

**Impact of Mining Workforce Reductions on the Custer County  
Economy**

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## **Introduction**

### **County geographical description**

The county is in central southern Idaho and includes the part of the Frank Church River of No Return and Boulder White Cloud Wildernesses. In addition, part of the Sawtooth National Recreation Area is located in the South western part of the county. Geographically, the county seat, Challis, is 145 west miles from Idaho Falls, ID., 187 miles northeast from Boise, ID. and 198 south from Missoula, MT. The majority of the county is mountainous surrounding the central valley where the county seat is located. Most of the area outside the valley bottoms are public lands under control of federal (Forest Service and Bureau of Land Management) and state (Idaho Department of Lands) agencies.

### **Changes taking place in the county**

The county was initially settled as mining opportunities opened up. Later agriculture came as a means to supply food for the miners. Local timber was used to meet housing and industrial needs. Later, as the national society's values changed, non-consumptive uses and species preservation were given greater emphasis for land use on federal land. That is causing public land managers to alter their methods and emphasis. This put great pressure on the traditional land uses and caused considerable change in the local economy. That process continues as the economy adjusts to the political and economic changes. The mining reductions in the mid nineteen nineties forced a different type of adjustment.

The most recent change is the reduction of the labor force at the mine because of low mineral prices. The firm's management is expecting to maintain the same production with half of the labor force. This reduction of 114 employees will reduce the purchases made with in the local economy. Although a major proportion of household purchases will be for imports to the region, the margin (local contribution) is still important to the local economy. That will be lost with the reduction and will likely reduce local employment also. The following figures show various changes which have occurred in Custer County over the last 40 years. The following section describes some of the specific effects of the mining employment reduction on the county and its citizens.



## Economic Growth

Economic growth in Custer County was evaluated using population, employment, total personal income, and individual income. In order to compare with Idaho, population, employment and income were converted to indices with 1969 as the base year (i.e., 1969=100). To account for the effects of inflation and allow comparison of data between years, all dollar amounts have been deflated to 1996 dollars.

## Population

Retaining economic growth in a community requires a stable or growing population to work and consume, and thus support economic growth. Population growth is a reflection of a community's ability to attract and retain individuals as both producers and consumers. The following figures summarize population growth for Custer County from 1969 to 1998 and compare it through indices with population growth for the State of Idaho.

- Between 1969 to 1998, Custer County's population increased by 141 percent (2,906 to 4,091). (Figure 1) The population spike in the 1980s was the result of spending new mining operations.
- Idaho's population has been steadily increasing, however growth was flat during the 70's. Custer County's population spiked in 1985, but decreased there after with two slight increases during 1992 and 1996. (Figure 2)

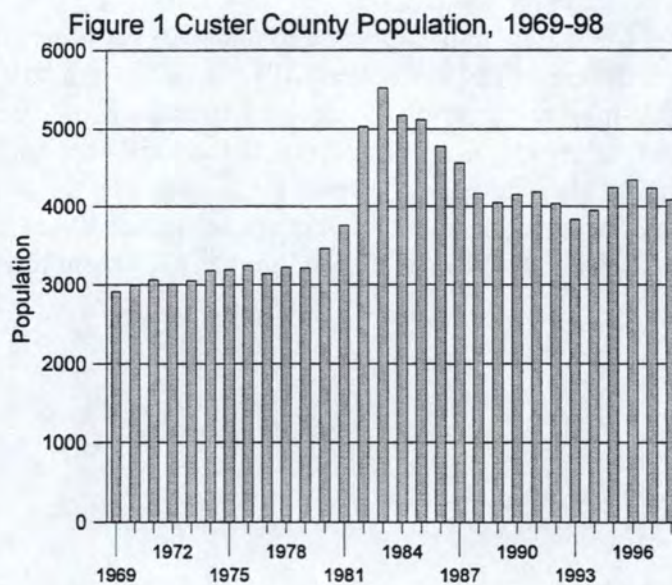
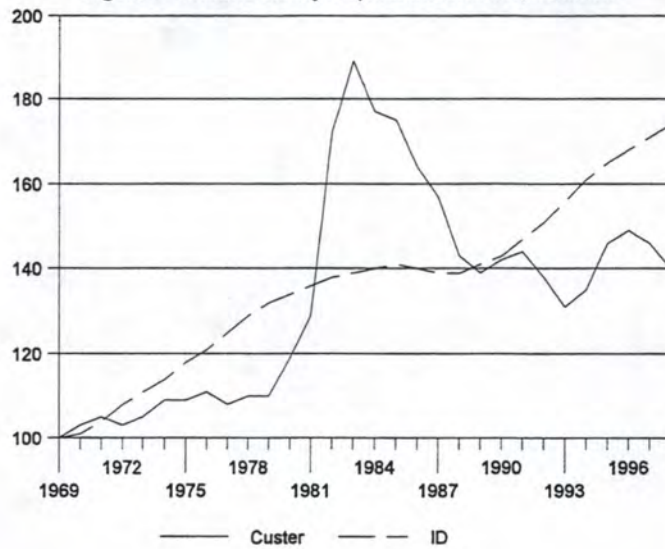




Figure 2 Custer County Population Indices, 1969-98



## Employment

Closely associated with changes in population are changes in employment. Traditionally, it has been assumed that population growth follows employment growth. However, more recently it has been suggested that in some cases, such as when quality of life or amenity considerations are involved, employment growth may actually follow population growth. The following graphs summarize employment growth for Custer County, from 1969 to 1998, and compare it with Idaho. The graph labeled *Changes in Custer County Employment, 1969-98* indicates the change in employment by sector for Custer County between 1969 and 1998. *Custer County Employment by Type, 1969-98* compares the trend in Wage and Salary jobs with that for Non-Farm Proprietor Employed (NFPE) jobs.

- Employment in Custer County rose 210% between 1969 to 1998 (1,286 to 2,695). (Figure 3)
- Custer County's employment followed the states rate during the 70's, then started to increase during the early 80's and decreased in the late 80's. It again increased in the mid 90's. (Figure 4)
- Jobs were greatly increased in trade, mining, and services while logging and manufacturing had the smallest increase in jobs. (Figure 5)
- Between 1969 and 1998, wage and salary jobs were much greater than non-farm proprietor employed jobs. In 1969, the number of non-farm proprietor-employed jobs was 28 percent of wage and salary jobs. In 1998, this number increased to 38 percent. (Figure 6)
- In 1969 the job/person ratio was 0.44. In comparison 1998 it was 0.66. This means more persons were working for others in Department of Labor covered employment.



Figure 3 Custer County Employment, 1969-88

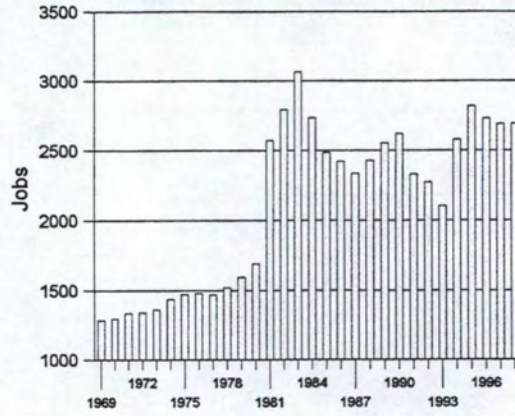


Figure 4 Employment Indices, 1969-98

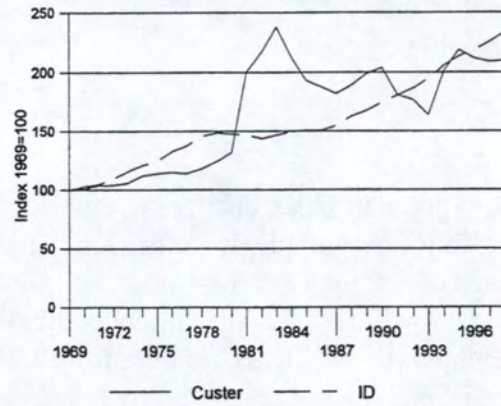
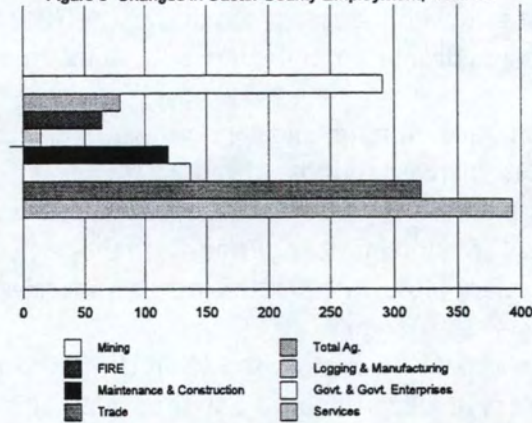
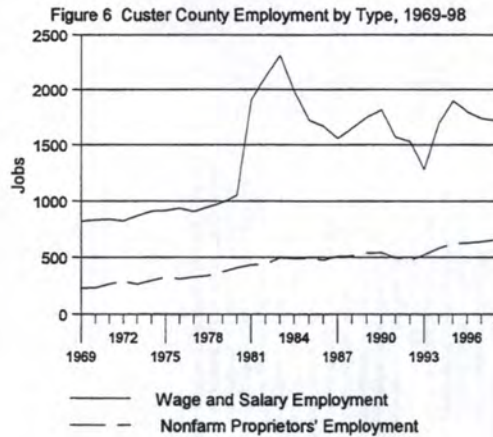


Figure 5 Changes in Custer County Employment, 1969-98



Note: Mining & Services data for 1998 was not available, 1997 data was used



### Total Personal Income

The following graphs describe personal income in Custer County. Personal income can be used as a method to estimate a community's economic growth. The two graphs labeled *Custer County Personal Income, 1969-98* (Figure 7) and *Total Personal Income Indices, 1969-98* (Fig. 8) summarize Custer County's income growth for the 1969 to 1998 time period, and compare it to that of the state of Idaho. *Change in Custer County Total Income, 1969-98* (Fig. 9) shows the change in source of personal income by sector for Custer County. Net earnings and transfer payments are compared in *Custer County Income by Type, 1969-98* (Figure 10). All dollar amounts used have been deflated to 1996 dollars.

- Custer County personal income is over two times higher in 1998 than it was in 1969, reaching over \$22,006. (Figure 7). The opening of new mines strongly affected personal income starting in the 1980s.
- Custer County and the state of Idaho's total personal income have tripled since 1969. (Figure 8).
- Mining has grown more than any other sector of Custer county's economy. (Figure 9).
- Transfer payments measured 21% of Custer's net earnings in 1998. (Figure 10). (Transfer payments include unemployment, veterans, medicare, worker's compensation, pensions, social security and other such payments.)



Figure 7 Custer County Personal Income, 1969-98

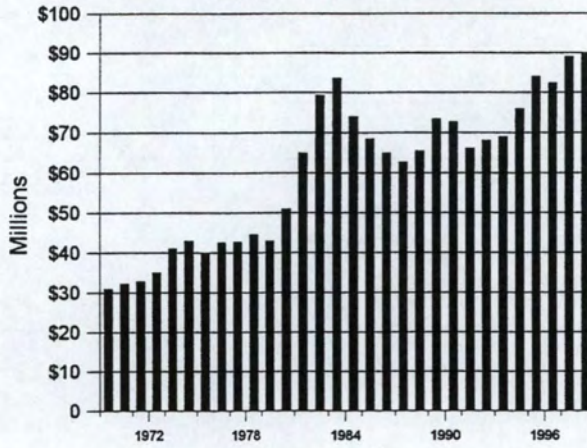


Figure 8 Total Personal Income Indices, 1969-98

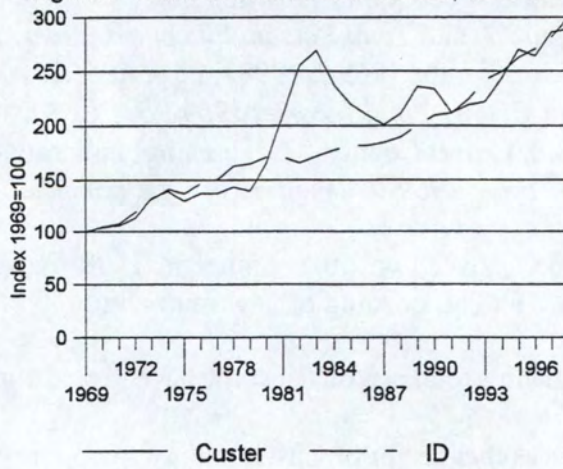




Figure 9 Change in Custer County Income, 1969-98

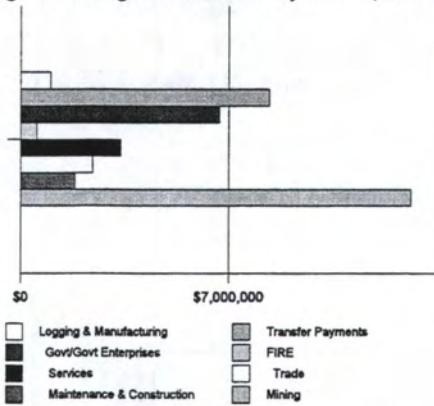
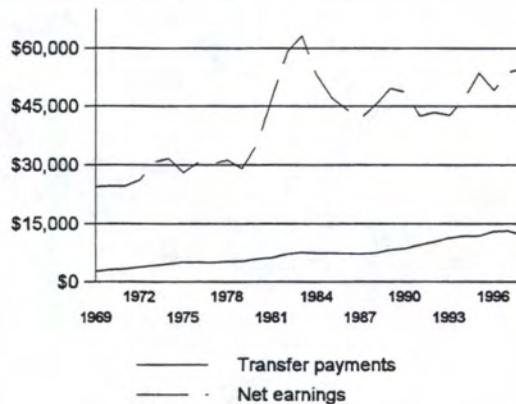


Figure 10 Custer County Income By Type, 1969-98  
(\$1,000)

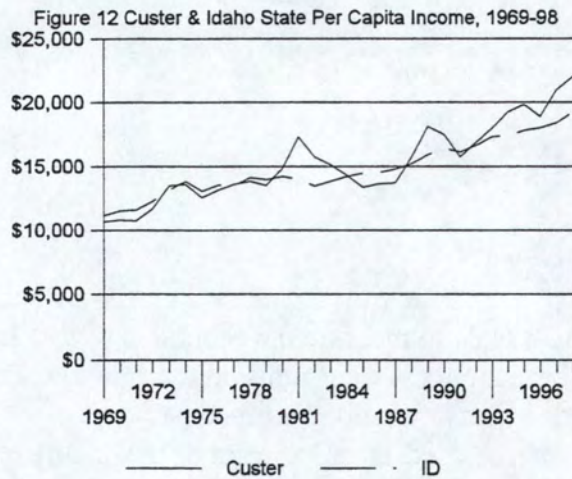
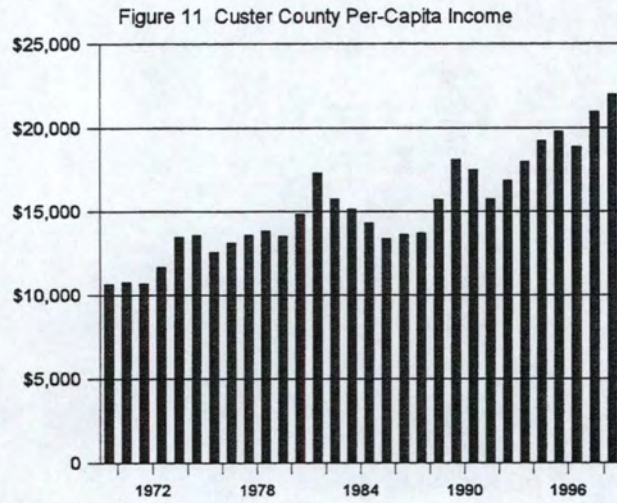


### Individual Per Capita Income

Individual income is used as a scale to measure the economic well-being of a specific area, and the people who reside there. These numbers were adjusted for inflation. Per capita income and average earnings per job were used to measure individual income.

Per capita personal income can be used as an indicator of the quality of consumer markets, and shows the economic well-being of all county residents. Per capita personal income is defined as the total county income divided by the population of the county. The *Per Capita Income, 1969-98* compares Custer County to State of Idaho's values.

- Custer county per capita income has trended upward from 1969 through 1998. There were 6 periods when per capita income actually declined. (Figure 11)
- Per capita income in Custer County was \$10,668 in 1969, and increased 106 percent to \$22,006 in 1998. Idaho had a per capita income increase of 73 percent during the same time period to \$19,316. (Figure 12)

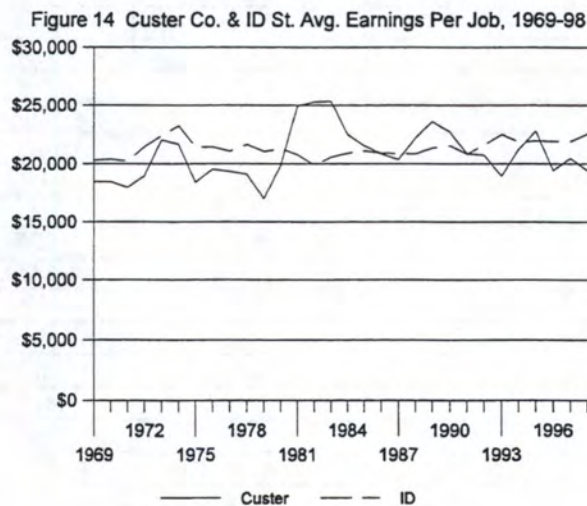
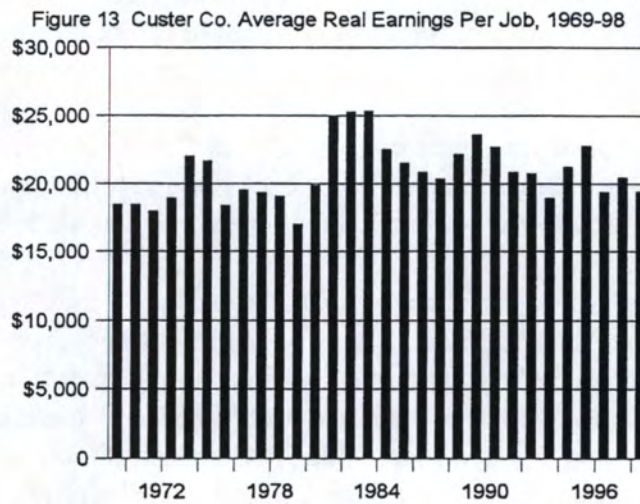




## Average Earnings Per Job

Average earnings per job is estimated by dividing total earnings by total employment. While per capita income considers the entire population, inflation adjusted average earnings per job focuses on the economic well-being of the community's workforce. The following figures summarize average real earnings per job for Custer County from 1969-98 and compare it to the state of Idaho.

- Between 1969-98 average earnings per job for Custer County has shown an inclining trend with a sharp increase in 1983. (Figure 13)
- Between 1969 and 1998, average earnings per job for Custer County has generally followed the State's, but peaked in the mid 80's. (Figure 14)





## Base Case

The mining industry has been an important part of the Custer County economy for many years. The expansions which were planned in the 1970s and implemented in the 1980s gave quite a boost the county's population and income. In fact, Mining and Non-Metallic Minerals sector has provided almost 60 percent of the county's output or \$52 million (Table 1 and Figure 15) and 11 percent of the jobs (Figure 16). Clearly the mining sector provided the major share of the quality paying jobs to residents of Custer county. These mining jobs provide good incomes which in turn support other sectors of the local economy.

## Mining Reduction Scenario

The recent reductions in the mining and non-metallic minerals have reduced employment by 114 jobs. However the sector is still the most important single output source in Custer county. The mining and metallic Minerals sector provided 20% of the county economy's output which was estimated to be \$52 million in 1998 numbers (Figure 17 and Table 1). The mining and metallic sector employment is reduced to slightly less than 6 percent. It provides the same proportions of the output.

Mining has, in the past, been a key industry in the Custer County Economy. Currently it still holds an important roll in the economy, but due to cut backs and layoffs it has become a smaller entity in the economy. The Mining sector's output has remained constant while the employment was reduced by almost half.

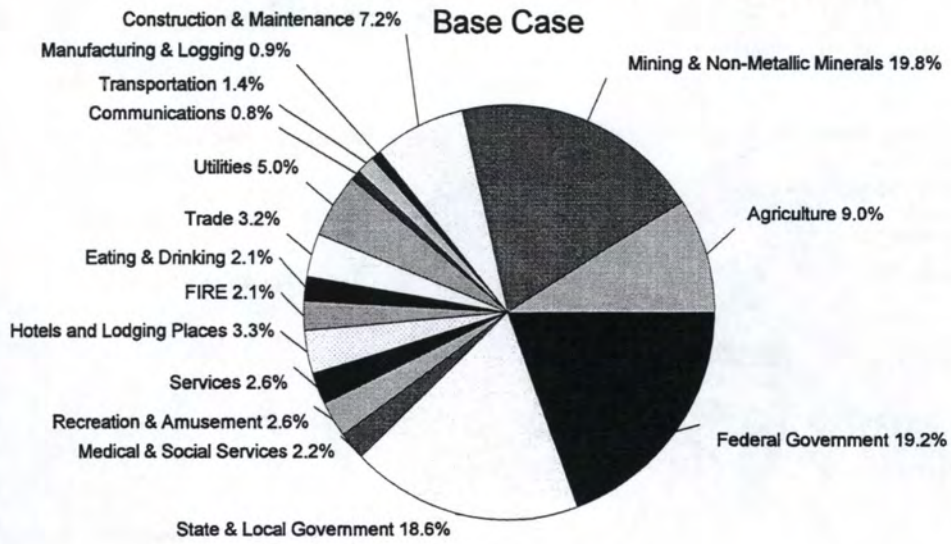
Table 1 and Figure 17 show the change in Custer County's industry output due to the reduction in the Mining & Non-Metallic Minerals sector. Output has not changed but indirect and induced output has been reduced by \$6.8 million. The recent investment and improvements in efficiency permit the same level of mine production with a reduced workforce. The county's workforce would be expected to experience a loss of 226 jobs because of indirect and induced effects of the changes in the mining and metallic sector. This is shown in Figure 18.

Table 1. Custer County Output & Employment

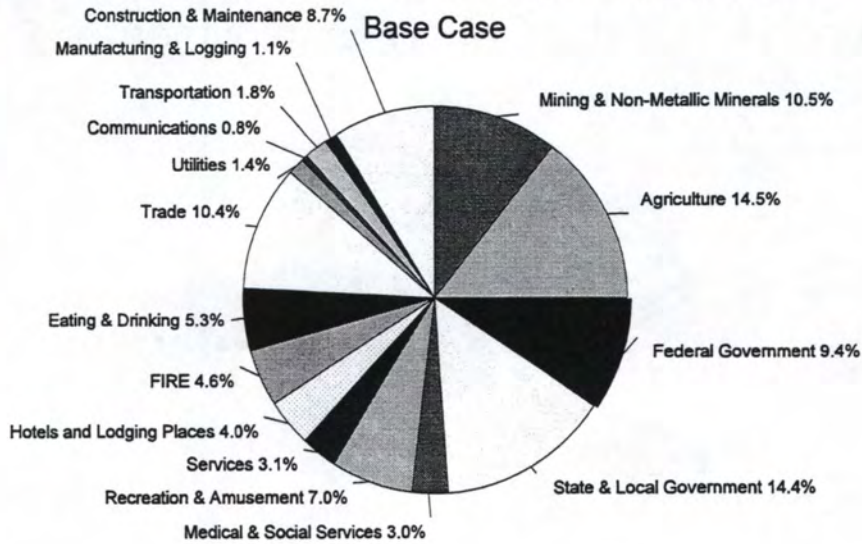
Industry	Industry Output (\$Mill.)		Employment	
	Base Scenario	Mining Scenario	Base Scenario	Mining Scenario
Agriculture	23.7	23.7	314	314
Mining & Non-Metallic Minerals	52.0	52.0	228	114
Construction & Maintenance	18.9	18.9	189	189
Manufacturing & Logging	2.3	2.3	24	24
Transportation	3.8	3.8	40	40
Communications	2.0	2.0	17	17
Utilities	13.1	13.1	30	30
Trade	8.4	8.4	226	226
Eating & Drinking	5.6	5.6	115	115
FIRE	5.5	5.5	99	99
Hotels and Lodging Places	8.8	8.8	86	86
Services	6.8	6.8	68	68
Recreation & Amusement	6.9	6.9	151	151
Medical & Social Services	5.9	5.9	64	64
State & Local Government	48.8	48.8	311	311
Federal Government	50.4	50.4	204	204
Totals	262.7	262.7	2166	2052



### Figure 15. Custer County Output

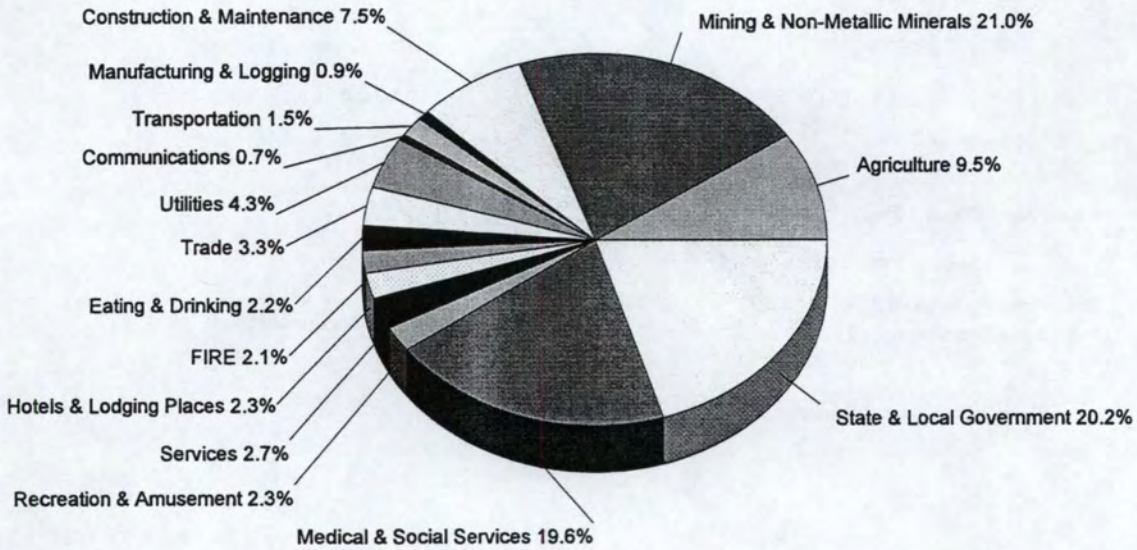


### Figure 16. Custer County Employment



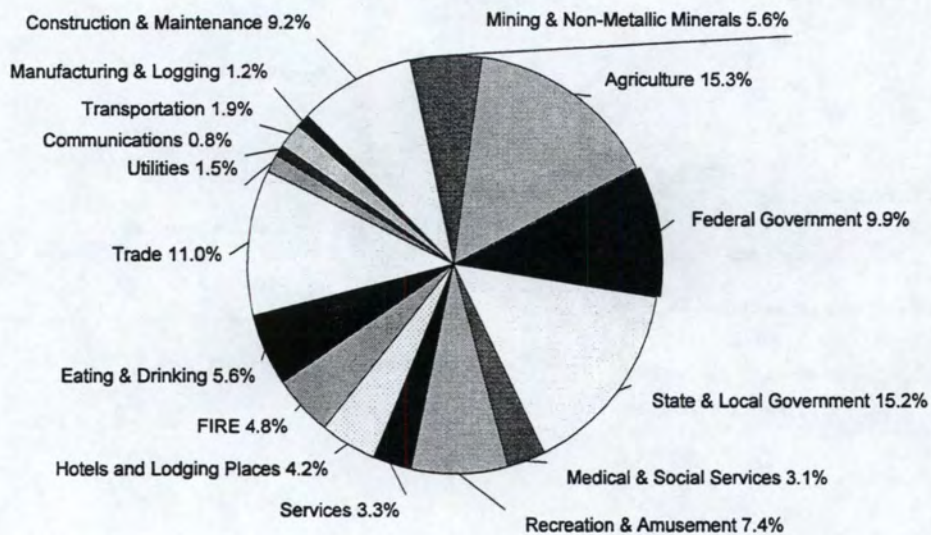
# Figure 17. Custer Co. Output

## Mining Scenario



# Figure 18. Custer County Employment

## Mining Scenario





Multipliers are used to estimate the changes in output which occurs as the result of changes in final demand (Table 2, Columns 1 and 2). Type I multipliers articulate the direct effect of a change. In this case there were no loss of output in the impacted sector. The Type I multipliers were the same for both the Base and Mining reduction scenarios.

Because of the reduction in employment in the mining sector and the increase in non-local proprietors' income, the Type II multiplier is reduced for the mining sector from 1.75 to 1.58. Type II multipliers show the direct effect in the sector being considered and indirect effects on the county economy. For example, a \$1 million change in the mining sector results in a \$1,580,000 change in Custer County's economy. The largest change was in the Mining and Non-Metallic Minerals sector of the Mining Scenario (Table 2, Column 4). The other Type II multipliers changed slightly but the cumulative impact on the county is significant.

Table 2. Custer County Output Multipliers

Description	Type I Multiplier		Type II Multiplier	
	Base Scenario	Mining Scenario	Base Scenario	Mining Scenario
Agriculture	1.08	1.08	1.64	1.63
Mining & Non-Metallic Minerals	1.27	1.27	1.75	1.58
Construction & Maintenance	1.16	1.16	1.76	1.74
Manufacturing & Logging	1.13	1.13	1.65	1.64
Transportation	1.10	1.10	1.76	1.75
Communications	1.13	1.13	1.66	1.65
Utilities	1.03	1.03	1.30	1.29
Trade	1.08	1.08	2.02	2.00
Eating & Drinking	1.30	1.30	2.09	2.08
FIRE	1.09	1.09	1.70	1.69
Hotels and Lodging Places	1.13	1.13	1.59	1.58
Services	1.10	1.10	1.70	1.69
Recreation & Amusement	1.22	1.22	1.97	1.95
Medical & Social Services	1.20	1.20	1.97	1.96

Employment Multipliers are calculated based on changes in final demand. Table 3, Column 1 shows the change in direct employment in each sector for a million dollar change in final demand for that sector. In all cases, the Type II multipliers are larger because they incorporate the direct changes plus the changes in all the sectors linked to the sector under consideration.



Table 3. Custer County Employment Multipliers

	Direct Employment	Final Demand Type I	Final Demand Type II	Employment Multiplier Type I	Employment Multiplier Type II
	Jobs/Mill\$	Chg Jobs/Chg Mill\$FD	Chg Jobs/Chg Mill\$FD	Chg Jobs / Job	Chg Jobs / Job
Agriculture	13.24	17.20	19.30	1.30	1.46
Mining & Non-Metallic Minerals	2.19	5.25	6.19	2.39	2.82
Construction & Maintenance	10.01	12.90	14.81	1.29	1.48
Manufacturing & Logging	10.58	13.08	14.72	1.24	1.39
Transportation	10.45	12.18	14.22	1.17	1.36
Communications	8.59	11.30	13.01	1.32	1.52
Utilities	2.29	2.72	3.52	1.19	1.54
Trade	26.99	28.10	31.06	1.04	1.15
Eating & Drinking	20.49	25.06	27.52	1.22	1.34
FIRE	18.18	20.22	22.21	1.11	1.22
Hotels and Lodging Places	9.79	11.43	12.82	1.17	1.31
Services	9.99	12.57	14.60	1.26	1.46
Recreation & Amusement	22.00	27.77	30.32	1.26	1.38
Medical & Social Services	10.85	13.55	16.02	1.25	1.48
Households			5.59		

The Final Demand, Earnings and Value Added multipliers show how these factors change in final demand (Table 4). Again the Type II multipliers are larger because they incorporate the changes in other sectors as a result changes in the sector(s) being considered.

Table 4. Final Demand, Earnings & Value Added Multipliers

Custer County, Idaho 1998	Final Demand		Earnings			Value Added		
	Type I Multiplier	Type II Multiplier	Direct Earnings	Type I	Type II	Direct Value Added	Type I	Type II
	\$ Chg TGO/\$ Chg FD	\$ Chg TGO/\$ Chg FD	\$/ \$ output	Chg \$ / Chg \$ FD	Chg\$ / Chg \$ FD	\$/ \$ Output	Chg \$ / Chg\$ FD	Chg \$ / Chg \$ FD
Agriculture	1.28	1.98	0.51	0.67	0.74	0.29	0.38	0.42
Mining & Non-Metallic Minerals	1.27	1.58	0.09	0.25	0.28	0.09	0.17	0.19
Construction & Maintenance	1.20	1.84	0.50	0.61	0.68	0.28	0.34	0.38
Manufacturing & Logging	1.17	1.72	0.32	0.42	0.48	0.24	0.29	0.33
Transportation	1.14	1.81	0.48	0.55	0.63	0.32	0.36	0.41
Communications	1.20	1.77	0.67	0.78	0.85	0.25	0.31	0.34
Utilities	1.04	1.31	0.79	0.82	0.85	0.13	0.14	0.16
Trade	1.09	2.07	0.84	0.89	1.00	0.50	0.53	0.60
Eating & Drinking	1.32	2.13	0.50	0.67	0.76	0.34	0.44	0.49
FIRE	1.15	1.81	0.61	0.70	0.77	0.31	0.36	0.40
Hotels and Lodging Places	1.14	1.59	0.46	0.53	0.58	0.21	0.25	0.28
Services	1.21	1.88	0.44	0.55	0.62	0.30	0.36	0.41
Recreation & Amusement	1.39	2.23	0.55	0.75	0.84	0.33	0.46	0.51
Medical & Social Services	1.21	2.02	0.43	0.54	0.63	0.38	0.44	0.50
Households		1.84			0.21			0.13



In Table 5 the direct job losses in the Mining and Non-Metallic minerals sector are shown (114) in Column 2. In Column 3 the jobs lost in other sectors through indirect linkages to the mining sector are shown.

Table 5 shows the direct impact, that is the loss of employment from the mine is 114 jobs when the indirect and induced effects are considered the total job loss is 226 jobs in the county. When multiplied by the output type II multipliers for the Mining & Non-Metallic Minerals sector for the mine reduction scenario, we can determine the indirect and induced impact on the local economy. The sum of the direct and the indirect and induced impacts determines the total impact. Because the assumption of no loss of output with the reduction in labor force, the impact is distributed through the effects. In this case the estimates are \$1.9 million to local sectors plus \$2.6 in import reduction.

Table 5. Effect of Mining Industry Cutbacks on Employment in Custer County

Sectors	Mining & Non-Metallic Minerals Type II	Direct Impacts	Indirect & Induced Impact Mining & Non-Metallic Minerals
	Chg. Jobs/Chg. \$Mill. FD	Jobs	Jobs
Agriculture	0.0156		-15
Mining & Non-Metallic Minerals	1.0000	-114	0
Construction & Maintenance	0.1299		-2
Manufacturing & Logging	0.0147		-3
Transportation	0.0221		-1
Communications	0.0083		-7
Utilities	0.0370		-1
Trade	0.0433		-7
Eating & Drinking	0.0125		-16
FIRE	0.0142		-13
Hotels and Lodging Places	0.0073		-5
Services	0.0387		-3
Recreation & Amusement	0.0044		-15
Medical & Social Services	0.0148		-24
Households	0.3886		0
Sum	1.7514	-114	-112
			-226

Medical and social securities experienced the greatest reduction. The reduced employment in the mining sector and its restructuring affects other sectors of the Custer County Economy. The effects are shown in Table 5.

Table 6 shows the estimated dollar volume reduction as the result of the mining employment reduction. Trade experienced the next greatest volume reduction. This was followed by construction and maintenance, then agriculture. All sectors of the Custer County economy are effected by the mining reduction to some extent.



Table 6. Output by Industry

Sectors	Base Case	Mining Scenario	Difference
Agriculture	\$23,714,201	\$23,473,736	\$-240,465
Mining & Non-Metallic Minerals	\$52,000,000	\$52,000,000	\$0
Construction & Maintenance	\$18,884,734	\$18,654,727	\$-280,007
Manufacturing & Logging	\$2,268,381	\$2,217,995	\$-50,386
Transportation	\$3,828,164	\$3,801,555	\$-26,609
Communications	\$1,980,048	\$1,922,504	\$-57,544
Utilities	\$13,085,072	\$11,260,426	\$-47,646
Trade	\$8,372,639	\$8,084,108	\$-288,531
Eating & Drinking	\$5,613,180	\$5,420,402	\$-192,778
FIRE	\$5,446,572	\$5,258,432	\$-188,140
Hotels and Lodging Places	\$5,780,100	\$5,740,888	\$-39,212
Services	\$6,804,063	\$6,682,875	\$-121,188
Recreation & Amusement	\$6,862,996	\$6,796,538	\$-66,457
Medical & Social Services	\$5,897,427	\$5,540,376	\$-357,051
State & Local Government	\$48,874,384	\$48,874,384	\$0
Federal Government	\$50,438,900		\$0
Households			\$-1,956,014

**Distributions of the impacts.**

The most recent change has been a reduction in mining activity in the county. The result has been 114 persons laid off at the Thompson Creek Mine. The change in mine employment directly effects households. Because many of the things households purchase are imported to the county, the indirect and induced effects on other sectors in the county will be considerably less than the payroll reduction. That is because on imported items, only the local margin or contribution of the local economy is counted. The direct effect of that action is the loss of payroll to the community and resulting reduction of purchases by those directly and indirectly effected by the action. Additional effects to be expected are reduced purchases by other business sectors and households as other sectors and households in the community are effected. There are some delaying effects as unemployment insurance covers some payroll loss in the short run. Generally, school enrollment will remain constant for a short time after the workforce reduction. As persons find alternative employment in other locations, we would expect families to follow and school enrollment to decline. This would place an additional burden on local schools as state aids and economies of scale are reduced. The same loss of economies of scale occurs for other local public services as fewer persons are in the community paying taxes and supporting the needed public infrastructure and services. This report provides a historical perspective of the changes which have occurred in Custer County over the past 30 years. In addition the model provides a means of assessing how the changes in economic activity will be distributed across the economic sectors which make up the local economy.

**Summary**

Despite the major reduction in output by the Mining and Non-Metallic Minerals Sector, it



would still be producing \$52.0 million and thus remain the largest industrial sector in the county. The output remains a significant proportion of total annual output for the economy. Agriculture producers provide the second largest sectorial output in the county at almost 24 million. The businesses which support visitors also support local residents so the effects are difficult to separate because they are spread across several sectors. The sectors which provide most of the services visitors utilize are Eating and Drinking (\$3.5 million), Hotels and Lodging Places (\$4.3 million), and Recreation and Amusement (\$3.4 million). These three sectors combined have a total output of \$11.2. They would not be significantly affected by the reduction in the mining sector in this modeling effort (Table 3).

Because the Mining and Non-Metallic Minerals sector has the highest pay rate of any sector in the County's economy, overall personal income and per capita personal income will probably decline putting additional stress on families and local service providers. That also has implications for demands on local government services. But fixed government services spread across fewer households will decrease state shared revenue while increasing the per capita property tax burden. Property values will likely decline further complicating the issue. When school enrollment declines, state aides decline but the fixed cost of school operation are spread over fewer people. Generally, the need for social services increases as more persons become unemployed.

## Appendix A

### **Custer County Industry Aggregations**

#### **Agriculture:**

The agriculture sector is comprised of all agricultural type operations, including livestock, pasture both irrigated or non-irrigated land, and crops. Also included is agricultural, forestry, and recreation services.

#### **Mining and Non-Metallic Minerals:**

The mining sector in Custer County is one of the largest sectors in the Custer County economy, it is also the sector with the largest employment. Molybdenum is mined in the area and is used as a hardening agent for steel.

#### **Construction and Maintenance:**

This sector includes all the new residential structures as well as their maintenance and repair. It also includes other construction and maintenance, such as utility, farm structures, government facilities, highways and streets as well as their maintenance and repair.

#### **Manufacturing and Logging:**

This is a smaller sector in the county's economy which includes logging companies, mills, and other such related businesses. Small scale manufacturing may be included in this sector.

#### **Transportation:**

US highway 93, State highways 21 and 75, and other unimproved roads cross though the county's borders.

#### **Communication:**

The phone communication, broad band service and cell phones are large components of in-county communication. It also includes local newspapers and radio station.

#### **Utilities:**

The utilities include city sewer and water, and the electric company.

#### **Trade:**

This sector includes grocery, clothing, furniture, feed, lumber or home centers, and other such retail stores. Also included are gasoline or fueling stations and auto dealers.

#### **Eating and Drinking:**

There are eating and drinking establishments in every community in the county. These range from simple fast food locals to those with more extensive menus. Most employ local labor and are locally owned so proprietors' incomes remain within the county. Supplies for these businesses must be imported to the county.



**FIRE (Finance, Insurance, and Real Estate):**

There are financial services available in the county as well as insurance and real estate agents. These are small offices connected to larger national firms, however some real estate offices are locally owned.

**Hotels and Lodging Places:**

This includes all lodging facilities, including bed and breakfasts and RV parks.

**Services:**

Professional services such as lawyers, accountants and other such services are aggregated in this sector as are the non-professional services. Non-professional services include electricians, beauty or barber shops, day cares, storage facilities, and other such services. These are generally locally owned and do not employ many persons.

**Recreation and Amusement:**

This sector includes movie theaters, bowling alleys, pool halls, and any recreation services.

**Medical and Social Services:**

Doctors offices, hospitals, nursing facilities, job training services, religious organizations and non profit organizations

**Proprietary Income:**

Proprietary income is the return to owners' efforts for operating a business. This becomes large in profitable times and can become zero in difficult times. The actual residential location is important because that is where the income is attributed.

**Other Property Income:**

Includes corporate income, corporate transfer payments, interest and rental income.

**Indirect Business Taxes:**

Covers sales, excise, and value added taxes as well as customers duties. These are taxes paid during normal operation of industry. Other types of taxes such as income and property are paid out of income, therefore exogenous to the I/O model.

**Households:**

The consumers which purchase goods and services created by the economy. They are also the recipients of wages which create the purchasing power.

**Federal Government:**

Sales are goods or services that have been produced or stockpiled by governmental units. Purchases are expenditures for goods and services to provide federal government services.

**State/Local Government:**



Sales are both education and non-education goods and services produced or stockpiled and sold. Purchases are expenditures for goods and services required to provide government services or goods.

**Enterprises/Corporations/Capital/Inventory:**

Organizations which produce goods or services for government or private entities. Capital goods purchased for formation of private capital. Inventory is the value of goods not dispersed or purchases which are additions to inventory.

**Exports:**

Commodities or services sold outside the region being analyzed or to non-residents visiting the region.



## Introduction to Appendices B and C

In viewing and understanding input/output models a couple of general things are important to remember. First, each column is a production function showing what the sector being examined purchases from other sectors in the unit being modeled. What is not available locally is imported. In the first column of Appendix B, agriculture's total purchases are \$23,714,201. Of that amount \$3,821,456 is purchased from other agricultural sectors. Agriculture purchases \$84,903 in construction services and \$162,337 in Finance, Insurance, and Real Estate (FIRE). Imports to the county for agriculture are valued at \$5,792,190. The same example holds for all other sectors of the Custer County Economy.

Sales for the agriculture sector are presented in the row. In our example, agriculture sells \$183,913 to the Construction and Maintenance sector. Exports are \$14,667,454.

### Appendix B

Table 7. Custer County I/O Gross Transactions

	Agriculture	Mining & Non-Metallic Minerals	Construction & Maintenance	Manufacturing & Logging	Transportation	Communications	Utilities
Agriculture	\$3,821,456	\$0	\$183,913	\$13,088	\$1,268	\$832	\$354
Mining & Non-Metallic Minerals	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Construction & Maintenance	\$84,903	\$5,848,382	\$631,118	\$13,864	\$30,641	\$25,053	\$175,006
Manufacturing & Logging	\$151,561	\$436,367	\$411,391	\$89,207	\$12,419	\$6,383	\$9,382
Transportation	\$119,266	\$956,000	\$112,358	\$18,398	\$125,919	\$1,426	\$22,494
Communications	\$43,553	\$157,248	\$99,003	\$9,576	\$32,452	\$124,603	\$13,358
Utilities	\$67,018	\$1,767,650	\$20,715	\$14,172	\$13,746	\$1,521	\$101,839
Trade	\$461,359	\$1,341,477	\$564,404	\$75,763	\$35,115	\$4,175	\$16,511
Eating & Drinking	\$40,233	\$200,201	\$24,223	\$9,283	\$14,253	\$3,163	\$7,309
FIRE	\$162,337	\$0	\$458,759	\$17,412	\$37,252	\$11,529	\$37,436
Hotels and Lodging Places	\$55,964	\$239,621	\$36,354	\$11,635	\$12,143	\$4,481	\$10,458
Services	\$362,339	\$1,043,484	\$723,685	\$64,693	\$142,781	\$56,970	\$73,039
Recreation & Amusement	\$14,265	\$23,431	\$4,507	\$1,273	\$1,787	\$83,787	\$1,620
Medical & Social Services	\$12,350	\$14,322	\$1,983	\$2,405	\$1,247	\$451	\$897
Employee Compensation	\$3,097,168	\$4,560,000	\$3,423,303	\$410,984	\$1,085,242	\$442,612	\$1,084,531
Proprietary Income, Local	\$3,753,982	\$100,000	\$1,804,475	\$127,714	\$136,563	\$45,302	\$649,991
Proprietary income, Non-Local	\$200,000	\$13,460,000	\$20,000	\$0	\$0	\$0	\$1,000,000
Other Property Income	\$4,067,402	\$0	\$3,447,206	\$176,401	\$446,372	\$711,512	\$6,976,683
Indirect Business Taxes	\$1,265,266	\$211,166	\$704,975	\$19,866	\$154,113	\$125,536	\$1,689,138
Households	\$11,196	\$75,815	\$11,300	\$1,751	\$9,312	\$126	\$1,666
Federal Gov.	\$64,978	\$63,028	\$37,448	\$4,638	\$5,341	\$4,445	\$11,243
State & Local Gov.	\$36,270	\$211,001	\$30,225	\$8,308	\$11,420	\$3,156	\$12,141
Enterprises, Capital & Inventory Add & Deletions	\$29,145	\$223,823	\$34,447	\$4,788	\$2,290	\$266	\$4,089
Imports	\$5,792,190	\$21,066,984	\$6,098,941	\$1,173,163	\$1,516,486	\$322,721	\$1,185,889
Column Total	\$23,714,201	\$52,000,000	\$18,884,734	\$2,268,381	\$3,828,164	\$1,980,048	\$13,085,072



	Trade	Eating & Drinking	FIRE	Hotels and Lodging Places	Services	Recreation & Amusement	Medical & Social Services	Employee Compensation	Proprietary Income Local
Agriculture	\$6,134	\$816,722	\$13,413	\$25,664	\$16,337	\$33,253	\$41,602	\$0	\$0
Mining & Non-Metallic Minerals	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Construction & Maintenance	\$24,245	\$30,033	\$125,974	\$129,064	\$23,330	\$29,280	\$68,155	\$0	\$0
Manufacturing & Logging	\$23,150	\$13,308	\$5,675	\$21,786	\$64,936	\$9,579	\$58,125	\$0	\$0
Transportation	\$11,544	\$16,573	\$8,028	\$50,724	\$21,570	\$910,000	\$14,746	\$0	\$0
Communications	\$68,607	\$21,707	\$41,481	\$74,212	\$117,137	\$29,558	\$77,693	\$0	\$0
Utilities	\$19,683	\$39,287	\$20,632	\$79,956	\$16,724	\$16,839	\$23,488	\$0	\$0
Trade	\$47,287	\$107,507	\$5,297	\$20,919	\$59,568	\$21,558	\$50,902	\$0	\$0
Eating & Drinking	\$16,321	\$61,825	\$12,805	\$24,743	\$35,686	\$10,228	\$40,853	\$0	\$0
FIRE	\$85,991	\$86,414	\$285,072	\$228,903	\$144,820	\$73,049	\$208,973	\$0	\$0
Hotels and Lodging Places	\$22,881	\$20,233	\$21,590	\$29,619	\$46,273	\$12,562	\$34,655	\$0	\$0
Services	\$284,016	\$147,112	\$159,813	\$316,229	\$607,702	\$178,376	\$344,832	\$0	\$0
Recreation & Amusement	\$8,361	\$72,667	\$2,668	\$4,731	\$24,494	\$802,192	\$12,025	\$0	\$0
Medical & Social Services	\$3,313	\$5,643	\$1,971	\$3,890	\$8,881	\$2,504	\$50,190	\$0	\$0
Employee Compensation	\$3,640,710	\$1,817,980	\$1,206,996	\$1,438,299	\$1,341,633	\$2,182,032	\$1,786,474	\$0	\$0
Proprietary Income, Local	\$576,142	\$102,063	\$487,139	\$389,934	\$707,453	\$101,864	\$456,345	\$0	\$0
Proprietary income, Non-Local	\$100,000	\$60,000	\$0	\$140,000	\$500,000	\$152,797	\$0	\$0	\$0
Other Property Income	\$1,428,825	\$501,974	\$1,229,714	\$1,534,246	\$841,339	\$1,162,467	\$251,535	\$0	\$0
Indirect Business Taxes	\$1,386,411	\$359,226	\$423,554	\$668,795	\$110,631	\$314,683	\$61,819	\$0	\$0
Households	\$1,091	\$1,783	\$600	\$3,748	\$1,888	\$472	\$1,341	\$35,931,964	\$1,728,173
Federal Gov.	\$38,508	\$23,610	\$56,499	\$38,390	\$72,568	\$20,137	\$111,721	\$5,146,833	\$351,130
State & Local Gov.	\$11,472	\$13,821	\$13,369	\$26,541	\$24,963	\$14,890	\$29,033	\$146,045	\$0
Enterprises, Capital & Inventory Add & Deletions	\$2,817	\$6,618	\$335	\$1,311	\$3,709	\$12,259	\$3,188	\$17,160	\$0
Imports	\$565,133	\$1,287,075	\$1,323,947	\$3,528,397	\$2,012,420	\$772,417	\$2,169,732	\$0	\$7,343,275
Column Total	\$8,372,639	\$5,613,180	\$5,446,572	\$8,780,100	\$6,804,063	\$6,862,996	\$5,897,427	\$41,242,003	\$9,422,578



	Proprietary Income/Non- local	Other Property Income	Indirect Business Taxes	Households	Federal Gov.	State & Local Gov.	Enterprises, Capital & Inventory Add & Deletions	Exports	Row Totals (\$)
Agriculture	\$0	\$0	\$0	\$3,888,392	\$3,143	\$109,136	\$72,041	\$14,667,454	23,714,201
Mining & Non- Metallic Minerals	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$52,000,000	52,000,000
Construction & Maintenance	\$0	\$0	\$0	\$4,527,802	\$8,936	\$1,615,497	\$5,490,389	\$3,063	18,884,734
Manufacturing & Logging	\$0	\$0	\$0	\$814,752	\$4,258	\$58,070	\$273	\$77,759	2,268,381
Transportation	\$0	\$0	\$0	\$430,280	\$14,055	\$37,675	\$34,659	\$922,450	3,828,165
Communicatio ns	\$0	\$0	\$0	\$930,510	\$3,938	\$72,136	\$28,097	\$35,180	1,980,048
Utilities	\$0	\$0	\$0	\$770,445	\$4,134	\$136,664	\$1,363	\$9,969,195	13,085,072
Trade	\$0	\$0	\$0	\$4,665,633	\$3,344	\$57,017	\$347,259	\$487,546	8,372,639
Eating & Drinking	\$0	\$0	\$0	\$3,117,277	\$1,119	\$42,635	\$407	\$1,950,616	5,613,180
FIRE	\$0	\$0	\$0	\$3,042,282	\$7,014	\$148,468	\$60,470	\$350,391	5,446,572
Hotels and Lodging Places	\$0	\$0	\$0	\$634,070	\$569	\$41,327	\$836	\$7,544,829	8,780,101
Services	\$0	\$0	\$0	\$1,959,654	\$21,290	\$281,571	\$12,678	\$23,798	6,804,063
Recreation & Amusement	\$0	\$0	\$0	\$1,074,637	\$10	\$11,205	\$6	\$4,719,331	6,862,996
Medical & Social Services	\$0	\$0	\$0	\$5,773,611	\$156	\$13,552	\$18	\$42	5,897,427
Employee Compensation	\$0	\$0	\$0	\$0	\$6,658,578	\$7,461,359	\$0	\$0	46,197,902
Proprietary Income, Local	\$0	\$0	\$0	\$0	\$0	\$3,743	\$0	\$0	9,442,712
Proprietary income, Non- Local	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	11,072,797
Other Property Income	\$0	\$0	\$0	\$0	\$1,117,677	\$1,290,436	\$0	\$0	25,183,787
Indirect Business Taxes	\$0	\$0	\$0	\$0	\$0	\$359	\$0	\$0	7,495,537
Households	\$8,900,000	\$11,117,271	\$0	\$3,163,374	\$13,377,479	\$6,696,678	\$17,774,424	\$7,796,670	106,608,122
Federal Gov.	\$200,000	\$15,966	\$1,019,363	\$8,660,286	\$9,748,310	\$51,177	\$24,308,896	\$356,852	50,411,367
State & Local Gov.	\$0	\$97,760	\$6,519,559	\$6,852,537	\$18,422,303	\$14,749,522	\$932,244	\$605,244	48,771,823
Enterprises, Capital & Inventory Add & Deletions	\$500,000	\$19,908,046	\$0	\$9,635,309	\$329,042	\$11,654,006	\$1,333,371	\$12,603,471	56,309,487
Imports	\$1,442,596	(\$6,185,024)	(\$105,583)	\$46,667,178	\$713,543	\$4,342,151	\$5,512,719	\$0	108,546,350
Column Total	\$11,042,596	\$24,954,019	\$7,433,338	\$106,608,029	\$50,438,900	\$48,874,384	\$55,910,150	\$114,113,890	



Appendix C

Table 8. Custer County I/O Gross Transactions for Mining Reduction Scenario

	Agriculture	Mining & Non-Metallic Minerals	Construction & Maintenance	Manufacturing & Logging	Transportation	Communications
Agriculture	\$3,821,456	\$0	\$183,913	\$13,088	\$1,268	\$832
Mining & Non-Metallic Minerals	\$0	\$0	\$0	\$0	\$0	\$0
Construction & Maintenance	\$84,903	\$5,848,382	\$631,118	\$13,864	\$30,641	\$25,053
Manufacturing & Logging	\$151,561	\$436,367	\$411,391	\$89,207	\$12,419	\$6,383
Transportation	\$119,266	\$956,000	\$112,358	\$18,398	\$125,919	\$1,426
Communications	\$43,553	\$157,248	\$99,003	\$9,576	\$32,452	\$124,603
Utilities	\$67,018	\$1,767,650	\$20,715	\$14,172	\$13,746	\$1,521
Trade	\$461,359	\$1,341,477	\$564,404	\$75,763	\$35,115	\$4,175
Eating & Drinking	\$40,233	\$200,201	\$24,223	\$9,283	\$14,253	\$3,163
FIRE	\$162,337	\$0	\$458,759	\$17,412	\$37,252	\$11,529
Hotels and Lodging Places	\$55,964	\$239,621	\$36,354	\$11,635	\$12,143	\$4,481
Services	\$362,339	\$1,043,484	\$723,685	\$64,693	\$142,781	\$56,970
Recreation & Amusement	\$14,265	\$23,431	\$4,507	\$1,273	\$1,787	\$83,787
Medical & Social Services	\$12,350	\$14,322	\$1,983	\$2,405	\$1,247	\$451
Households	\$6,862,346	\$4,735,815	\$5,239,078	\$540,449	\$1,231,117	\$488,041
Proprietary Income, Non-local	\$200,000	\$13,460,000	\$20,000	\$0	\$0	\$0
Other Property Income	\$4,067,402	\$0	\$3,447,206	\$176,401	\$446,372	\$711,512
Indirect Business Taxes	\$1,265,266	\$211,166	\$704,975	\$19,866	\$154,113	\$125,536
Federal Gov.	\$64,978	\$63,028	\$37,448	\$4,638	\$5,341	\$4,445
State & Local Gov.	\$36,270	\$211,001	\$30,225	\$8,308	\$11,420	\$3,156
Enterprises, Capital & Inventory Add & Deletions	\$29,145	\$223,823	\$34,447	\$4,788	\$2,290	\$266
Imports	\$5,792,190	\$21,066,984	\$6,098,941	\$1,173,163	\$1,516,486	\$322,721
Column Total	\$23,714,201	\$52,000,000	\$18,884,734	\$2,268,381	\$3,828,164	\$1,980,048



	Utilities	Trade	Eating & Drinking	FIRE	Hotels and Lodging Places	Services
Agriculture	\$354	\$6,134	\$816,722	\$13,413	\$25,664	\$16,337
Mining & Non-Metallic Minerals	\$0	\$0	\$0	\$0	\$0	\$0
Construction & Maintenance	\$175,006	\$24,245	\$30,033	\$125,974	\$129,064	\$23,330
Manufacturing & Logging	\$9,382	\$23,150	\$13,308	\$5,675	\$21,786	\$64,936
Transportation	\$22,494	\$11,544	\$16,573	\$8,028	\$50,724	\$21,570
Communications	\$13,358	\$68,607	\$21,707	\$41,481	\$74,212	\$117,137
Utilities	\$101,839	\$19,683	\$39,287	\$20,632	\$79,956	\$16,724
Trade	\$16,511	\$47,287	\$107,507	\$5,297	\$20,919	\$59,568
Eating & Drinking	\$7,309	\$16,321	\$61,825	\$12,805	\$24,743	\$35,686
FIRE	\$37,436	\$85,991	\$86,414	\$285,072	\$228,903	\$144,820
Hotels and Lodging Places	\$10,458	\$22,881	\$20,233	\$21,590	\$29,619	\$46,273
Services	\$73,039	\$284,016	\$147,112	\$159,813	\$316,229	\$607,702
Recreation & Amusement	\$1,620	\$8,361	\$72,667	\$2,668	\$4,731	\$24,494
Medical & Social Services	\$897	\$3,313	\$5,643	\$1,971	\$3,890	\$8,881
Households	\$1,736,188	\$4,217,943	\$1,921,826	\$1,694,735	\$1,831,981	\$2,050,975
Proprietary Income, Non-local	\$1,000,000	\$100,000	\$60,000	\$0	\$140,000	\$500,000
Other Property Income	\$6,976,683	\$1,428,825	\$501,974	\$1,229,714	\$1,534,246	\$841,339
Indirect Business Taxes	\$1,689,138	\$1,386,411	\$359,226	\$423,554	\$668,795	\$110,631
Federal Gov.	\$11,243	\$38,508	\$23,610	\$56,499	\$38,390	\$72,568
State & Local Gov.	\$12,141	\$11,472	\$13,821	\$13,369	\$26,541	\$24,963
Enterprises, Capital & Inventory Add & Deletions	\$4,089	\$2,817	\$6,618	\$335	\$1,311	\$3,709
Imports	\$1,185,889	\$565,133	\$1,287,075	\$1,323,947	\$3,528,397	\$2,012,420
Column Total	\$13,085,072	\$8,372,639	\$5,613,180	\$5,446,572	\$8,780,100	\$6,804,063



	Recreation & Amusement	Medical & Social Services	Households	Proprietary Income/Non-local	Other Property Income	Indirect Business Taxes
Agriculture	\$33,253	\$41,602	\$3,647,926	\$0	\$0	\$0
Mining & Non-Metallic Minerals	\$0	\$0	\$0	\$0	\$0	\$0
Construction & Maintenance	\$29,280	\$68,155	\$4,247,794	\$0	\$0	\$0
Manufacturing & Logging	\$9,579	\$58,125	\$764,367	\$0	\$0	\$0
Transportation	\$910,000	\$14,746	\$403,671	\$0	\$0	\$0
Communications	\$29,558	\$77,693	\$872,965	\$0	\$0	\$0
Utilities	\$16,839	\$23,488	\$722,799	\$0	\$0	\$0
Trade	\$21,558	\$50,902	\$4,377,102	\$0	\$0	\$0
Eating & Drinking	\$10,228	\$40,853	\$2,924,499	\$0	\$0	\$0
FIRE	\$73,049	\$208,973	\$2,854,142	\$0	\$0	\$0
Hotels and Lodging Places	\$12,562	\$34,655	\$594,858	\$0	\$0	\$0
Services	\$178,376	\$344,832	\$1,838,465	\$0	\$0	\$0
Recreation & Amusement	\$802,192	\$12,025	\$1,008,180	\$0	\$0	\$0
Medical & Social Services	\$2,504	\$50,190	\$5,416,561	\$0	\$0	\$0
Households	\$2,284,368	\$2,244,161	\$32,373,387	\$8,900,000	\$11,117,271	\$0
Proprietary Income, Non-local	\$152,797	\$0	\$0	\$0	\$0	\$0
Other Property Income	\$1,162,467	\$251,535	\$0	\$0	\$0	\$0
Indirect Business Taxes	\$314,683	\$61,819	\$0	\$0	\$0	\$0
Federal Gov.	\$20,137	\$111,721	\$13,520,043	\$200,000	\$15,966	\$1,019,363
State & Local Gov.	\$14,890	\$29,033	\$6,980,472	\$0	\$97,760	\$6,519,559
Enterprises, Capital & Inventory Add & Deletions	\$12,259	\$3,188	\$9,650,340	\$500,000	\$19,908,046	\$0
Imports	\$772,417	\$2,169,732	\$46,866,603	\$1,442,596	(\$5,955,256)	(\$43,384)
Column Total	\$6,862,996	\$5,897,427	\$139,064,175	\$11,042,596	\$25,183,787	\$7,495,537



	Federal Gov.	State & Local Gov.	Enterprises, Capital & Inventory Add & Deletions	Exports	Row Total
Agriculture	\$3,143	\$109,136	\$72,041	\$14,907,918	\$23,714,201
Mining & Non-Metallic Minerals	\$0	\$0	\$0	\$52,000,000	\$52,000,000
Construction & Maintenance	\$8,936	\$1,615,497	\$5,490,389	\$283,070	\$18,884,734
Manufacturing & Logging	\$4,258	\$58,070	\$273	\$128,145	\$2,268,381
Transportation	\$14,055	\$37,675	\$34,659	\$949,059	\$3,828,164
Communications	\$3,938	\$72,136	\$28,097	\$92,724	\$1,980,048
Utilities	\$4,134	\$136,664	\$1,363	\$10,016,841	\$13,085,072
Trade	\$3,344	\$57,017	\$347,259	\$776,077	\$8,372,639
Eating & Drinking	\$1,119	\$42,635	\$407	\$2,143,394	\$5,613,180
FIRE	\$7,014	\$148,468	\$60,470	\$538,531	\$5,446,572
Hotels and Lodging Places	\$569	\$41,327	\$836	\$7,584,041	\$8,780,100
Services	\$21,290	\$281,571	\$12,678	\$144,987	\$6,804,063
Recreation & Amusement	\$10	\$11,205	\$6	\$4,785,788	\$6,862,996
Medical & Social Services	\$156	\$13,552	\$18	\$357,093	\$5,897,427
Households	\$20,036,058	\$14,161,780	\$17,774,424	\$7,796,670	\$149,238,613
Proprietary Income, Non-local	\$0	\$0	\$0	\$0	\$15,632,797
Other Property Income	\$1,117,677	\$1,290,436	\$0	\$0	\$25,183,787
Indirect Business Taxes	\$0	\$359	\$0	\$0	\$7,495,537
Federal Gov.	\$9,748,310	\$51,177	\$24,308,896	\$356,852	\$49,773,160
State & Local Gov.	\$18,422,303	\$14,749,522	\$932,244	\$605,244	\$48,753,713
Enterprises, Capital & Inventory Add & Deletions	\$329,042	\$11,654,006	\$1,333,371	\$12,603,471	\$56,307,359
Imports	\$713,543	\$4,342,151	\$5,512,719	\$0	\$101,694,467
Column Total	\$50,438,900	\$48,874,384	\$55,910,150	\$116,069,905	



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Bureau Economic Analysis, US Department of Commerce

US Bureau of Census

<http://NIIP.wsu.edu/>