outpatient, and clinic services. PMC is one of the main designated healthcare providers for Rolette County with serving over 14,000 people in its community.

PMC is a key provider of emergency care with over 5,500 ER and 4,900 Clinic visits per year. The Emergency Department is a Level V with providers available 24 hours per day. Other ancillary outpatient services PMC has on site are Laboratory, Radiology, Respiratory Therapy, Physical Therapy, Pharmacy, and Cardiac Rehab. Outreach Specialty Provider services that are also provided at PMC include Surgery, Podiatry, Cardiology, Gynecology and Sleep Study services.

The direct economic activities of PMC include the employees and their wages, salaries, and benefits to provide the health care services. From **Table 11**, the total direct employment of PMC includes 96 employees and the total direct labor income is $5.7 million.

Table 11
Direct Economic Activities of Presentation Medical Center an d Clinic in Rolette County, North Dakota

DIRECT ACTIVITIES FROM OPERATIONS		
Categories	Number of Employees	Labor Income (Wages, Salaries, and Benefits)
Operations of Presentation Medical Center and Clinic	96	$5,733,809

SOURCE: Local data from Presentation Medical Center, 2015.

The economic impact of construction activities can also be measured for employment and labor income. These activities only occur during the year of construction, while operations occur each and every year that PMC continues to operate. PMC did not have construction activities to include in the economic impact.

The Impact of Presentation Medical Center and Clinic

The direct impacts of PMC, measured by employment and labor income, are only a portion of the total impact. There are additional economic impacts created as PMC and its employees spend money. These are known as secondary impacts and are measured by multipliers using an input-output model and data from IMPLAN (the model and data are further discussed in **Appendix A**). This model is widely used by economists and other academics across the U. S.

A brief description of the input-output model and the multiplier effect is included and illustrated in **Figure 2**. **Figure 2** illustrates the major flows of goods, services, and dollars of any economy. The businesses which sell some or all of their goods and services to buyers outside of the county are the foundation of a county's economy. Such a business is a basic industry. The flow of products out of, and dollars into, a county are represented by the two arrows in the upper

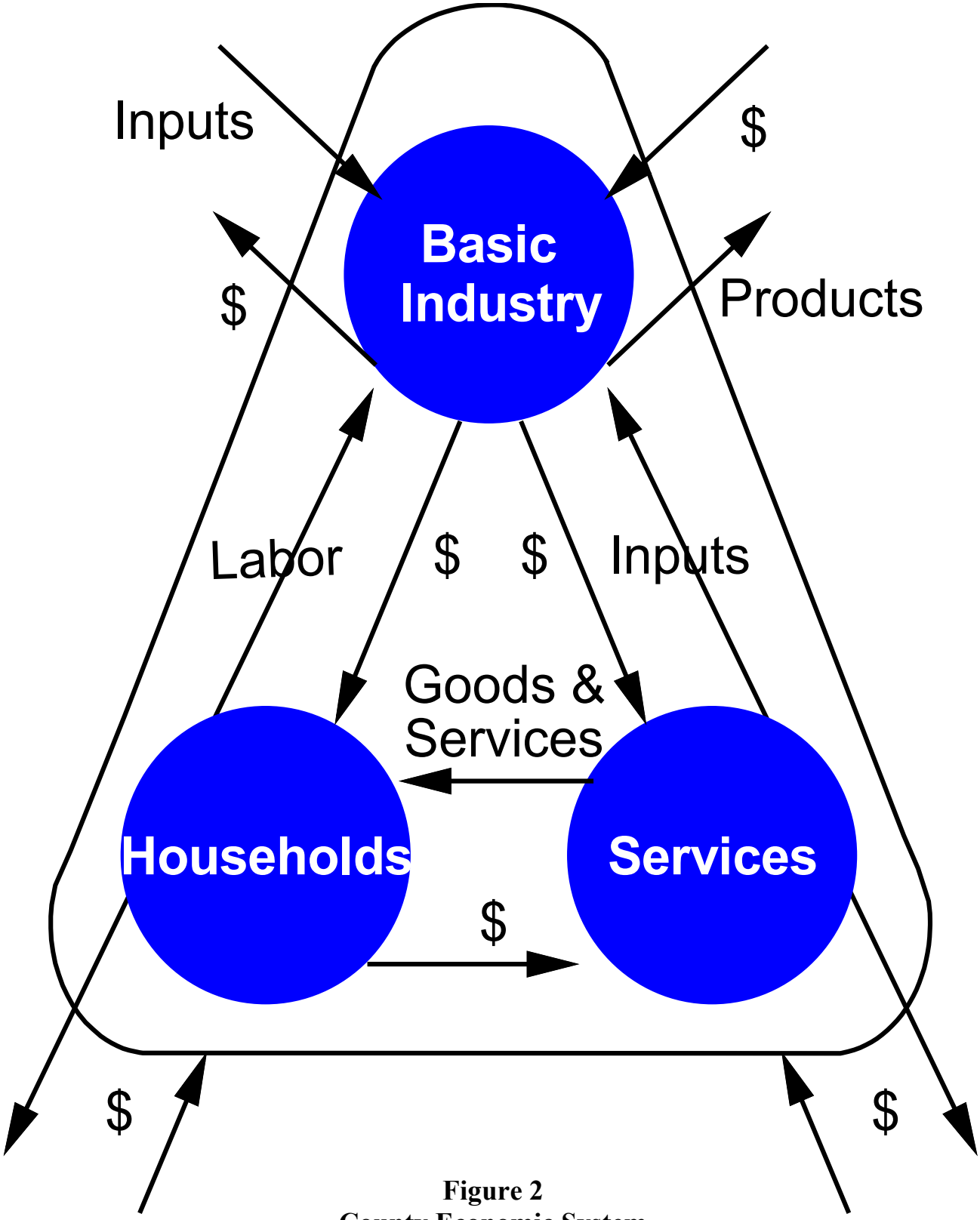


Figure 2
County Economic System

right portion of **Figure 2**. To produce these goods and services for "export" outside of the county, the basic industry purchases inputs from outside of the county (upper left portion of **Figure 2**), labor from the residents or "households" of the county (left side of **Figure 2**), and inputs from service industries located within the county (right side of **Figure 2**). The flow of labor, goods, and services in the county is completed by households using their earnings to purchase goods and services from the county's service industries (bottom of **Figure 2**). It is evident from the interrelationships shown in **Figure 2** that a change in any one segment of a county's economy will have reverberations throughout the entire economic system of the county.

Consider, for instance, the closing of a hospital. The services sector will no longer pay employees and the dollars going to households will stop. Likewise, the hospital will not purchase goods from other businesses, and the dollar flow to other businesses will stop. This decreases income in the "households" segment of the economy. Since earnings would decrease, households decrease their purchases of goods and services from businesses within the "services" segment of the economy. This, in turn, decreases these businesses' purchases of labor and inputs. Thus, the change in the economic base works its way throughout the entire local economy.

The total impact of a change in the economy consists of direct, indirect, and induced impacts. Direct impacts are the changes in the activities of the impacting industry, such as the closing of a hospital. The impacting business, such as the hospital, changes its purchases of inputs as a result of the direct impact. This also produces an indirect impact in the business sectors. Both the direct and indirect impacts change the flow of dollars to the county's households. The households alter their consumption accordingly. The effect of this change in household consumption upon businesses in a county is referred to as an induced impact.

A measure is needed that yields the effects created by an increase or decrease in economic activity. In economics, this measure is called the multiplier effect. Multipliers are used in this report. An employment multiplier is defined as:

> ***"…the ratio between direct employment, or that employment used by the industry initially experiencing a change in final demand and the direct, indirect, and induced employment."***

An employment multiplier of 3.0 indicates that if one job is created by a new industry, 2.0 jobs are created in other sectors due to business (indirect) and household (induced) spending. The same concept applies to labor income and output multipliers.

The Impact from Operating Activities

The employment and labor income impacts of PMC from operating activities are presented in **Table 12**. Direct employment and labor income from operating activities were obtained from PMC. The multipliers specific to Rolette County, ND, are derived from IMPLAN data.

Table 12
Economic Impacts from Operations
of Presentation Medical Center and Clinic, 2015

EMPLOYMENT IMPACT FROM OPERATIONS

Categories	Direct Employment	Employment Multiplier	Secondary Employment Impact	Total Employment Impact
Operations of Presentation Medical Center and Clinic	96	1.30	29	125

LABOR INCOME IMPACT FROM OPERATIONS

Categories	Direct Labor Income	Labor Income Multiplier	Secondary Labor Income Impact	Total Labor Income Impact
Operations of Presentation Medical Center and Clinic	$5,733,809	1.12	$688,057	$6,421,866

SOURCE: Direct employment and labor income data from operations provided by Presentation Medical Center, 2015; Multipliers from IMPLAN Group, LLC [www.implan.com (December 2015)].

The hospital employs 96 employees. The hospital employment multiplier is 1.30 this

means for every job in the hospital sector, another 0.30 job is created in other sectors (businesses) in Rolette County. The secondary employment generated in Rolette County from the hospital sector is estimated to be 29 jobs. The hospital has a total impact of 125 jobs on the local economy of Rolette County.

Data obtained from PMC indicate that direct labor income for the hospital is $5.7 million. Using the hospital labor income multiplier of 1.12 derived from IMPLAN, PMC generates secondary labor income impact of $0.7 million and total labor income impact of $6.4 million.

Summary

Both the operating activities and construction activities of a hospital impact the economy of Rolette County. Often overlooked can be the economic impact created from construction activities. This report measures the impact that Presentation Medical Center and Clinic will have on the economy due to its normal operating activities; Presentation Medical Center and Clinic had no construction activities to report during this year. The operating impact occurs every year; whereas, the construction impact will only occur during the construction year.

In 2015, Presentation Medical Center and Clinic employed 96 full-time and part-time and generated $5.7 million in labor income (wages, salaries, and benefits). When the secondary impacts are included, the total employment impact is 125 jobs and the total labor income impact is $6.4 million. The employment and labor income impacts from operating activities are annual and will continue each and every year that Presentation Medical Center and Clinic operates in the future; these are long term economic benefits of Presentation Medical Center and Clinic.

The impacts generated by Presentation Medical Center and Clinic contribute to the local economy of Rolette County. The hospital employs local residents. The hospital and its employees spend money in Rolette County and generate a secondary impact. If the hospital

increases or decreases in size, the medical health of Rolette County as well as the economic health of Rolette County can be affected.

For the attraction of industrial firms, businesses, and retirees, the local area should have quality hospital and health services. A quality hospital and health sector can contribute to the overall economic health of Rolette County, as well as the overall medical health of the Rolette County residents. Given this, not only does Presentation Medical Center and Clinic contribute to the health and wellness of the local residents but Presentation Medical Center and Clinic also contributes to the overall economic strength of Rolette County.

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Appendix A

IMPLAN Software and Data from IMPLAN Group, LLC:

Model and Data Used to Derive Multipliers

APPENDIX A
IMPLAN Software and Data from IMPLAN Group, LLC:
Model and Data Used to Derive Multipliers

A Review of Input-Output Analysis

Input-output (I/O) (Miernyk, 1965) was designed to analyze the transactions among the industries in an economy. These models are largely based on the work of Wassily Leontief (1936). Detailed I/O analysis captures the indirect and induced interrelated circular behavior of the economy. For example, an increase in the demand for health services requires more equipment, more labor, and more supplies, which, in turn, requires more labor to produce the supplies, etc. By simultaneously accounting for structural interaction between sectors and industries, I/O analysis gives expression to the general economic equilibrium system. The analysis utilizes assumptions based on linear and fixed coefficients and limited substitutions among inputs and outputs. The analysis also assumes that average and marginal I/O coefficients are equal.

Nonetheless, the framework has been widely accepted and used. I/O analysis is useful when carefully executed and interpreted in defining the structure of an area, the interdependencies among industries, and forecasting economic outcomes.

The I/O model coefficients describe the structural interdependence of an economy. From the coefficients, various predictive devices can be computed, which can be useful in analyzing economic changes in a state, an area or a county. Multipliers indicate the relationship between some observed change in the economy and the total change in economic activity created throughout the economy.

The basis of IMPLAN was developed by the U. S. Forest Service to construct input/output accounts and models. The complexity of this type of modeling had hindered practitioners from constructing models specific to a community requesting an analysis. The University of Minnesota utilized the U.S. Forest Service model to further develop the methodology and expand the data sources to form the model known as IMPLAN. The founders of IMPLAN, Scott Lindall and Doug Olson, joined the University of Minnesota in 1984 and, as an outgrowth of their work with the University of Minnesota, entered into a technology transfer agreement with the University of Minnesota that allowed them to form Minnesota IMPLAN Group, Inc. (MIG).

In 2013 Minnesota IMPLAN Group, Inc. was purchased by IMPLAN Group, LLC and relocated to:

IMPLAN Group, LLC
16740 Birkdale Commons Parkway Suite 206
Huntersville, NC 28078

Support hours are 8 am – 7 pm Eastern time and can be reached by email at info@implan.com or by phone at 651-439-4421 or 704-727-4141

IMPLAN Software and Data

At first, IMPLAN focused on database development and provided data that could be used in the Forest Service version of the software. In 1995, IMPLAN took on the task of writing a new version of the IMPLAN software from scratch that extended the previous Forest Service version by creating an entirely new modeling system – an extension of input-output accounts and resulting Social Accounting Matrices (SAM) multipliers. Version 2 of the new IMPLAN software became available in May of 1999. The latest development of the software is now available, IMPLAN Version 3 Software System, the new economic impact assessment software system.

With IMPLAN Version 3 software, the packaging of products has changed. Version 3 utilizes 2007 or later data. When data are ordered, the data cost plus shipping are the only costs. Version 3.0 software and the new IMPLAN appliance are included in the cost of the data. There are no additional fees to upgrade to IMPLAN Version 3.0. Data files are licensed to an individual user. Version 2 is no longer compatible with 2008 and later data sets.

Version 3 allows the user to do much more detailed analyses. Users can continue to create detailed economic impact estimates. Version 3.0 takes the analysis further, providing a new method for estimating regional imports and exports is being implemented - a trade model. IMPLAN can construct a model for any state, region, area, county, or zip code area in the United States by using available national, state, county, and zip code level data. Impact analysis can be performed once a regional input/output model is constructed.

IMPLAN Multipliers

Five different sets of multipliers are estimated by IMPLAN, corresponding to five measures of regional economic activity. These are: total industry output, personal income, total income, value added, and employment. Two types of multipliers are generated. Type I multipliers measure the impact in terms of direct and indirect effects. Direct impacts are the changes in the activities of the focus industry or firm, such as the closing of a hospital. The focus business changes its purchases of inputs as a result of the direct impacts. This produces indirect impacts in other business sectors. However, the total impact of a change in the economy consists of direct, indirect, and induced changes. Both the direct and indirect impacts change the flow of dollars to the households. Subsequently, the households alter their consumption accordingly. The effect of the changes in household consumption on businesses in a community is referred to as an induced effect. To measure the total impact, a Type II (or Type SAM) multiplier is used. The Type II multiplier compares direct, indirect, and induced effects with the direct effects generated by a change in final demand (the sum of direct, indirect, and induced divided by direct).

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