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Trends in the Mining Industry State of Nevada and Eureka County

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Natural resources have played a significant role in community economic development. Resource endowment theory argues that economic development in a region depends on the products produced from these natural resources. The mineral industry and its impact on numerous rural Nevada economies exemplify resource endowment theory and how resources greatly impact rural Nevada and the state.

The mineral industry has been an important player in Nevada's statehood and economic structure. From 1860 to 1890, the Comstock Lode in Virginia City initiated the state's mineral industry growth and many historians acknowledge the Comstock Lode for helping the territory of Nevada to become the state of Nevada. During the turn of the century, gold and silver mining towns, such as Tonopah and Goldfield, boomed along with the copper mining towns of Ely, Ruth and McGill. The second renaissance of Nevada's mineral industry occurred in the 1980's with the development of numerous large-scale gold mines operating in central, northern and eastern Nevada. There was also a revival of

copper mining in Ely in 1996 after two decades of inactivity.

Although Nevada's mining industry faces numerous technical and regulatory challenges, the industry has developed a large, efficient and economically viable capital base that is fundamentally sound and sustainable well into the future. This capital base has been built through the investment of over \$10 billion in plant, equipment and exploration since 1980. This investment has primarily come from U.S. companies, although as the industry has attracted worldwide attention, it has attracted investment capital from all over the world.

Largely because of this investment and favorable geology, Nevada has emerged as the third largest gold producer in the world behind South Africa and Australia during the past decade (Table 1). With 1997 gold production of just over 7.8 million ounces, Nevada accounts for 69 percent of U. S. production and approximately 10 percent of world production.

**Table 1.
Proportionate Share of World Production
of Gold, 1997**

Areas	Proportionate Share
South Africa	20%
Australia	13%
State of Nevada	10%
Canada	7%
China	6%
Rest of U.S.	4%
Other Areas	40%
TOTAL	100%

Impacts to Nevada Economy

In 1997, the mining industry in the state of Nevada accounted for 14,663 jobs. The mining industry payrolls were \$731,753,000 with an average salary of \$49,905. The average salary for employees in the metal mining industry is \$51,268 while employees in the other mining industry realize annual salaries of \$38,900. In comparison, average metal mining employee salaries are approximately twice the state average salary of \$28,671 (State of Nevada Department of Employment, Training and Rehabilitation, 1998).

To derive the state's total economic impacts of the mineral industry, the IMPLAN input-output microcomputer software was used (Minnesota IMPLAN Group Inc. 1997).

Input-output derives the interrelationships of industries in an economy. That is, input-output models estimate total employment and income impacts from changes in a given economic sector's activity. Therefore the state's total economic activity generated from 14,663 jobs in the state's mining industry is estimated to be \$5.7 billion. Total state employment and personal income impacts from the 14,663 jobs in the mining industry is 41,400 jobs and \$1.8 billion, respectively.

Impacts to Eureka County

Table 2 shows the distribution of mining industry employment throughout Nevada's 17 counties. From Table 2, only 1.82 percent of total state employment is in the mining

industry. This compares to the service industry in the state, which has 41.84 percent proportionate share of total. However, when examining individual Nevada counties, the importance of the mining industry is not uniform.

In relation to total state mining industry employment, Eureka County has the highest proportionate share with 26.63 percent of the state's total. The counties where the major gold mining operations occur (Elko, Eureka, Humboldt, Lander and Pershing Counties) make up approximately 65 percent of total state mineral employment.

Table 2 also shows the importance of mining industry employment to individual county economies. Approximately 88 percent of total Eureka County employment is in this sector. Nine of Nevada's seventeen counties (Esmeralda, Eureka, Humboldt, Lander, Mineral, Nye, Pershing, Storey and White Pine) have proportionate shares of total county employment above ten percent in the mining industry.

In 1997, the Eureka County mining industry reported 3,905 jobs. Total Eureka County economic activity attributed to the 3,905 jobs in the mineral industry was estimated to be \$1.2 billion. Direct mining industry employment of 3,905 jobs created an additional 1,905 jobs in the county. Total Eureka County employment attributable to the activities of the local mining sector is 5,807 jobs. Total Eureka County household income generated from activities of the local mining industry was estimated to be \$338.3 million.

These multiplier results show the importance of the Eureka County mining industry to the local economy. Changes in production caused by declining gold prices or regulatory changes can have significant impacts on the Eureka County economy.

State and Local Taxes Paid by Mineral Industry
Total state and local taxes paid by the mining industry increased slightly from \$123.3 million in 1996 to \$125.5 million in 1997. (Dobra 1998). The increase in 1997 followed a decrease in 1996, which had declined by 15%

from 1995 tax values of \$145.6 million. Total taxes paid by the mineral industry from 1987 to 1997, were approximately \$1,013 million.

Increases in taxes paid from 1996 to 1997 were due to three factors. First, the largest tax paid by the mining industry is the sales and use tax. This is assessed on the purchases of supplies and equipment associated with capital development expenditures. During 1997, sales and use tax collections increased slightly as development work at several properties started before mineral price declines. Approximately 45% of sales and use tax were paid in Eureka County where Barrick and Newmont were completing development work on the Carlin trend and Homestake was completing the Ruby Hill mine near the community of Eureka. Approximately 21 % of sales and use tax collections were in Humboldt County where Newmont and Getchell were completing planned property expansions. Other counties receiving significant sales and use tax revenues from the mining industry were Elko, Lander, Nye, Mineral and White Pine Counties, where receipts ranged between one and eight million dollars.

Mineral Industry Outlook

Clearly the most significant industry development in 1997 and the first half of 1998 has been the decline of gold prices below \$300 per ounce. Low mineral prices have forced operators to revise mine plans and operation procedures to reduce average costs. Cost cutting measures in 1997 managed to reduce weighted average cash production costs in Nevada from \$229 per ounce in 1996 to \$214 per ounce in 1997. Further cost reductions are anticipated for 1998.

The state's gold mines have the lowest costs in the world (Dobra 1998). Even these low costs may not be sufficient to induce further investment in exploration and development. Current profitability levels are quite low because of low prices. If these trends continue, the result will likely be shortened mining operations with higher operation costs.

Additional issues may influence gold production in the state of Nevada:

1. Threats of bullion sales by European Central Bank aimed at meeting entrance requirements for the European Monetary Union (EMU) which will create a common currency in Europe.
2. The threat of the Swiss selling half of their central bank holdings, approximately 1,300 metric tons, to create a humanitarian fund.
3. Asian financial problems in late 1997 and 1998 have provided additional bad news for gold. Over the past decade Asian consumers have routinely purchased over two-thirds of world gold output in the form of bullion and bullion jewelry. However, because of currency devaluations in countries that have traditionally been large consumers, gold demand has suffered.
4. Nevada Division of Minerals (Driesner 1998) estimated exploration expenditures in Nevada would decline by 32 percent in 1998. Budgeted expenditures in Nevada declined from \$139 million in 1997 to \$94 million in 1998. Declines in exploration activity may predict lower mine production in the future.
5. Potential changes in U.S. mining laws and public lands regulations may impact production levels of gold mining operations

While 1997 was challenging to the mining industry in the State and Eureka County, there are a number of positive characteristics which should bode well for mining, especially gold mining, with even a modest rebound in commodity prices. The State and Eureka County have geologic conditions that are favorable for outstanding mineral deposits; the industry has developed a skilled workforce; infrastructure and support services are already in place and the State and Eureka County have maintained a reasonable business environment where mining operations can flourish.

REFERENCES

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2. Driesner, D. "Fourth Annual Exploration Survey." Nevada Department of Business and Industry, Division of Minerals, Carson City, Nevada, 1998.
3. Minnesota IMPLAN Group, Inc. "IMPLAN Pro." Minnesota IMPLAN Group, Inc.: Stillwater, Minnesota. 1997.
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Table 2.
Nevada County Employment, County Proportionate Share of
Total State Mining Employment and Proportionate
Share of County Mining Employment, 1997

County	Mining Employment (number)	% of Total State Mining Employment (%)	% Mining Employment of Total County Employment (%)
Carson City	9	0.06	0.04
Churchill	13	0.09	0.18
Clark	522	3.56	0.10
Douglas	1,444	9.85	8.07
Elko	1,305	8.90	7.07
Esmeralda	137	0.94	45.87
Eureka	3,905	26.63	87.97
Humboldt	2,242	15.29	28.65
Lander	1,180	8.05	47.64
Lincoln	12	0.08	0.89
Lyon	174	1.19	2.48
Mineral	289	1.97	13.41
Nye	1,247	8.50	15.76
Pershing	787	5.37	37.83
Storey	96	0.65	10.86
Washoe	600	4.09	0.38
White Pine	701	4.78	19.48
TOTAL	14,663	100.00	1.82

Source: State of Nevada Department of Employment, Training, and Rehabilitation.
"Nevada Employment and Payrolls, 1997." Research and Analysis Bureau: Carson City, 1999.