AN ECONOMIC EVALUATION OF THE

PERUVIAN MINING COMMUNITY

By

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A Thesis submitted to the Faculty and the Board of Trustees of the Colorado School of Mines in partial fulfillment of the requirements for the degree of Master of Science in Mineral Economics.

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ABSTRACT

The mining industry in Peru is the most important economic activity in the country, its production accounts for 50 percent of total exports, but only about one percent of Peru's total population is involved in the mining industry.

The new General Mining Law (D.L. 18880) passed June 8, 1971 created the Mining Community in each company; a workers' organization, which will receive 10 percent of the Net Income of the operations, part to be distributed in cash, part to be used in buying shares of the company until such shares represent 50 percent of the capital of the firm.

The amount of money the workers will receive depends mainly on the difference between total sales and total costs. For this reason workers will try to increase the total output and will try to reduce total costs, but this reduction will be directed to costs other than wages, salaries, and other benefits the workers receive in a direct way, since for each dollar they receive in salaries or benefits they lose only 10 cents for their Mining Community.

The amount of shares the workers will be able to buy each year depends on the market price of the stock.

The time the workers will need to become owners of 50 percent of the capital of the firm depends on the profitability of the mine, the capital of the firm, the price of the stock, and the amount of new investments in the firm. The minimum number of years for the case studied
is between 12 and 13 years and the maximum can be the life of the mine.

The Mining Community will not represent a significant increase in costs to the company. For a normal operation the total workers' participation per year will be no more than five percent of total sales; part of this money will in most of the cases be reinvested in the same company.
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ACKNOWLEDGEMENTS

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INTRODUCTION

On June 8, 1971 the Government of Peru promulgated the General Mining Law, Decree Law 18880; one of the most important points of this Law is the creation of the Mining Community.

The Mining Community is defined as a mining workers' private legal entity which will receive 4 percent of the Net Income as liquid participation in cash and 6 percent of the Net Income as property participation in company's shares to be capitalized until it reaches 50 percent of the capital of the firm. Once the workers own 50 percent of the capital of the company, the property participation will be invested in stock of the Development Finance Corporation, COFIDE (Government company-cum-merchant bank).

Different variables such as the amount of new investments, depreciation of fixed assets, total sales, total costs, revaluations of fixed assets, etc., will affect the Mining Community of each company and subsequently will affect the behaviour of its workers.

The intention of this thesis is to make an analysis of how sensitive are the workers' participations to changes in the different variables already mentioned.

As a help for the calculations involved, a highly simplified model was devised and a computer program was written in Fortran IV language designed to be used with the PDF-10 computer system of the Colorado School of Mines.
The first two chapters deal with specific aspects of the Peruvian metal mining industry and the description of the Mining Community pertaining to its aims, members, organization, etc.

In the end an analysis and evaluation of the factors affecting the Mining Community are reached.

Appendix A consists of a translation to English of the most relevant articles of the General Mining Law (Decree Law 18880).

Appendix B consists of a description of the mathematical model of a Peruvian mining firm, and the description of the computer program.
THE METAL MINING INDUSTRY IN PERU

Introduction

Inclusion of this chapter within this thesis shows the important role that the metal mining industry plays in the economy of the nation. This chapter deals with the following subjects: mining legislation, mining companies, primary minerals and production, exports, contribution to the GNP, and labor forces.

The following map of Peru shows the location of the principal mines in production and the principal mines in development.

Legislation

Mining tradition in Peru dates back long before the Spanish colonization of the Americas. The Incas mined gold, silver and copper. These products were transformed into articles of decoration, domestic utensils, and religious objects.

Later, during the Viceregal period, mining products were the main economic support for the Spanish government. At the end of this period -- because of economic, social, political, movements that ended with the declaration of the independence of Peru -- the mining industry was almost paralyzed.

The Republican era, from 1821 to the present, started with a poor and deficient metal mining industry.
FIGURE 1 MAP OF PERU
The exploitation of guano and nitrate replaced silver and gold as the primary mining products.

Nevertheless, with the foundation of the School of Engineering (Mines and Civil Engineering) in 1876 and the issuance of the Reforming Law of Mining Regulations (1877), a new era was started.

In 1890 the Law of Invariability of mining taxes, for a period of 25 years, was decreed.

In 1901 the Mining Code was promulgated. On May 12, 1950, the New Mining Code was promulgated and the mining industry was based on this legislation until April 14, 1970. At this time the Mining Policy Decree Law No. 18225 stipulated that the Mining Code should be substituted by the General Mining Law.

On June 8, 1971, the General Mining Law, Decree Law No. 18880, was promulgated, which is a detailed version of the Policy Law (D.L. 18225).

Currently the General Mining Law is the legal instrument that governs the mining industry of Peru.

Recently, the Regulations of the Mining Community were given and it is expected that the Regulations for the other titles of the General Mining Law will be published soon.

Mining Companies

Mining enterprises in Peru are of three general forms: large-medium and small-scale companies.

The Central Reserve Bank of Peru reports, Cuentas Nacionales del Peru (National Accounts of Peru) 1960-1969, that in an analysis based
on production, the large-scale companies, which are branches of foreign firms, had a participation of 58.2 percent in 1960 and 64.5 percent in 1969 and that this group is growing faster than the medium- and small-scale companies, that are mainly national.

Large-scale companies consist of Southern Peru Copper Company owned by ASARCO, Cerro Corporation, and Newmont Mining Co., which operates the Toquepala Mine; Marcona Mining Company, a subsidiary of Marcona Corp. operates Marcona Mine; and Cerro de Pasco Corporation, a subsidiary of Cerro Corporation, operates a series of six mines (Casapalca, Morococha, San Cristobal, Cerro, Yauricocha, and Cobriza) and a smelter in La Oroya. Once Minero-Peru (Government company) brings into production all of its mines currently in exploration and development, they will become the most important producer in the country.

Medium-scale companies are comprised of an estimated 70 producers. They are both of national and foreign origin.

Small-scale producers are generally individual firms throughout the country. It was estimated in 1970 that there were about 2000 such firms.

With the exception of a few operations along the coast, most of the mines are located in the Sierra region at elevations higher than 3000 meters above sea level (9840 f.a.s.l.); only one new mine is located in the Jungle region.
Production of Primary Minerals

The mining industry in Peru is widely diversified. Five of the major mineral products of the country are: (1) copper, (2) iron ore, (3) lead, (4) zinc, and (5) silver.

Copper is Peru's principal export product. Peruvian copper production for 1972 is estimated to be 190,000 metric tons, of which Toquepala Mine provided approximately 60 percent. Nearly all of Peru's copper production is exported; 50 percent was sold to Japan, 25 percent was sold to the U.S.A. and the remaining 25 percent was sold to European countries.

Production of iron ore for 1972 is estimated to be 9500 million metric tons, of which Marcona Mine accounted for 100 percent of the total output. Marcona exports approximately 60 percent of its production; the remaining 40 percent is sold to Corporacion del Santa's steel works in Chimbote, Peru. Of all iron ore exports in 1970, 80 percent went to Japan, 13 percent to the U.S.A., and 7 percent to Europe and other Latin America countries.

Estimated production of lead for 1972 was 160,000 metric tons, of which Cerro de Pasco Corporation accounts for 40 percent of the total output. Peru's lead production is almost entirely exported; in 1970, 50 percent of the concentrates were sold to the U.S.A., and the remaining 50 percent were sold to Japan, Europe, and Latin America; 75 percent of the refined lead was exported to the U.S.A.

Production of zinc for 1972 is estimated to be 331,000 metric tons. As in the case of lead, Cerro de Pasco Corporation is the largest
individual producer with about half of the total output. In 1970, 50 percent of the zinc concentrates were exported to Japan, 32 percent to the U.S.A., 15 percent to Europe, and 3 percent to Latin America; 43 percent of the refined zinc was exported to the U.S.A., 25 percent to Europe, 23 percent to Latin America and 9 percent to Asia.

Production of silver for 1972 is estimated to be 39 million troy ounces. Cerro de Pasco Corporation produces 50 percent of Peru’s total silver output. Peru exports almost 98 percent of its production. Silver is generally found together with lead, zinc, and copper concentrates. In 1970, 70 percent of silver in blister was exported to the U.S.A., 25 percent to Europe; 70 percent of the refined silver was exported to Europe, 20 percent to Japan, and 10 percent to the U.S.A.

Table No. 1 shows the total Peruvian output of the five primary minerals from 1950 to 1972.

Exports

The mining sector plays an important role in the value of exports of the nation, providing approximately 50 percent of total exports with an amount of $504 million dollars in 1970. Copper represents almost half of the mineral exports, in dollar value, iron ore accounts for approximately 15 percent. Table No. 2 shows the amount of the primary mineral products exported.

It is interesting to note that from 1967 to 1970 the increase was $120.9 million dollars, an equivalent increase of 31.5 percent over 1967; but from 1970 to 1971 there was a reduction of 24 percent in only a
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<th>Copper Thousand MT</th>
<th>Iron Ore Thousand MT</th>
<th>Lead Thousand MT</th>
<th>Zinc Thousand MT</th>
<th>Silver Million Troy OZ</th>
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<td>5917</td>
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<td>6528</td>
<td>151</td>
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<td>1965</td>
<td>180</td>
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<td>200</td>
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<td>177</td>
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<td>1972</td>
<td>190</td>
<td>9500</td>
<td>160</td>
<td>331</td>
<td>39.0</td>
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**Sources:**
- Peru Minero 1967
- Peruvian Metal Mining 1971
- Minerals yearbook
year. The main reason for these sharp differences was the reduction in metal prices especially for copper and silver together with the reduction in production because of strikes and related labor problems.

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<td></td>
<td>(In percentages)</td>
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<td>----------</td>
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<tr>
<td>Copper</td>
<td>51.7</td>
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<tr>
<td>Iron Ore</td>
<td>16.2</td>
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<tr>
<td>Silver</td>
<td>11.0</td>
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<tr>
<td>Zinc</td>
<td>9.3</td>
</tr>
<tr>
<td>Lead</td>
<td>7.9</td>
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<tr>
<td>Others</td>
<td>3.9</td>
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<tr>
<td>TOTAL</td>
<td>100.0</td>
</tr>
<tr>
<td>Million U.S. $</td>
<td>383.5</td>
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<tr>
<td>Percent of total</td>
<td></td>
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<tr>
<td>Peruvian exports</td>
<td>50.7</td>
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</table>

Source: Peruvian Metal Mining 1971

(*) Includes mining and metallurgical products.
Contribution to the Gross National Product

Even though minerals are important in furnishing foreign currency required for imports of equipment, machinery, etc., the contribution of the mining sector to the Gross National Product of Peru is small.

The following table shows the contribution of the mining sector to the GNP from 1950 to 1969 (last available data). During this 19-year period the participation of the mining industry has increased 1.3 percent; 4.5 percent in 1950, up to 5.8 percent in 1969. This means that the average rate of growth of the mining sector, was slightly greater than the national average, which in the 1960 decade was 4.7 percent.

<table>
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<th>TABLE 3</th>
<th>CONTRIBUTION OF THE MINING SECTOR TO THE GNP</th>
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<td>(Million soles at year 1963 prices)</td>
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<td>Gross National Product</td>
<td>38956</td>
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<td>Mining Sector</td>
<td>1768</td>
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<tr>
<td>Percentage of GNP</td>
<td>4.5</td>
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Mining Sector includes mining and metallurgical production

Labor Forces

The mining firms generally pay the highest salaries in the country beside providing such benefits as housing facilities, medical services, educational and recreational facilities. For this reason it is not difficult for them to attract engineers, technicians, and job-related workers willing to work in the mines.

The number of persons involved in the mining industry has increased more than 56 percent from 1950 to 1968 at an average rate of 2.5 percent per year, which means that an estimate for 1973 would be 100,000 people working in mining. Table 1 shows that the number of persons working in the industry represents a small proportion of the total labor forces of the nation, only 2.2 percent or less than one percent of Peru's total population.

This factor is of great importance since it shows that very few people, 0.7 percent of the total population of Peru, accounts for 50 percent of the value of total exports. Any law such as the General Mining Law with the creation of the Mining Community, which directly affects the workers of the industry, will, of course, affect the economy of the mining sector and subsequently will affect the economy of the nation.
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<td>Population of Peru</td>
<td>8069.5</td>
<td>10420.4</td>
<td>12103.0</td>
<td>12872.6</td>
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<tr>
<td>Total active forces</td>
<td>2583.6</td>
<td>3227.0</td>
<td>3720.1</td>
<td>3926.7</td>
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<tr>
<td>Mining Industry:</td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Workers</td>
<td>47.0</td>
<td>58.7</td>
<td>67.9</td>
<td>71.7</td>
</tr>
<tr>
<td>Employees</td>
<td>6.6</td>
<td>10.7</td>
<td>13.8</td>
<td>15.2</td>
</tr>
<tr>
<td>Independent workers</td>
<td>2.3</td>
<td>1.4</td>
<td>0.9</td>
<td>0.6</td>
</tr>
<tr>
<td>TOTAL</td>
<td>55.9</td>
<td>70.8</td>
<td>82.6</td>
<td>87.5</td>
</tr>
<tr>
<td>Percent of population</td>
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<td>0.7</td>
<td>0.7</td>
<td>0.7</td>
</tr>
<tr>
<td>Percent of active forces</td>
<td>2.2</td>
<td>2.2</td>
<td>2.2</td>
<td>2.2</td>
</tr>
</tbody>
</table>

Source: Cuentas Nacionales del Peru, 1950-1967, 1960-1969,
THE MINING COMMUNITY

Introduction

One of the more important points of the new Peruvian General Mining Law is the creation, within each company, of a Mining Community, which is defined as a private legal entity organized to represent the total number of workers who work in the company and to get them to participate in the ownership, management, and profits earned by the company.

It is understood that this move was directed not only to make the workers participants in the said benefits but also to make them participants in the responsibilities the mining companies must face and to win over the workers for their companies instead of setting the workers against them as a way to discourage labor problems.

The aims of the Mining Community

Article 276 specifies clearly the aims of the Mining Community:

a. To strengthen the company by means of the united action of the workers in management, in the productive process, and in corporate ownership, as well as to stimulate constructive forms of relationship between capital and labor.

b. To unify the action of the workers in the management of the company, to protect the rights and interests as proprietors given to them in this Decree Law;
c. To administer the benefits received for the good of the workers.

d. To promote the social, cultural, professional, and technical development of the workers.

By the time this law was established, the labor situation in the country was tense; there were strikes in almost all the mining camps, riots, etc. in demand for higher wages and increased benefits. All this resulted in reduced production, less taxes paid to the State, and a atmosphere of dissent and uncertainty for investments. This point by itself may explain one of the reasons for creating the Mining Community.

**Members of the Mining Community**

All the regular workers who work full-time in the company have to be members of the Mining Community; it includes top managers, engineers, doctors, teachers, miners and related laborers.

**Participation of the Workers**

The participation of the workers in the company is specified in Article 281 through Article 292 of the General Mining Law. Essentially it states the following:

All mining companies will deduct free of all taxes 10 percent of their net income, which will be applied as follows:

a. Four percent as liquid participation to be distributed in cash.

b. Six percent as property participation that will have to be
reinvested in the same company and immediately capitalized free of tax until it reaches fifty percent of the capital of the company.

If there is no program of reinvestments approved by the Ministry of Energy and Mines (Article 124, c) and ownership of the 50 percent of the capital has not been reached, this amount will be used to acquire the corresponding part of the capital belonging to other members or shareholders.

As an exemption, Public Sector mining companies, State Associated Mining Companies, and Special Mining Companies (for definitions refer to Articles 40, 41), will contribute to the Mining Community six percent of their net income in bonds in the same company. Failing this, contributions will be made in stock of the Development Finance Corporation, COFIDA (Government company-cum-merchant bank).

Once 50 percent of the capital of the firm has been reached, the six percent will be invested directly in the Development Finance Corporation, except in cases where it is necessary to maintain the ownership of 50 percent of the capital of the firm.

This new profit-sharing system would create an incentive for workers to work for more profitable companies and to avoid less profitable companies. For this reason, the law is intended for the creation of the Mining Compensation Community. Eighty percent of the liquid participation and 80 percent of the property participation will be given to the Mining Compensation Community, which, adding together all contributions will proceed to re-distribute them among all the Mining Communities in proportion to the number of days worked. In workers' liquid participation
this re-distribution will be in cash, in property participation the Mining Compensation Community will issue shares representing the total contribution which will be distributed among its Mining Community members.

The remaining 20 percent of liquid participation together with the amount received from the Mining Compensation Community will be distributed among the workers of each company through its Mining Community in the following manner:

a. Fifty percent in equal parts, and
b. Fifty percent in direct proportion to the basic personal remunerations appearing on the wage sheets.

The remaining 20 percent of property participation will go directly to the Mining Community of each company, which also will administer the shares received from the Mining Compensation Community.

Once the Mining Community owns 50 percent of the company or the value of bonds and/or investments in COFIDE is equal to 50 percent of the capital of the company, the Mining Community will issue shares representing its property. These shares will be distributed among its members in direct proportion to the number of months worked by each member. (Articles 307, 308)

Until 50 percent of the capital is reached, dividends, interests and profits, which together form the General Fund of the Mining Community, will be distributed in the following manner (Article 305):

a. Not less than 20 percent for the use of the Mining Community and administrative expenses.
b. Fifty percent of the remaining in equal parts to all workers.
c. The remaining in proportion to the years of service as a member of the Mining Community.

The organization of this system is shown in the following graphs.

Articles 53, 56, 57 and 58 of the Regulations (Supreme Decree No. 025-72-EM/DS) indicate that the Mining Community ceases to participate in the compensation system when the company in question does not bring in an index, net income per worker, of less than 10 percent of the average of all indices brought in by the Mining Communities of the nation.

In this case, 4 percent of the net income will be distributed among the members of the Mining Community as indicated before. The value corresponding to 6 percent of the net income will be accounted for directly as property of the Mining Community without participation in the compensation system.

The six percent of the net income will be calculated by the difference between the net income generated and losses of previous business years; losses for the year of 1970 are exempted.

Workers will participate in the management of the firm through their representatives on the board of directors in direct proportion to the shares they own. The minimum number of Mining Community's representatives is one if the number of directors is less or equal to ten and a minimum number of two if there are more than ten directors (Article 44 of the Regulations).

In the case of Public Sector, State Associated and Special Mining
FIGURE 2  CASH FLOW DIAGRAM OF A PERUVIAN MINING COMPANY
FIGURE 3  MINING COMMUNITY SYSTEM
Companies the minimum number of representatives of the Mining Community will be two (Article 291).

Branches of foreign mining companies operating in the country will nominate a Board of Directors with residence in Peru with a minimum of five members and a maximum of ten members (Article 87 of the Regulations).

The remuneration of Directors who are representatives of the workers will be the property of their respective Mining Community (Article 90 of the Regulations).

Organization and Administration

The General Mining Law indicates that the management, administration, and control of the Communities will be carried out by:

In the case of the Mining Community:
1) The General Assembly; and
2) The Community Council.

In the case of the Mining Compensation Community:
1) The General Assembly of Delegates; and
2) The Executive Committee.

The General Assembly is the supreme authority and includes all the members of the Community.

The Community Council is the executive body and members are elected from among the workers, with the exemption of union leaders (Articles 294, 295).

The General Assembly of Delegates is made up of a representative of each of the Mining Communities.
The Executive Committee is the administrative body of the Mining Compensation Community.

The residence of the Mining Compensation Community will be in Lima, the capital city of Peru.

**Acquisition of Shares**

Article 314 indicates that the value of the shares of the company will be determined by agreement between the company and the workers, on the basis of the exchange quotation. In the absence of an agreement, the evaluation of the stock will be made following the procedure laid down by the National Securities Commission.
ANALYSIS AND EVALUATION OF THE MINING COMMUNITY

Introduction

The first part of this chapter deals with the financial analysis of the metal mining industry of Peru from the period preceding the creation of the Mining Community. The data, published in Peruvian Metal Mining 1971, cover the years 1967 to 1970. The three tables used are Consolidated Assets, Consolidated Liabilities, and Statement of Results of the Metal Mining Industry which are included in Appendix C.

The original information used came from the balance sheets and statements of results of about 80 companies. These represent approximately 95 percent of the total metal mining production of Peru. The tables were prepared by the Office of Economic Studies of the National Mining and Petroleum Society in Lima, Peru.

The second part of this chapter consists of the analysis and evaluation of the Mining Community with emphasis on the primary factors affecting the net income of a firm and consequently the workers' liquid and property participation.

A sensitivity analysis changing the value of the different variables for a hypothetic firm was performed. The results are shown graphically. Appendix B describes in detail the computer program used for the calculations.
Analysis of the Financial Ratios

The table showing the financial ratios of Peruvian metal mining is included in Appendix C. The increase in total income from 13,373 million soles in 1967 to 18,736 million soles in 1968, an increase of 40 percent, is mainly the result of a devaluation of the Peruvian sol in 1967 from 26.82 soles per U.S. dollar to 38.70 soles per U.S. dollar, a 44 percent devaluation.

The considerable increase in the Current Ratio from 2.4 in 1969 to 4.8 in 1970 shows a tremendous decrease in current liabilities of 2,000 million soles, which represents 56 percent of the current liabilities in 1969.

The Debt Ratio shows clearly the same effect since the total debt in 1970 was only 28 percent of total assets; in 1967 it was 43 percent.

Interest Earned Ratio shows that the industry generates sufficient profits to cover interest payments as much as 52 times this amount. It also indicates that the metal mining industry in Peru is almost self-sufficient in so far as capital financing is concerned.

The high average collection period, typical of the mining industry, creates a problem for short term financing.

The Fixed Assets Turnover Ratio, shows a definite increase since 1967. This is a result of two causes: (1) more rapid depreciation of fixed assets allowed by the government as an incentive for the mining industry and (2) decreasing investments in fixed assets.
The low Total Assets Turnover Ratio is typical of the industry. The increase of this ratio shows a decrease in investments.

The Profit Margin Ratio, profit after taxes over total sales, shows the effect of increase in costs from 57 percent of sales in 1967 to 61 percent in 1970; it also shows the increase in income tax paid: 9 percent of sales in 1967 and 13 percent in 1970, with a relatively small increase in depreciation. The ratio of 7 percent in 1970 also indicates the fall in international prices during this year, especially for silver.

A decreasing Return on Total Assets Ratio is due to a decreasing profit margin on sales and decreasing fixed assets.

In summary, the analysis of these financial ratios leads to the conclusion that investments in the mining industry were less and less each subsequent year, and costs were increasingly higher each year. A continuation of this trend for the whole mineral industry would result in collapse unless the government creates new incentives, and what is more important, reestablishes an atmosphere of tranquility, especially in the labor sector.

The Peruvian government, in consideration of the economic importance of the mining industry, enacted the General Mining Law, of which the primary aims are to encourage new investments and to diminish labor problems.
Analysis of Uses and Sources of Funds

The tables showing the Uses and Sources of Funds for the metal mining industry in Peru from 1967 to 1970 are included in Appendix D.

The reduction of fixed assets during the years 1969 and 1970 is significant, especially in 1969 when 51 percent of the sources of funds came from reduction of fixed assets. Noteworthy also is the increase of freely disposable reserves and reserves for reinvestments amounting to 36.1 percent of the sources in 1968 and 30.0 percent in 1970. The increase in reinvestments does not show the same trend, except in the year 1969 when 28.3 percent of the funds were used for reinvestment.

A great proportion of funds was used to increase Other Assets (made up in great part by intangible investments). In 1970, 55.7 per cent of the funds were used for re-payment of debts; 29.2 percent to decrease current liability, and 26.5 percent to decrease long-term debt.

The reduction of fixed assets, the relatively small increase in reinvestment, the tendency to build up large amounts in reserves, and the decrease in current and long-term debts confirm the conclusions reached in the analysis of the financial ratios.

It is expected that the new General Mining Law will change this situation and that the mining industry will start a new era of prosperity again. The intention of the promotional regulations is to attract new investments, both foreign and national; and the intention of the Mining Community is to reduce labor problems.
Analysis of Labor Costs

During the period 1967 - 1970 labor costs make up about 35 percent of total costs, excluding income tax. Total costs represent between 55 and 61 percent of the total income of the firms.

The increase of total costs during this period, before the creation of the Mining Communities, was as follows:

<table>
<thead>
<tr>
<th>TABLE 5</th>
<th>TOTAL COSTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>---------</td>
<td>------</td>
</tr>
<tr>
<td>(In million soles)</td>
<td></td>
</tr>
<tr>
<td>Total Income</td>
<td>13373</td>
</tr>
<tr>
<td>Total Costs (*)</td>
<td>7562</td>
</tr>
<tr>
<td>Labor Costs (**)</td>
<td>2615</td>
</tr>
<tr>
<td>Increase of Total Income</td>
<td>40.1%</td>
</tr>
<tr>
<td>Increase of Total Costs</td>
<td>44.7%</td>
</tr>
<tr>
<td>Increase of Labor Costs</td>
<td>23.1%</td>
</tr>
</tbody>
</table>

(*) Includes labor costs, does not include income tax.
(**) Includes basic wages, social laws, social reserves.

The 40.1% increase in total income from 1967 to 1968 is mostly due to the devaluation of the Peruvian sol late in 1967.

The table also shows an almost constant increase in labor costs during the 4-year period, with an average of about 22 percent per year.
This increase was three times larger than the increase in total costs in 1969 and almost two times in 1970. This relationship indicates that most of the increase in total costs in the metal mining industry in Peru during 1968 and 1970 was due to the tremendous increase in labor costs.

Other costs, including expenditures for housing, schools, hospitals, etc., and additional benefits that the workers receive, are not counted as wages and salaries.

One of the large companies, Cerro de Pasco Corporation, reported the following data in 1970.

<table>
<thead>
<tr>
<th>TABLE 6</th>
<th>LABOR COSTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Base wage per day</td>
<td>100 %</td>
</tr>
<tr>
<td>Other earnings</td>
<td>47 % of base salary</td>
</tr>
<tr>
<td>Indirect benefits (non-cash)</td>
<td>59 % of base salary</td>
</tr>
<tr>
<td>Sub total</td>
<td>206 % of base salary</td>
</tr>
<tr>
<td>Indemnity reserve</td>
<td>68 % of base salary</td>
</tr>
<tr>
<td>TOTAL</td>
<td>274 % of base salary</td>
</tr>
</tbody>
</table>

With negligible differences this must be the pattern of labor costs for most of the mining companies.
Factors Affecting the Workers' Participation

The outline of the primary factors that affect the net income of the firm and subsequently the workers' participation (profit-sharing) is shown as follows:

Wages, salaries, and other earnings
Social laws and social reserves
Cost of materials and spare parts
Interest paid
Camp facilities
Productivity
Strikes
Other costs

\[
\text{WORKERS' PROPERTY PARTICIPATION} = 0.06 \times (\text{SALES} - \text{COSTS} - \text{DEPRECIATION})
\]

Price of the product
Volume of production
Devaluation of the sol

Net fixed assets
Depreciation rate
Revaluation of fixed assets
Factors used to calculate total costs and depreciation as a function of sales:

Total sales = SALES
Total costs = (X)(SALES) where X is a percentage.
Depreciation:
Fixed Assets = SALES / y
where y is the Fixed Assets Turnover Ratio.
Depreciation rate = A
then,
Depreciation = (SALES / y)(A)

Net income:
Net income = SALES - (X)(SALES) - (SALES / y)(A)
Net income = SALES(1 - X - A / y)

Workers' property participation:
W.P.P. = 0.06 x SALES (1 - X - A / y)
where:
W.P.P. = Workers' property participation
SALES = Total sales
X = Total costs factor
A = Depreciation rate
y = Fixed Assets Turnover Ratio
Factors Affecting Sales.- Price of the product; an increase on prices in the international market will increase the amount of sales and workers' participation. With actual production, an increase in price of one cent per pound of copper represents 4.4 million dollars of increase in sales per year.

Volume of production; workers will try to increase total volume of production in order to increase total sales.

Devaluation of the Peruvian sol; a change in the rate of exchange of foreign currency will have a considerable effect on total sales since most of the Peruvian mineral production is exported and payments are made in foreign currency. With an actual volume of mineral exports of about 500 million dollars a devaluation of one percent will represent 5 million dollars of increase in sales.

In general, any factor that increases sales will benefit the workers.

Factors Affecting Total Costs.- Wages and salaries represent the most important factor affecting total costs, net income, and subsequently the workers' participation.

It is important to note that workers will try to get direct benefits instead of property participation, since for each dollar increase in wages the workers receive, the net income is reduced in the same amount. But workers' property participation will be reduced by only 6 cents or less after the Mining Compensation Community puts aside administrative and related costs and redistributes the remainder among the Mining Communities of the country.
Wages and salaries paid by the industry are the highest in the regions where mines are located.

The national average earning in the mining industry during the first semester of 1971 was 181.00 soles (U.S. $ 4.70) per day; it includes basic wages and other remuneration but does not include social benefits. It was 50 percent higher than wages for the manufacturing industry, 72 percent higher than that of the fishing industry, and 317 percent higher than the minimum vital urban wage ordered by the government. The cost of living in the mining areas is notoriously higher than the overall average for the country.

Appendix E contains two graphs showing the wages in soles and in U.S. dollars of two companies, one large producer (Cerro de Pasco Corp.) and one medium producer (Atacocha Co.), both located in the Central Sierra region. In the first graph the average cost of living is plotted, on the assumption that year 1952 = 100. The salaries in dollars were found on the bases of the certified average rate of exchange, soles per U.S. dollar per year. The second graph shows the same wages plotted on semi-log paper.

Social laws and social reserves are entirely designed for the workers. Workers, then will try to receive these benefits in a direct way.

Cost of materials and spare parts is also an important factor. A non-significant percentage of mine equipment is produced in the country. Almost all that is needed has to be imported. An increase in cost of materials means in some way, new investments, new equipment, increased
efficiency, and larger production rates, which are of benefit to the company and the workers.

The Statement of Results in Appendix C shows that the amount paid for interest is non-significant, and it may decrease since part of the new capital required for investments will be furnished by the Workers' Property Participation.

Camp facilities means housing, educational, medical, and recreational facilities for the direct benefit of the workers. The workers will also try to increase this cost instead of increasing net income and property participation.

Productivity itself depends on other factors, and the increase or decrease of productivity will depend on the policies followed by the firm, type and degree of mechanization, type of mining operations, type and grade of the ore deposit, geographical location of the mines, etc. An increase in productivity will be beneficial to both the company and the workers.

 Strikes are a very important factor affecting the net income and, as has been noted, strikes are one of the reasons for creating the Mining Community.

What is most likely to happen is that demands for increases in wages and salaries will remain the same as in the past; relations between workers and the companies will be better. Hopefully, better communications between the workers and the company will prevail and strikes should decrease.

 Strikes represent losses for both sides. The company cannot escape
fixed costs and other costs during strikes. As there is no production the workers do not receive their wages.

Appendix F contains a table showing the required increase in the basic salary to compensate for salaries lost during the strike. If the increase obtained is less than that required, the result is net lose. If the increase is greater, the required increase must be subtracted, and the real increase will be lower.

Factors Affecting Depreciation.- The value of undepreciated fixed assets is an important determinant of the depreciation. The larger this value, the greater is the depreciation, the less is the net income, and the less is the Workers' Property Participation.

The Fixed Assets Turnover Ratio, indicates the relation of sales to fixed assets. If sales are considered constant, a higher ratio reflects a more efficient usage of fixed assets. This may indicate better equipment, better efficiency, or better operators. A lower ratio of course, means the opposite and also may indicate that some of the plant and equipment are working at only partial capacity.

The greater the Fixed Assets Turnover Ratio, the better it is for both the company and the workers' participation.

The depreciation rate of fixed assets is indicated by Article 124, paragraph a, and Article 127, paragraph b, of the General Mining Law (D.L. 18880), and Directorial Resolution No. 146-DGC of December 4, 1969. (Refer to Appendix A.)
Article 124, a essentially indicates: 100 percent rate of depreciation for annual investments of up to 10 million soles, and 20 percent rate of depreciation for annual investments from 10 to 30 million soles.

Article 127, b indicates that the government can authorize a maximum overall rate of 20 percent when a contract is signed between the government and the company.

Directorial Resolution No. 146-DGC gives a list of different items of equipment and their respective minimum and maximum rates of depreciation.

In general the rates of depreciation indicated by the government allow a rapid depreciation of fixed assets; this allowance is beneficial to the firm. The larger the rate of depreciation, the larger the depreciation. The smaller the net income, the more the workers' participation is reduced.

Article 124, b and Article 127, c indicate that mining companies may revalue the undepreciated balance of machinery, industrial equipment, and other fixed assets in the event of fluctuation in the value of national currency certified by the Central Reserve Bank of Peru with respect to the rate of exchange of the foreign exchange certificate in a proportion exceeding five percent.

This is beneficial to the firm since a revaluation will increase the value of fixed assets, the depreciation will also increase but the net income of the firm will decrease and hence will decrease the workers' participation.
The following table is a summary of the variables and their effects on the Workers' Property Participation and the profits of the company.

The formula already developed is:

\[ W.P.P. = 0.06 \times \text{Sales} \left( 1 - \frac{X}{Y} - \frac{A}{Y} \right) \]

Where:

- \( W.P.P. \) = Workers' Property Participation
- \( X \) = Total costs
- \( A \) = Depreciation rate
- \( y \) = Fixed Assets Turnover Ratio

**TABLE 7  EFFECT OF CHANGES IN VARIABLES**

<table>
<thead>
<tr>
<th>Variable</th>
<th>If the variable is:</th>
<th>Workers' Property Participation</th>
<th>Profits of the company</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sales</td>
<td>Greater</td>
<td>Increases</td>
<td>Increases</td>
</tr>
<tr>
<td></td>
<td>Smaller</td>
<td>Decreases</td>
<td>Decreases</td>
</tr>
<tr>
<td>Costs</td>
<td>Greater</td>
<td>Decreases</td>
<td>Decreases</td>
</tr>
<tr>
<td></td>
<td>Smaller</td>
<td>Increases</td>
<td>Increases</td>
</tr>
<tr>
<td>Depreciat.</td>
<td>Greater</td>
<td>Decreases</td>
<td>Increases</td>
</tr>
<tr>
<td>Rate</td>
<td>Smaller</td>
<td>Increases</td>
<td>Decreases</td>
</tr>
<tr>
<td>Fixed Assets</td>
<td>Turnover</td>
<td>Greater</td>
<td>Increases</td>
</tr>
<tr>
<td>Ratio</td>
<td>Smaller</td>
<td>Decreases</td>
<td>Decreases</td>
</tr>
</tbody>
</table>
Given values for these variables:

Costs = 50 %, 60 %, or 70 % of sales
Dep. rate = 10 %, 20 %, or 30 % of sales
Fixed Assets Turnover Ratio = 1, 2, or 3

Most of the mining firms would be within this limit

The maximum amount the workers will receive each year is

Costs = 50 % of sales
Dep. rate = 10 %
Fixed Assets Turnover Ratio = 3

Then:

W.P.P. = 0.06 Sales \( \left( 1 - 0.5 - 0.10 \right) / 3 \)
W.P.P. = 0.028 Sales, approximately three percent of sales per year. The minimum the Workers' Property Participation will be, is zero, when costs are 70 percent of sales, the depreciation rate is 30 percent, and the Fixed Assets Turnover Ratio is one.
Factors Affecting the Workers' Ownership of the Capital

Investments.- New investments have a variety of effects. One of them is to increase the value of fixed assets and depreciation, reducing at the same time the workers' participation. Another effect may be an increase in the capital of the company.

These effects will be reflected in the market price of the stock of the firm, which, in part, has to be acquired by the Mining Community. A company that each year invests an amount equivalent to the depreciation plus a percentage for future change in prices of machinery and equipment, will be in a position to maintain at least its level of actual production.

The same company investing annually an amount less than that of depreciation will be working in worse conditions each successive year, and its efficiency and production will decrease. In the latter case, the amount of fixed assets will be reduced each year. The depreciation will also be decreased, and the workers' participation or profit-sharing will be greater.

The price of shares of the firm can vary widely depending on a large number of factors. One of these factors is the policy the firm follows for new investments. What is most likely to happen is that the stock price will rise in the same proportion as the new investments. If this is the case, the Mining Community will buy less shares for the same amount of money, and the time the workers will need to become owners of 50 percent of the firm will be greater.

In the other case, if the company has fewer new investments or none
at all, the workers will be able and obliged, because of the law, to buy more shares of the firm. The number of years the workers need to become owners of fifty percent of the capital of the firm will be less than in the first case.

Even more important is what amount of the new investment is furnished by the workers. If the new investment is totally covered by the workers' money, the fifty percent level will be reached faster than if the workers furnish only a part of the new investment.

If the investment requires money from outside the company, two things can happen: (1) the firm gets a loan or (2) the firm sells new shares. In case one, the proportion of capital the workers own is not affected. In case two, the proportion of the firm the workers own will be reduced. It will be required that money obtained from selling shares be equal only to the workers' contribution each year, and the workers will never reach the 50 percent level of ownership of the firm.

Price of the Stock.—The market price of the stock will reflect in some way the economic performance of the company. In a sound and good company the workers will buy less shares than in a deficient company, for the same amount of money, and the rate or velocity of acquisition of the capital of the firm will be lower in the first case.

The time the workers need to become owners of the 50 percent of the capital of the firm, in the case analysed, could be as low as 12 years. It is faster in the case of no new investments, total depreciation of
fixed assets, and no increase in production. The maximum limit could be the life of the mine. It is when the firm brings in new capital from outside the company in an amount equivalent or higher than the Workers' Property Participation, each year.

Other factors affecting the price of the stock are: type, location, and average grade of the ore deposit, managers' aptitudes, and psychological and political factors. These factors are practically impossible to predict. It is probable that the price of the stock of a company with efficient operation, good managers, and a sound policy for investments, etc., will be higher than the price of the stock of a poor and deficient firm.

In summary an increase in the price of the stock will reduce the number of shares the workers can acquire and will increase the number of years required to reach 50 percent of the capital of the company.

Analysis of an Hypothetical Firm

Data:

<table>
<thead>
<tr>
<th>Description</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total initial investment</td>
<td>6000.0</td>
</tr>
<tr>
<td>Net fixed assets</td>
<td>3150.0</td>
</tr>
<tr>
<td>Number of years for calculations</td>
<td>20</td>
</tr>
<tr>
<td>Sales year 1</td>
<td>6300.0</td>
</tr>
</tbody>
</table>
Variables and values:

<table>
<thead>
<tr>
<th>Variable</th>
<th>Values</th>
</tr>
</thead>
<tbody>
<tr>
<td>Increase of sales in 20 years</td>
<td>0%, 100%, 200%</td>
</tr>
<tr>
<td>Operating costs factor, percent of sales</td>
<td>50%, 60%, 70%</td>
</tr>
<tr>
<td>Other costs factor, percent of operating cost</td>
<td>10%</td>
</tr>
<tr>
<td>Revaluation factor</td>
<td>0%, 5%, 10%</td>
</tr>
<tr>
<td>Total investment factor, percent of depreciation</td>
<td>0%, 25%, 100%, 125%</td>
</tr>
<tr>
<td>Investment for intangibles factor, percent of total investment</td>
<td>10%</td>
</tr>
<tr>
<td>Depreciation rate</td>
<td>10%, 20%, 30%</td>
</tr>
<tr>
<td>Fixed Assets Turnover Ratio</td>
<td>1, 2, 3</td>
</tr>
</tbody>
</table>

The following graphs show the results of this analysis. The calculations were done using the Economic Evaluation computer program (Appendix B).
The effect of sales

The effect of costs

The effect of investments

FIGURE 4  SENSITIVITY OF WORKERS' PROPERTY PARTICIPATION
FIGURE 5  SENSITIVITY OF WORKERS' PROPERTY PARTICIPATION
<table>
<thead>
<tr>
<th>Variable</th>
<th>Change</th>
<th>SUMSHR</th>
<th>SUMTOI</th>
<th>Rate of Return</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>SALES</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>200% in 20 yrs.</td>
<td>4954.0</td>
<td>0</td>
<td></td>
<td>31.59</td>
</tr>
<tr>
<td>100%</td>
<td>3668.8</td>
<td>0</td>
<td></td>
<td>27.98</td>
</tr>
<tr>
<td>0%</td>
<td>2383.6</td>
<td>0</td>
<td></td>
<td>24.56</td>
</tr>
<tr>
<td><strong>COSTS</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>50% of Sales</td>
<td>4333.7</td>
<td>12182.8</td>
<td></td>
<td>33.55</td>
</tr>
<tr>
<td>60%</td>
<td>3086.3</td>
<td>12182.8</td>
<td></td>
<td>25.15</td>
</tr>
<tr>
<td>70%</td>
<td>1838.8</td>
<td>12182.8</td>
<td></td>
<td>15.58</td>
</tr>
<tr>
<td><strong>TOTAL INVESTMENT</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>25% of Dep.</td>
<td>3610.0</td>
<td>1017.2</td>
<td></td>
<td>38.47</td>
</tr>
<tr>
<td>100%</td>
<td>3086.3</td>
<td>12182.8</td>
<td></td>
<td>25.15</td>
</tr>
<tr>
<td>12.5%</td>
<td>2583.6</td>
<td>24477.0</td>
<td></td>
<td>20.36</td>
</tr>
<tr>
<td><strong>REVALUATION OF FIXED</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>ASSETS</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0% Yearly</td>
<td>3668.8</td>
<td>0</td>
<td></td>
<td>27.98</td>
</tr>
<tr>
<td>5%</td>
<td>3615.3</td>
<td>0</td>
<td></td>
<td>29.83</td>
</tr>
<tr>
<td>10%</td>
<td>3536.4</td>
<td>0</td>
<td></td>
<td>32.18</td>
</tr>
<tr>
<td><strong>DEPRECIATION RATE</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10%</td>
<td>3689.5</td>
<td>0</td>
<td></td>
<td>26.03</td>
</tr>
<tr>
<td>20%</td>
<td>3668.8</td>
<td>0</td>
<td></td>
<td>27.98</td>
</tr>
<tr>
<td>30%</td>
<td>3666.7</td>
<td>0</td>
<td></td>
<td>29.44</td>
</tr>
<tr>
<td><strong>FIXED ASSETS TURNOVER</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>RATIO</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1.5</td>
<td>4369.7</td>
<td>12456.2</td>
<td></td>
<td>26.51</td>
</tr>
<tr>
<td>2</td>
<td>4373.0</td>
<td>12482.8</td>
<td></td>
<td>27.67</td>
</tr>
<tr>
<td>3</td>
<td>4371.4</td>
<td>12509.4</td>
<td></td>
<td>29.54</td>
</tr>
</tbody>
</table>
An analysis of the preceding graphs shows that the workers' property participation is highly sensitive to changes in total sales and total costs, is less sensitive to changes in total investments; and the sensitivity to changes in revaluation of fixed assets, rate of depreciation and fixed assets turnover ratio is non-significant.

The effects of these factors on the profits of the company are different. The sensitivity of the Rate of Return to changes in costs is very high. With an increase in costs from 50 percent to 70 percent of sales the Rate of Return is reduced from 33.55 to 15.58 percent. The sensitivity to changes in sales and total investment is lower and respectively about the same. The sensitivity of the ROR to changes in revaluation of fixed assets, depreciation rate and fixed assets turnover ratio is small.
CONCLUSIONS

Wages and salaries will follow the trend of the last two decades, and workers will demand the same percentage rate of 12 to 13 percent of increase in salaries each year. This rate may be higher in the future as the Mining Community increases its proportion of ownership of the firm.

Representation of workers in the management of the company will provide favorable relations between the two, less strikes, less tension, more appropriate atmosphere, and more profits.

The workers' participation will not have a significant effect on the costs of the company since the liquid participation is, in part, the same profit-sharing participation the workers had before, and the property participation will in most of the cases be reinvested in the firm.

The number of years the Mining Community requires to become owners of fifty percent of the capital of the firm will depend mainly on the capital of the firm, the price of the stock, the profitability of the mine and the economic and financial performance of the company. This period of time could be as brief as 12 to 13 years and maximum may be the life of the mine.

Fifty percent of the company in hands of the workers practically gives them the control of the firm, since the Mining Community has to vote as a block in the board of directors.
This point will discourage new, private enterprise, which has always been the originator of mining companies and which has to face 100 percent of the risk at the beginning, during exploration and development.

In order to avoid the Mining Community, mining firms will probably try to join the government in the form of State Associated or Special Mining Companies.

They will also try to take advantage of the tax and other benefits these companies are allowed.

In the long run most of the more important companies will be in this position and workers' property participation will be mostly in bonds or stock of COFIDE.

Since the mining industry is highly competitive, not only in Peru but also on a world-wide basis, it constantly requires more specialization, better training, and experience at all levels of activity. This includes management. Workers' representatives must have or acquire all these aptitudes, and the training must start as soon as possible by mean of scholarships, special schools, etc.

The representation of the workers in hands of incompetent people can be dangerous, not only for the workers, but for the company itself, which is the real source of wealth, jobs, taxes, and the Mining Community.

The workers' participation of the net income of the firm is highly sensitive to changes in total sales and total costs, is less sensitive to changes in new investments; and the sensitivity to changes in
revaluation of fixed assets, rate of depreciation and fixed assets turnover ratio is non-significant.
APPENDICES

The following pages contain six appendices with additional detailed information. The reason to include these appendices is to provide the reader with the same information used by the author of this Thesis to make the analysis and to reach conclusions.

The appendices are: (A) Selected articles of the General Mining Law, (B) Description of the Economic Evaluation computer program, (C) Financial data of metal mining in Peru from 1967 to 1970, (D) Tables of uses and sources of funds of metal mining, (E) Trend of wages and cost of living, and finally (F) The effect of strikes on wages.
APPENDIX A

PERUVIAN GENERAL MINING LAW

DEGREE LAW No. 18880

PRELIMINARY TITLE

I. The present Decree Law includes all that is related to the utilization of the mineral substances of the soil and subsoil of the national territory, as well as the sea, the continental shelf and ocean bed, and their respective subsoils up to a distance of 200 nautical miles from the coast, with the exception of petrol and similar hydrocarbons, fertilizer deposits, and mineral-medicinal waters.

II. Mineral deposits, regardless of the nature of the substances they contain, are the inalienable and imprescriptible property of the State.

III. The direct business initiative of the State is a basic factor in the development of the mining industry.

IV. The State grants rights to exercise activities in the mining industry to private persons or juridical entities whether national or foreign, these rights being basically subject to the system of benefits in return for work.

V. The mining industry is of public utility.
VI. The following are activities of the mining industry: general work, treatment, refining, marketing, and mining transportation. The classification of mining activities is the responsibility of the State.

VII. The primordial or main function of the mining industry is to contribute to the economic and social development of the country.

VIII. The provisions for the welfare and security of the workers contained in the present Decree Law will be basic standards in every activity of the mining industry.

FIRST PART
TITLE TWO
THE STATE IN THE MINING INDUSTRY
CHAPTER I. SPECIAL RIGHTS OF THE STATE

Article 32. Refining is the responsibility of the State. In the case of copper, this will be carried out exclusively by the State, respecting acquired rights.

For the refining of other metals, the State may award concessions to third parties in accordance with the country's development programs.

Article 33. The Ministry of Energy and Mines will lay down the marketing policy.

Article 34. The marketing of all mineral products is the responsibility of the State.
In the case of marketing within the country of non-metallic minerals, and of metallic minerals when deemed necessary, the State may grant the right of this service to private entities, without affecting the dispositions contained in Article 35, and keeping the right to participate itself in these transactions.

CHAPTER II. STATE ASSOCIATED MINING COMPANIES AND SPECIAL MINING COMPANIES

Article 40. A State Associated Mining Company is any corporation constituted in accordance with the present Decree Law, in which the State furnishes a minimum of twenty five percent (25%) of the capital and participates in management in partnership with local private individuals and/or juridical entities for the purpose of performing one or more of the mining activities, except those reserved for the State.

Article 41. A Special Mining Company is any corporation constituted in accordance with the present Decree Law in which the State provides a minimum of twenty five percent (25%) of the capital and participates in management together with foreign individuals and/or juridical entities or with both national and foreign entities with the purpose of performing one or more of the mining industry activities, except those reserved for the State.

Article 42. Associated Mining and Special Mining Companies, regardless of the extent of the State participation, do not form part of the National Public Sector.
Article 43. State participation in Associated and Special Mining Companies will be through Empresa Minera del Peru (Minero Peru).

Article 44. Associated and Special Mining Companies may be constituted in any of the types of corporations recognized by the Law of Mercantile Societies (Corporations). The contract may stipulate that the liability of the partners is limited or unlimited exclusively to its participation; that the capital be represented by shares, participation certificates, or quotas; that the management be carried out by one or more partners or by third parties; and that the duration of the company be definite or indefinite or for the time required to fulfill the purpose thereof.

Article 45. Unless the contract provides otherwise, the provisions contained in item 4 of Article 156, in Article 260, last paragraph of 259, Article 258, and Articles 188 to 207 inclusive of the Law of Mercantile Societies (Corporations) will not apply to Associated and Special Mining Companies.

Article 46. The contract should stipulate:

a. The manner in which the State and private investors will participate in the Associated or Special Mining Company, and where necessary, the regulations on how the partners may dispose of depreciations, amortizations, and reinvestments;

b. The cases in which the agreement of the State representatives in the Associated or Special Mining Company will be required in order to adopt certain resolutions;

c. The manner, occasion, and procedure for requesting the
liquidation of the Associated or Special Mining Company;

d. The rights of the partners;

e. The administrative system and powers of the administrators;

f. The appointment of the first administrators and directors;

and

g. In the case of liquidation of the Associated or Special Mining Company, the right of the State to name at least one liquidator.

Article 47. The State is not bound by the provisions of the Law of Mercantile Societies (Corporations) which limit its rights in relation to the amount of capital with which it participates; the State being free to contract the conditions of its participation.

Article 48. The Executive Power acting upon recommendations by Empresa Minera del Peru will appoint the representatives of the State in the bodies of the Associated and Special Mining Companies, with the legal and administrative authority necessary for the management of the corporation, according to the type of organization.

Article 49. The participation of the partners or shareholders in the capital may be subscribed in cash, industrial installations, in other goods, and/or in accessory services, determining the value to be attributed to the latter contributions and the criterion to be adopted for their evaluation.

Article 50. Transfers of shares, participation certificates or quotas in Associated and Special Mining Companies will be subject to the following procedure:

a. Private partners may transfer only up to forty-nine percent
(49%) of their original participation or quotas. Any transfer beyond this limit requires the approval of the State.

b. The State may not transfer its participation; and
c. In every case of transfer, the State will have preferential right to the purchase thereof.

Article 51. The constitution and statutes of the Associated and Special Mining Companies will be approved by means of a Supreme Decree with the approving vote of the Council of Ministers.

Article 52. The mere acquisition by the State of shares or participations issued by a corporation does not constitute a Special or Associated Mining Company.

Article 53. The Executive Power will grant the Associated and Special Mining Companies the benefits and guarantees specified in Article 127 of this Decree Law for a period equivalent to double the time required for recovery of the investment, reckoned from the commencement of production. It will also grant, during the period of recovery of the investment, a reduction of up to a third part of the results obtained by applying the income tax scale for resident juridical entities in force at the time of the constitution of the corporation.

Article 54. Workers of Associated and Special Mining Companies will be subject to the private-enterprise labor legislation.

Article 55. The constitution of Associated and Special Mining Companies will be tax free, including registration fees in the Public Registers and the Public Mining Register.
Article 57. In the case of Associated and Special Mining Companies in which financing of the projects is conditioned by the supply of products, the Executive Power may insure such supply, in exchange for an unrestricted participation (profit-sharing units) in the capital or other forms of compensatory services.

Article 58. Expansions effected by Associated and Special Mining Companies may enjoy the benefits and guarantees laid down in Article 127 of the present Decree Law provided they comply with the conditions of Article 129.

TITLE FIVE
OBLIGATIONS OF HOLDERS OF MINING RIGHTS
CHAPTER II. EXPLOITATION CONCESSIONS

Article 84. Within twelve months following the date of notification of the auto de amparo (decree of full authorization), the claimant who is not complying with the obligatory minimum annual production will present to the General Mining Bureau a schedule of the operations he expects to carry out for its exploitation, including designs, project, acquisitions and investments. He must also indicate the source of financing.

The total period for the execution of the project and the commencement of the exploitation may not exceed five years, from the date of presentation of the schedule of operations except in duly justified exceptional cases, when the term may be longer, with approval granted by Supreme Decree with the approving vote of the Council of
Ministers.

The obligation for minimum annual investments in the period of execution of the project and start of the exploitation, will be that which is stipulated in the operations schedule that is presented, and may not be less for the first year than thirty per cent of the amount of the total investment divided among the number of years programmed. For the following years the same rule will be applied to the balances, the percentage factor for the second year being fifty percent; for the third year, sixty percent; for the fourth year, eighty percent and for the fifth year, one hundred percent.

In operations schedules for less than five years the same rule will be used, with the requirement of a percentage factor of one hundred percent for the last year.

In projects which require an investment of over seventy million pesos; the critical path method will be applied, both to the overall operations and to each of the basic projects.

Article 85. During the minimum investment period the concessionaire may request an extension of the term for reasons of force majeure, fortuitous events, and other duly justified causes. The mining authority will rule on the procedure for applications in cases of force majeure or fortuitous events. Extension for any other reasons will be granted by Supreme Decree with the approving vote of the Council of Ministers.

Article 86. On the expiry of the time limit for the execution of the project, the minimum investment system will be replaced by that of
minimum production.

The obligatory minimum annual production will correspond to a part of the mineral reserves contained in a concession or an economic and administrative unit and will be governed by the following scale:

A. - For metallic non-ferrous minerals:

<table>
<thead>
<tr>
<th>Mineral Reserves (Million MT.)</th>
<th>Minimum Enforced Production per year (Metric tons)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than ten</td>
<td>1/15 of the reserve</td>
</tr>
<tr>
<td>10 to 20</td>
<td>1/20 of the reserve but not less than 670,000</td>
</tr>
<tr>
<td>20 to 50</td>
<td>1/30 of the reserve but not less than 1,000,000</td>
</tr>
<tr>
<td>50 to 100</td>
<td>1/40 of the reserve but not less than 1,670,000</td>
</tr>
<tr>
<td>100 or more</td>
<td>1/60 of the reserve but not less than 2,500,000</td>
</tr>
</tbody>
</table>

B. - For deposits of alluvial gold, coal, iron and non-metallic minerals:

<table>
<thead>
<tr>
<th>Mineral Reserves (Million MT.)</th>
<th>Minimum Enforced Production per year (Metric tons)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than ten</td>
<td>1/25 of the reserve but not less than 335,000</td>
</tr>
<tr>
<td>10 to 20</td>
<td>1/35 of the reserve but not less than 400,000</td>
</tr>
<tr>
<td>20 to 50</td>
<td>1/50 of the reserve but not less than 575,000</td>
</tr>
<tr>
<td>50 to 100</td>
<td>1/70 of the reserve but not less than 1,000,000</td>
</tr>
<tr>
<td>100 or more</td>
<td>1/100 of the reserve but not less than 1,430,000</td>
</tr>
</tbody>
</table>
When, in an economic and administrative unit, newly found reserves oblige the concessionaire to expand his annual production by more than 20 percent, he may request the mining authority to stipulate a time limit in which to adapt his minimum annual production to his new reserves, item F of Article 104 not being applicable for the said term in this case.

In the case of coal, barite, phosphates, or minerals for which use is conditioned to the capacity of the domestic market, the mining authority may authorize the reduction of the obligatory annual minimum production in proportion to the demands of their markets.

Article 88. The concessionaire is obliged to present yearly to the General Mining Bureau, on the date fixed by the Regulations, a sworn declaration of the mineral reserves and production obtained from each concession. This statement must be accompanied by the geological and works plans, and the documentation and calculations to justify the reserves.

The concessionaire will develop a yearly working program which allows him to maintain at least the volume of proven reserves until technical economic conditions show that this is impossible.

The sworn declaration and the documents accompanying this are of confidential nature.
TITLE SEVEN
TAX REGIME

Article 119. Those persons holding deeds to mining activities will pay only income tax, and are exonerated therefore from all other taxes, this applying both to individuals or juridical entities undertaking productive activity, and to the concession and products obtained from it, including the stamp tax on sales or treatment of minerals. This exoneration refers exclusively to mining activity.

The tax applied to the juridical entities domiciled in the country referred to in Article 60 of Supreme Decree No. 287-68-HC, modified for mining activity by Article 13 of Decree Law No. 18225, will, be applicable in the case of such activity to any corporation constituted in accordance with the Law of Mercantile Societies (Corporations).

The tax specified in the previous paragraph will be calculated in the following manner:

a. Up to S/. 100,000,000.00, the following progressive accumulative scale will be applied:

<table>
<thead>
<tr>
<th>Range</th>
<th>Tax Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Up to S/. 100,000.00</td>
<td>20%</td>
</tr>
<tr>
<td>From S/. 100,001.00 to 500,000.00</td>
<td>30%</td>
</tr>
<tr>
<td>From S/. 500,001.00 to 50,000,000.00</td>
<td>35%</td>
</tr>
<tr>
<td>From S/. 50,000,001.00 to 100,000,000.00</td>
<td>40%</td>
</tr>
</tbody>
</table>

b. The following proportionate rates will be applied to the excess over S/. 100,000,000.00 based on gross yield of the mining investment:
<table>
<thead>
<tr>
<th>Proportion</th>
<th>Gross Income</th>
<th>Investment Up to</th>
<th>Juridical Entity Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.10</td>
<td></td>
<td></td>
<td>29.0 %</td>
</tr>
<tr>
<td>0.12</td>
<td></td>
<td></td>
<td>30.5 %</td>
</tr>
<tr>
<td>0.14</td>
<td></td>
<td></td>
<td>32.0 %</td>
</tr>
<tr>
<td>0.16</td>
<td></td>
<td></td>
<td>33.0 %</td>
</tr>
<tr>
<td>0.18</td>
<td></td>
<td></td>
<td>34.5 %</td>
</tr>
<tr>
<td>0.20</td>
<td></td>
<td></td>
<td>36.0 %</td>
</tr>
<tr>
<td>0.22</td>
<td></td>
<td></td>
<td>36.5 %</td>
</tr>
<tr>
<td>0.25</td>
<td></td>
<td></td>
<td>37.0 %</td>
</tr>
<tr>
<td>0.30</td>
<td></td>
<td></td>
<td>38.7 %</td>
</tr>
<tr>
<td>0.35</td>
<td></td>
<td></td>
<td>39.5 %</td>
</tr>
<tr>
<td>0.40</td>
<td></td>
<td></td>
<td>40.5 %</td>
</tr>
<tr>
<td>0.45</td>
<td></td>
<td></td>
<td>41.5 %</td>
</tr>
<tr>
<td>0.50</td>
<td></td>
<td></td>
<td>42.5 %</td>
</tr>
<tr>
<td>0.55</td>
<td></td>
<td></td>
<td>44.0 %</td>
</tr>
<tr>
<td>0.60</td>
<td></td>
<td></td>
<td>45.0 %</td>
</tr>
<tr>
<td>0.65</td>
<td></td>
<td></td>
<td>46.0 %</td>
</tr>
<tr>
<td>0.70</td>
<td></td>
<td></td>
<td>47.0 %</td>
</tr>
<tr>
<td>0.75</td>
<td></td>
<td></td>
<td>48.5 %</td>
</tr>
<tr>
<td>0.80</td>
<td></td>
<td></td>
<td>49.5 %</td>
</tr>
<tr>
<td>0.85</td>
<td></td>
<td></td>
<td>50.5 %</td>
</tr>
<tr>
<td>0.90</td>
<td></td>
<td></td>
<td>52.0 %</td>
</tr>
<tr>
<td>0.95</td>
<td></td>
<td></td>
<td>53.0 %</td>
</tr>
<tr>
<td>1.00 or more</td>
<td></td>
<td></td>
<td>55.0 %</td>
</tr>
</tbody>
</table>
For the application of the tax specified in paragraph b of this article, investment, for established mining companies, will be considered as the book value of the net fixed assets for the business year corresponding to the first application of this scale. In subsequent business years, this figure will be increased with the investments in fixed assets made during the year, and authorized revaluations; the value thus reached will be reduced by five per cent.

In the case of new operations, the calculation will begin on the original investment required for:

a. Acquisition of the concession;
b. Preliminary development of the mine;
c. Purchase of equipment and plant necessary to operate; and
d. Expenses for the installation of the equipment and plant.

For the purposes of this article, gross income is considered to be the difference between the sales price and costs, without taking into account interest, depreciation, and amortization of the fixed assets.

In the case of Special Mining and Associated Mining Companies or limited responsibility commercial corporations and other corporations not considered as juridical entities referred to in the last part of Article 14 of Supreme Decree No. 287-68-HC, the income tax per head in the corporation will be treated as follows:

- If the partners who form the corporation are private individuals, the Third Category Income Tax paid by corporations for the taxable period, will be considered as credited to the individuals in accordance with the percentage of capital contributed. Such credit will be treated as
payment of Income Tax up to the limit if the same without prejudicing the fact that the individuals may make up the Global Income with the Third Category Income, which should be attributed to them at the close of the taxable period.

- If the partners who form the corporation are limited liability companies, the profits due to them at the close of the taxable period in proportion to their participation in the capital, will not be taken into account for the calculation of the taxable income, the tax having been paid at source; the final distribution of these profits by the limited liability companies will be subject to Income Tax on the dividends in accordance with prevailing legal dispositions.

- If the partners who form the corporations are subsidiaries of foreign companies, the profits attributed to them in proportion to their participation at the close of the taxable period, will not be taken into account for the calculation of the taxable income, as the tax has been paid at source; however, said income after deduction of the tax due, will constitute the income at the disposal of the holder abroad, liable to the thirty percent applied in accordance with item b of Article 61 of Supreme Decree No. 287-68-HC.

Article 120. In the case of Special Mining Companies constituted under any of the forms allowed by the Law of Mercantile Societies (Corporations), except limited liability companies and limited partnerships, in which one or more subsidiaries of companies constituted abroad participate as partners, the tax paid referred to in the previous article will be distributed on a prorrata basis in proportion to the amounts
contributed each, in order that these payments may be accredited in the respective countries from which the investments came. Similarly, deprecations and amortizations carried out and profits obtained, will be distributed on a prorrata basis in the same proportion, as well as the reserve for reinvestment specified in Article 124 item c for the purpose of utilization of foreign exchange and exoneration from income tax. Disposal of deprecations, amortizations, and reinvestments by the subsidiary of a foreign company will be subject to the rules, established in each case by the respective contract of constitution of the said corporations.

If any of the partners of the corporations referred to in this article should not make the reinvestment to which he is entitled, he is obliged to pay income tax in the corporation.

Article 121. The tax referred to in Title Two of Supreme Decree No. 287-68-HC does not affect fixed goods belonging to the concessionaire required for the mining exploitation, which are specified directly and immediately for use there, neither is he subjected to the regulations laid down in Article 43 of the said Supreme Decree, and depreciation will be calculated only up to the cost of acquisition of such goods, applying for this purpose the rates stipulated by the General Taxation Bureau.

Article 122. The purchase value of the claims and/or mining concessions acquired by mining producers may be amortized within the time limit stipulated in item h of Article 48 of Supreme Decree No. 287-68-HC.
Article 123. Profits obtained from the transfer of claims and/or mining concessions will be considered as third category income for the purpose of applying Income Tax.

TITLE EIGHT
PROMOTIONAL DISPOSITIONS
CHAPTER I. BENEFITS AND GUARANTEES

Article 124. The holders of title to mining activities may take advantage of the following benefits:

a. Depreciation at the rate of one hundred percent investments in machinery, equipment, installations, and housing made in each fiscal year up to a value of 10 million soles. Larger investments for the same purpose up to the amount of thirty million soles may be amortized at the annual rate of twenty percent, except in such cases where the customary rates allow higher amortizations.

b. Revaluation of the undepreciated balance of machinery, industrial equipment, and other fixed assets, in the event of a fluctuation in the value of national currency certified by the Central Reserve Bank of Peru with respect to the rate of exchange of the foreign exchange certificate in a proportion exceeding five percent.

Revaluation and capitalization of the revaluation surplus are exempt from income tax, registration, stamps, and all other taxes.

The revaluation surplus which may be capitalized tax free will be arrived at by deducting from the amount of the revaluation, the exchange
adjustment corresponding to debts in foreign currency originated by the purchase of the revalued assets;

c. Reinvestment in the activities of their own firm or in other mining activities, free of all tax, up to forty percent of profits before tax, with a maximum annual limit of three hundred million soles in accordance with the reinvestment program and time limits for utilization of reserves, previously approved by the General Mining Bureau. In order to take advantage of the reinvestment benefits, mining producers must show that they have complied with the programs for the development of their concessions in accordance with the norms laid down in the Regulations. The reinvestment program, together with the documents which prove compliance with the development programs, will be presented up to June 30 each year.

In the case of the State Associated Mining Company and Special Mining Companies with the State participation, the three hundred million soles limit for reinvestment may be increased, by means of a supreme resolution countersigned by the Ministers of Energy and Mines, and Economy and Finance, with a prior report from the General Taxation and Mining Bureau.

The Executive Power is authorized to readjust the limit for reinvestments in accordance with variations of the rate of exchange.

The capitalization of reinvestments specified in this article is exempt from income tax, registration, and any other tax, including stamp taxes; and
d. Capitalization free of all taxes including income tax, all or part of net profits of each fiscal year within the six months following the drawing-up of the balance sheet.

Article 125. Importations --when the holders of mining activities import machinery, equipment, vehicles, materials, spare parts and, in general all products required for their operations-- they will pay ten percent of the listed import duties in the case of inputs. Consular fees will be paid at the rate of eight percent and the tax on sea freight at the rate of four percent. The procedure for reduction of import duties and the sanctions for infractions will be laid down in the Regulations.

Import duty reductions will not be allowed for capital goods and inputs which are produced in this country, barring those that do not meet the requirements of quality, quantity, and availability which will be stipulated by the Ministry of Energy and Mines in coordination with the Ministry of Industry and Commerce.

CHAPTER II. BENEFITS AND GUARANTEES

ENSURED BY CONTRACT

Article 126. The Executive Power, by means of a contract to be approved by supreme resolution countersigned by the sectors of Energy and Mines and Economy and Finance, may provide a guarantee of tax stability to producers who install or expand treatment plants with a total processing capacity of up to 2,000 metric tons a day.
The tax stability guarantee makes the holder of the mining activity liable only to the tax regime in force at the time of signing the contract for the following periods:

a. For installation of a plant, up to ten years;

b. For increase in treating capacity in the order of twenty to thirty percent, up to five years; and

c. For increase exceeding thirty percent, up to ten years.

Increases will be calculated on the maximum production prior to expansion.

Article 127. In order to promote investment and facilitate financing of mining projects referring to an economic and administrative unit, the Executive power, by means of a supreme decree with the approving vote of the Council of Ministers, is authorized to ensure the following regime by means of contract:

a. Stability of the tax regime in force at time of the signing of the contract;

b. The faculty to increase the yearly rate of depreciation or amortization reserve of the machinery, industrial equipment, and other fixed assets up to a maximum limit of twenty percent per annum as a overall rate, in accordance with the conditions characteristic to each project; and

c. Revaluation of the undepreciated balance of the machinery and installations, in the event of a fluctuation in the value of the national currency certified by the Central Reserve Bank of Peru with
reference to the rate for exchange of foreign exchange certificates in a proportion greater than five percent, in relation to the currency of the country with which the investment was made. Revaluation and capitalization of the revaluation surpluses will be exempted from income, registration, and stamp and other taxes.

In addition, the Executive Power shall, by means of contracts, assure the mining producer of the guarantees contained in legal provisions in force at the time of signing the relevant contract, with regard to foreign currency availability derived from product sales non-discrimination insofar as exchange is concerned, and product marketing in accordance with the rules contained in Chapter One of the Second Title of the First Part of the Present Decree Law.

Article 128. The duration of the contract referred to in Article 127 will be the time required for recovery of investments through gross profits less taxes on income and on share property and the contributions referred to in Articles 281 and 338.

Gross profit is understood to be the difference between the sales price and costs, without deducting depreciation and amortization of invested capital or the reinvestments specified in clause c of Article 124.

Investment, for the purposes of this article, is understood to be the amount of money needed for the acquiring of a concession, the preliminary development of the mine, purchase of equipment and plant, installations, and other fixed assets required to begin operations, and
the working capital required in each case.

Reinvestments specified in clause c of Article 124 will not be taken into account when calculating the amount of the recoverable investment.

The contract will be rescinded in the event of the holders of the mining activity not obtaining financing within a time limit of eighteen months, reckoned from the date of signature, or in the event that the works are not begun or finished within the terms specified therein.

Article 129. For projected expansions designed to increase production by at least twenty percent in terms of fine content of the final product, as well as the expansion or introduction of processes which improve the quality of the final product and the aggregate value of this by at least the percentage fixed in the Regulations, in an economic and administrative unit with a capacity greater than two thousand metric tons of treatment per day, the contract referred to in Article 127 may be signed, subject to a prior favorable report from the General Mining Bureau.

For this purpose, the conditions established by contract will run for the period required to recover the investment in such expansions, through gross profit less taxes on income and share property, and the contributions referred to in Articles 281 and 338.
CHAPTER III. MINING INVESTMENT FUND

Article 132. The Mining Investment Fund has the aim of promoting and developing the national mining industry, particularly small mining, and intensifying the intervention of the State in mining entrepreneurial activities.

CHAPTER IV. SPECIAL DISPOSITIONS

Article 136. Article 181 of the Text of Decree Law No. 17716, (Agrarian Reform Law), will be interpreted in the sense that the Agrarian Debt Bonds referred to in the said law may be utilized in investments in the Mining Sector in accordance with the conditions laid down by the Regulations of the present Decree Law.

Article 137. For mining activities that are begun in the jungle region and other areas of the national territory which due to geographic difficulties have not enjoyed active mining development, areas will be established by the Regulations of the present Decree Law; during a period of ten years reckoned from the date of publication of this Decree Law, these areas will enjoy the following additional benefits:

a. For every ton of metal and/or concentrate marketed, the concessionaire will receive from the State a payment certificate made out in his name for ten percent of the FOB or ex-factory value of the product sold, with a minimum of two hundred soles and a maximum of six
hundred soles per dry metric ton. These limits may be re-adjusted by supreme decree;

b. This certificate will be valid until December 31, 1985, and will be issued by the Ministry of Economy and Finance upon presentation of the reception note of the product, issued by the State entity in charge of the marketing. It may be used exclusively for paying all kinds of fiscal dues arising from the same mining activity; and

c. Exploration concessionaires, before the fifth year is up, may obtain an extension on their concessions for up to another five years, if they can satisfy the General Mining Bureau that they have carried out the minimum investments referred to in Article 78, and present an investments plan for the additional period, the amount of which per year will be the same as for the fifth year of exploration laid down in the said article. Exploration concessions arising from prospecting permits may not enjoy this extension.

Article 138. Foreign engineering companies and/or professionals acting as advisors and/or executing projects in mining, which include pre-feasibility and feasibility studies, geological, geophysical, geochemical, and metallurgical studies; support and research services; and definitive projects, inclusive of design and supervision of works, will be exempted from all or part of the income tax when they are associated with local engineering companies and/or professionals, to constitute companies or associations, provided that their participation contributes technology not available in the country. All the operations of these companies must be carried out in Peru, except those which, for
reasons set before by the General Mining Bureau and approved by the body, must be carried out abroad.

The exoneration referred to in this article will be one hundred percent when local participation in the company is fifty-one percent or more, and will be reduced proportionately when this participation is less than fifty-one percent.

In order to enjoy this benefit, the local and foreign companies and professionals must be approved by the General Mining Bureau, which will open a special register for this purpose. The Regulations will lay down the rules and procedures for this approval.

When associations of professionals are involved, the participation contributed by each one must be specified in a public document.

TITLE NINE

SMALL MINING PRODUCERS

Article 139. Small mining producers are those who combine the following conditions:

a. Possessions by any title, in the form of exploration claims and/or exploitation concessions, less than three hundred hectares and having an annual production of more than one hundred thousand soles and less than ten million soles; or

b. Possessions by any title, in the form of exploration claims and/or exploitation concessions, from three hundred to one thousand hectares, and having an annual production of more than five hundred
thousand soles and less than ten million soles.

In both cases, production and reserves must maintain the proportions fixed in Article 86.

Small mining producers will also be understood as those who, mustering the above conditions, are also owners of processing and/or refining concessions, only when these arise from their exploitation operations.

Article 147. The small producer is exonerated from payment of all taxes, including fiscal stamp duty and registration fees in the Public Mining Register, levied on their operations of financing, acquisition and/or transfer, whether with State entities or private companies, up to an annual total of operations of ten million soles.

Article 148. The small mining producer is exempted from payment of taxes on Stock Ownership.

THIRD PART
TITLE ONE
MINING COMMUNITY
CHAPTER I. - NATURE, PURPOSES AND MEMBERS

Article 275. In each mining company, with the exception of Public Sector service companies, a Mining Community will be set up as a private legal entity, to represent the total number of workers who really and effectively work in the company, and with the purpose of participating in the ownership, management and profits generated by the company.
Article 276. The aims of the Mining Community are:

a. To strengthen the company by means of the united action of the workers in management, in the productive process and in corporate ownership, as well as by stimulating constructive forms of relationship between capital and labor.

b. To unify the action of the workers in the management of the company, to protect the rights and interests as proprietors given to them in this Decree-Law;

c. To administer the goods received for the benefit of the workers;

d. To promote the social, cultural, professional, and technical development of the workers;

Article 277. Members of the Community are the steady workers who really and effectively work full-time during the legal working-day in the company, according to the particular characteristics of mining activities.

Article 278. A worker may be a member of only one Mining Community; when he leaves a company, he ceases to be a member of the Community.

Article 279. The Mining Compensation Community is hereby created as a private legal entity, with the purpose of strengthening the solidarity of the workers of the sector by the compensated redistribution of the contributions it receives.

Article 280. All the Mining Communities set up in accordance with this Decree-Law are members of the Mining Compensation Community. When
a Mining Community is dissolved, it ceases to be a member of the Mining Compensation Community.

CHAPTER II. - PARTICIPATION OF THE WORKERS IN THE COMPANY

Article 281. For the purposes of the participation of the workers, the mining companies will deduct free of all taxes, ten percent of their net income which will be applied in the following manner:

a. Four percent as liquid participation, in cash;
b. Six percent as property participation.

No type of bonus, reward, or voluntary payment given to the personnel which does not constitute payment for services rendered will be regarded as an expense of the company, except the National Holidays and Christmas bonuses.

Article 282. The four percent of the net income which constitutes the liquid participation of the workers will be distributed in the following manner:

a. Twenty percent will be given directly to the Mining Community; and

b. The remaining eighty percent will be given, through the Mining Community, to the Mining Compensation Community, which adding together all these contributions, will proceed to re-distribute them among all the Mining Communities in direct proportion to the number of
man-days worked by each company.

Article 283. Each Mining Community will set up a fund for the liquid participation, made up of the contributions referred to in the previous article, and the total of which will be distributed annually among all the workers of the company in the following manner:

a. Fifty per cent in equal parts; and

b. The remaining fifty per cent in direct proportion to the basic personal remunerations appearing on the wage-sheets.

Article 284. The liquid participation takes the place, in mining companies, of the system of profit sharing set up by Law No. 11672 and other complementary dispositions.

Article 285. The six per cent corresponding to the property participation of the workers will be compulsorily re-invested in the same company, and capitalized free of tax immediately, until it reaches fifty per cent of the capital of the company. If there is no program of reinvestments approved by the Ministry of Energy and Mines, and ownership of fifty per cent of the capital has not been reached, this amount will be used to acquire the corresponding part of the capital belonging to other members or shareholders.

When ownership of fifty per cent of the capital has been reached, the amount representing the six per cent will be invested by the Mining Community directly in the Development Finance Corporation, except in cases where it is necessary to maintain the ownership of fifty per cent of the capital of the company, to acquire Mining Community shares
belonging to members leaving and/or to compensate members leaving who are not owners of individual shares.

Article 286. As an exception, Public Sector mining companies, State Associated Mining Companies and Special Mining Companies will contribute to the Mining Community six percent of their net income in bonds in the same company; failing this, this contribution will be made in stock of the Development Finance Corporation.

All the other dispositions laid down in this Title are applicable to the Mining Communities included in this article.

Article 287. The shares, participations or bonds acquired with the six percent due as the property participation will be assigned:

a. Twenty percent directly to the Mining Community of each company, and

b. The remaining eighty percent through the Mining Community of each company to the Mining Compensation Community. The latter will issue shares representing the total property contributed by all the Mining Communities, and will apportion them out among the communities in direct proportion to the number of man-days worked by each company.

Article 288. Increases of capital made in a mining company after ownership of fifty percent of the capital has been reached will be made in such a way that the said percentage is maintained.

Article 289. The Community will cease to participate in the compensation system set up in Articles 282 and 287 when the company in question does not generate a net income which comes up to the minimum
indices to be laid down in the Regulations. For a renewed enjoyment of these benefits, it is an indispensable requirement for the company to generate a net income exceeding the said minimums.

Article 290. The Mining Compensation Community will receive the dividends or interests due to it, which will be distributed among all the Mining Communities in proportion to the shares of the Mining Compensation Community held by each one of them.

Management and other rights arising from the shares in the companies and which, by legal mandate, are in the hands of the Mining Compensation Community will be exercised directly by the Mining Community of the company.

Article 291. The board of directors of the mining company will include from the date of registration of the Mining Community, at least one representative of the latter, this number rising in accordance with participation in the capital. This increase will be a function of the total number of shares or participations held by both the Mining Compensation Community and the Mining Community.

In the case referred to in Article 286, the board of directors of the company will include two representatives of the Mining Community from the date of registration of the latter.

Article 292. When the workers have reached an ownership of fifty percent of the capital of the company, the President of the Board will be elected by simple majority of the directors. In the case of a tie, and excepting an alternating agreement among the parties, lots will be
drawn, following the procedure for the election of directors laid down in Article 158 of the Law of Mercantile Societies.

CHAPTER III - ORGANIZATION AND ADMINISTRATION OF THE MINING COMMUNITIES

Article 293. The management, administration and control of the Communities will be in the hands of:

a. In the Mining Community:
   1) The General Assembly; and,
   2) The Community Council.

b. In the Mining Compensation Community
   1) The General Assembly of Delegates; and,
   2) The Executive Committee.

Article 294. The General Assembly is the supreme authority of the Mining Community; it includes all the members of the latter, with equal rights, its decisions being sovereign and binding for all without exception.

Article 295. The Community Council is the executive body of the Mining Community.

Its composition, form of elections, functions and attributes will be laid down in the Regulations.

Workers owning shares or participations in the capital of the same
company which do not come from the Mining Community may not be members of the Community Council. Likewise, a worker may not simultaneously be a member of the Community Council and a union leader.

Article 296. The Community Council may carry out the examination of all the accounting books and documents having a bearing on the formation of the company's net income, through representatives of the Community on the board of directors. These representatives may carry out this examination advised by any member of the Community designated by the Council itself and/or by any specialist contracted for that purpose.

This examination will take place in the offices of the company.

Article 297. The General Assembly of Delegates is the supreme authority of the Mining Compensation Community; it is made up of a representative of each of the Mining Communities with equal rights, and its decisions are sovereign and binding for all.

Article 298. The Executive Committee is the administrative body of the Mining Compensation Community. Its composition, form of election, functions and attributes will be laid down in the Regulations.

Article 299. The members of the Community Council and the Executive Committee will be elected annually by halves, for two year periods, and may not be re-elected for the period immediately following. The Regulations will lay down the rules for the first elections.

Article 300. The Mining Community of each company will be installed as from thirty days after the issuing of the Regulations and,
in any case, within a time-limit of not more than ninety calendar days, summoned by the worker of highest administrative status in the company. The installation will take place in an assembly attended by the workers of the company; the worker of highest administrative status in the company will preside over the assembly.

Should the Mining Community not be installed in the time-limit laid down, the Ministry of Energy and Mines will proceed to install it on its own authority or upon receiving a request from any worker in the company.

The Mining Compensation Community will be installed on the authority of the Ministry of Energy and Mines within a time-limit of not more than sixty calendar days following the termination of the period for installing the Mining Communities.

Article 301. The Mining Communities of companies which have not yet begun the productive process will be installed within thirty days after this has begun.

Article 302. A register of Mining Communities will be opened in the General Mining Bureau of the Ministry of Energy and Mines, in which will be entered those Communities which have complied with the requirements laid down in this Decree-Law.
CHAPTER IV - THE PROPERTY OF THE COMMUNITIES

Article 303. The property of the Mining Community will be made up of:

a. Shares or participations (profit-sharing units) in the company.

b. Shares in the Mining Compensation Community;

c. Securities of the Development Finance Corporation;

d. Bonds of the company, where applicable;

e. The General Fund of the Mining Community; and

f. Other goods acquired in any capacity.

Article 304. The General Fund of the Mining Community will consist of:

a. The Ordinary Fund, which includes:

1) Dividends, profits or interests on shares, participations or bonds held.

2) Other incomes obtained in any capacity.

b. The Exceptional Fund, to compensate the workers who leave, when the ordinary fund is not sufficient. It is made up of an annual amount of not more than twenty percent of the annual total of the reserve set aside for compensating the workers. These allocations will not bear interest, and will be returned progressively by the Mining Community, and must in any case be completely liquidated when the ordinary fund reaches a sufficient amount to cover its necessities.

Article 305. The General Fund will be used for:
a. Paying the members of the Community who have worked for more than a year in the company the dividends, profits and interests which the Mining Community has received before reaching fifty percent of the capital of the company, setting aside previously a percentage of not less than twenty percent for the use of the Mining Community and administrative expenses;

The distribution will be made in the following way:

- Fifty percent to all equally; and
- Fifty percent in proportion to the years of service as a member of the Community;

b. Compensating members who leave and who are not individual owners of shares issued by the Community, but this compensation must not exceed annually half the disposable resources of the fund.

c. Acquiring the shares of the Community belonging to members leaving.

d. Paying dividends to workers who have shares in the Community; and to all workers the profits or interests generated by the shares or bonds held by the Community and still not converted into shares of the latter; reserving in all cases a percentage of not less than twenty percent for the same purposes considered in clause a of this article.

Any other profit received by the Community will be dealt with in the same way;
e. Meeting the administrative costs of the Community, which
will not exceed five percent of the annual income of the Fund; and

f. Maintaining when necessary the percentage of ownership
reached by the Community in case when the capital is increased.

Article 306. The compensation to be received by a worker leaving a
company before fifty percent of the capital has been reached is obtained
by dividing half the value of the property of the Mining Community at
the time he leaves, by the sum of the days really and effectively worked
by all the workers as members of the Community, and multiplying the
quotient by the number of days worked by the worker leaving, as a member
of the Community, without taking into account the amount of the
remunerations received.

Article 307. Once fifty percent of the capital of the company is
reached, the Mining Community will issue and distribute shares individ-
ually to its members.

In the case referred to in Article 286, the Mining Community will
issue and distribute shares individually when the sum of the value of
the bonds it possesses in the company and/or the value of its investments
in the Development Finance Corporation are equal to fifty percent of the
value of the capital of the company.

These shares are untransferable. Only in the case of workers leaving
or of liquidation will they be acquired by the Mining Community which
issued them.

Article 308. The value of each share issued for the first time by
the Mining Community will be obtained by dividing the total value of its property by the sum of the months worked by all the workers who are members of the Community, from the time the latter was installed.

The number of these shares which are due to each worker in individual ownership will be equal to the number of months worked by the holder.

Article 309. After the first distribution of shares, the Mining Community will issue new shares of the same value every three years for the total of the property acquired in that period. The distribution will be made in accordance with what is laid down in the preceding article and in proportion to the number of months worked by the holder in that period.

Article 310. The property of the Mining Compensation Community will be made up of:

a. Shares, participations or bonds of the mining companies;

b. Securities of the Development Finance Corporation;

c. The Mining Compensation Community Fund; and

d. Other goods acquired in any capacity.

Article 311. The Mining Compensation Community Fund will be made up of:

a. Dividends, profits or interests on the shares, participations or bonds it possesses;

b. The income corresponding to the shares in companies which
have gone into liquidation or bankruptcy; and

   c. Other income obtained in any capacity.

Article 312. The Mining Compensation Community Fund will be used for:

   a. Meeting administrative costs, which may not exceed one percent of this fund;

   b. Paying the dividends due on the shares of the Mining Compensation Community held by each Mining Community; and

   c. Acquiring the shares it has issued and which belong to the Mining Community in cases of dissolution or liquidation of the Mining Communities.

Article 313. The shares and participations or bonds which form part of the property of the Communities may not serve as guarantee except when operations with the State Banks are involved, nor may they be transferred for any reason at all.

Article 314. The value of the shares of the company in the cases of purchase specified in this Title will be determined by agreement between the contracting parties, on the basis of their stock exchange quotation; in the absence of an agreement, the evaluation will be made following the procedure laid down by the National Securities Commission.

Article 315. Small mining producers and corporatively owned companies will not take part in the Mining Community system set up by this Decree Law. The system for workers in these companies will be controlled by a special legal disposition.
CHAPTER V. - DISSOLUTION AND LIQUIDATION
OF THE COMMUNITY

Article 316. The dissolution of the Community takes place when the company in question goes into liquidation or bankruptcy. The General Assembly will designate a commission to take charge of the liquidation of the property of the Community. The Mining Compensation Community is obliged to acquire the shares it has issued and those which belong to the Community in dissolution, using for that purpose the necessary part of its Fund.

Article 317. Once the liquidation has been concluded, the commission in charge will proceed to apply for annulment of the inscription of the Mining Community to the General Mining Bureau of the Ministry of Energy and Mines.

CHAPTER VI. - MINING COMMUNITIES IN VARIOUS TYPES OF COMPANIES

Article 318. When single-person companies are involved, at the time when, for the first time and by legal mandate, the Mining Community obtains six percent of the net income, the company will convert itself into a limited company in which the Mining Community is a partner, in the appropriate proportion.

The Mining Community will elect and include a representative on the
board of directors of the mining company. Decisions will be taken in accordance with the participation of the partners in the company’s capital.

The deed of constitution of the new limited company is compulsory and is exonerated from all taxes and from the inscription fee in the Mercantile Register and in the Public Mining Register.

Article 319. In mining companies constituted as Limited Liability Commercial Companies, the Mining Community will elect and include a member on the board of directors. Decisions will be taken in accordance with the participations of the members in the capital of the company.

Article 320. Mining companies constituted as collective corporations will, from the coming into force of this Decree-Law, transform themselves into limited partnerships or into limited companies. If the transformation is into a limited partnership, the Mining Community will elect and include a representative who will enjoy all the administrative duties of collective partners, maintaining his responsibility as a silent partner. The number of representatives of the Community will increase in proportion to the amount of its participations in the capital of the company. Decisions will be taken in accordance with the participation of the partners in the company’s capital.

Article 321. In mining companies constituted as limited companies the Mining Community will elect and include a representative to take a seat on the board. The number of representatives of the Community on the board will increase in proportion to the capital of the Community has in the company, adhering to the stipulations of Article 158 of the Law of
Mercantile-Societies (Corporations).

Article 322. In the shareholders' meetings and in the managerial bodies of the companies, the Mining Community will vote as a bloc in accordance with the number of shares it holds. The President of the Community Council will be the representative of the Mining Community in the shareholders' meeting, and will act as the bearer of the mandate of the General Assembly; he will carry out the same representative functions on the Supervisory Boards of companies which have them.

Article 323. For the purposes of this Title, branches of companies constituted abroad will declare within the time limit of sixty days, from the coming into force of this Decree-Law, the amount of capital effectively established in this country, which, for the application of Article 285, will constitute the company's capital. This will be divided up into equal parts represented by an equal number of participation certificates. A board of directors must also be designated.

The issue of the participation certificates will not be liable to the payment of stamp duty. The characteristics and other features of the said certificates, as well as the composition and functions of the board of directors will be subject to the stipulations contained in the Regulations to this Decree-Law.

Article 324. Technical Personnel with specific work contracts for limited periods of time will not be considered stable personnel of the company.

Article 325. In contracts made with the State by companies
with foreign capital participation, the rights of the Mining Community laid down in this Decree-Law must be stipulated.

PART FOUR

COMPLEMENTARY DISPOSITIONS

Article 337. The "Mining Scientific and Technological Institute" is hereby created as an autonomous public body in the sector of Energy and Mines, mining sub-sector, the purpose of which will be mining scientific and technological research and the establishment of mining technical standards. It will be governed by a special Decree-Law. It will devise its programs of scientific and technological research on the basis of the directives of the Ministry of Energy and Mines.

Article 338. All mining companies will deduct one percent of their net income for the maintenance of the Mining Scientific and Technological Institute.

Article 339. The Ministry of Energy and Mines will recognize only those associations of mining companies and unions which have the practice of direct elections, one member one vote and free incorporation of new members in their statutes. The Ministry of Energy and Mines will encourage the constitution of and affiliation to these entities.
APPENDIX B

ECONOMIC EVALUATION PROGRAM

Introduction

This program was written in Fortran IV language and designed to be used with the PDP-10 time sharing computer system of the Colorado School of Mines.

It is assumed that all the calculations are made at the end of the year but the investments were made at the beginning of the year.

Definition of Terms

GROSS INCOME. - For calculation of income tax, Gross Income is defined in Article 119 paragraph b as the difference between the Sales Price and Costs, without taking into account interest, depreciation, and amortization.

SALES PRICE. - Equivalent to total volume of production times the price.

TOTAL REVENUE. - Sales price plus other incomes.

COSTS. - The same as operating costs (labor, supplies, power, etc.)

NET INCOME. - Net income is defined in Supreme Decree No. 287-68-HC, as total revenue less operating costs, depreciation, amortization, and other costs such as interest, insurance payments, organization expenses, social reserves, extra payments to workers, bonus, donations, payments to consultants, schools, hospitals, etc.

PARTICIPATIONS. - Includes the Mining Community participation and Mining
Scientific and Technological Institute participation as indicated in Article 281 and Article 338, respectively.

REINVESTMENT. - Article 124 paragraph c indicates that holders of titles to mining activities may reinvest in their own firms or in other mining activities free of all taxes, up to 40 percent of their net income with a maximum of 300 million soles.

DEDUCTION TO COVER LOSSES. - Article 51 of Supreme Decree No. 278-68-HC indicates that firms are allowed to deduct from their net income an amount to cover losses from previous years.

TAXABLE INCOME. - Is equal to net income less: participations, tax free reinvestment, and deduction to cover losses.

INCOME TAX. - Income tax is calculated as indicated in Article 119.

NET PROFIT. - The difference between taxable income and income tax.

NET CASH FLOW. - Net cash flow is equal to net profit plus tax free reinvestment, depreciation, deduction to cover losses, amortization, less total investments made during the year.

Summary of Calculations

Initial calculations. -

\[
\text{COST} = \text{SALES} \times \text{COSTF}
\]

\[
\text{OTH}\text{S} = \text{COST} \times \text{OTHSF}
\]

Where:

\[
\text{COST} = \text{Operating costs}
\]

\[
\text{SALES} = \text{Sales price}
\]

\[
\text{COSTF} = \text{Cost factor, a percentage of sales}
\]
OTHIS = Other costs
OTHISF = Other costs factor, a percentage

Calculation of gross income.- As defined before.

GRSS = SALES - COST

Where:

GRSS = Gross income
SALES = Sales price
COST = Operating costs

Calculation of Depreciation.- In accordance to Article 124 paragraph a.

Net fixed assets:

PASS = ( PASS_{(n-1)} + TGINV ) + ( REVAL )
REVAL = PASS \times REV

Where:

PASS = Net fixed assets
PASS_{(n-1)} = Net fixed assets of previous year
TGINV = Annual investment in fixed assets
REV = Authorized revaluation factor
REVAL = Revaluation

Depreciation is calculated in two ways, first as indicated in Article 124 if there is not a contract signed with the government

a) If TGINV is less than 10 millions soles:

DEP = TGINV + ( PASS - TGINV ) A

b) If TGINV is less than 30 millions soles:

DEP = 8. + TGINV + 0.2 + (PASS - (8. + TGINV \times 0.2)) (A)

c) If TGINV is greater than 30 millions soles:
DEP = 14. + (FASS - 14.) (A)

Where:

DEP = Depreciation

TGINV = Annual investment in fixed assets

A = Depreciation rate

FASS = Net fixed assets

In the second case, the company can take advantage of the benefits indicated in Article 127, if a contract with the government was signed.

DEPC = 0.2 x PASS

Where:

DEPC = Depreciation

FASS = Net fixed assets

The company has the right to choose the highest depreciation.

Calculation of Net Income.— As defined before:

FNINC = GRSS - OTHS - DEP

Where:

FNINC = Net income

GRSS = Gross income

OTHIS = Other costs

DEP = Depreciation

Calculation of Participations.— As indicated in Article 281 and Article 338 of the General Mining Law and Article 58 of the Regulations of the Mining Community.

SHR = 0.06 x (FNINC - SUMLOS)
PART = 0.04 x FNINC

Where:

SHR = Mining Community property participation
PART = Mining Community liquid participation
SUMLOS = Losses
TECH = 0.01 x FNINC

Where:

TECH = Technical Institute participation
FNINC = Net income

Calculation of tax-free reinvestment. - As indicated in Article 124.

REINV = 0.4 x FNINC

With a maximum of 300 million soles per year

Where:

REINV = Annual tax-free reinvestment
FNINC = Net income

We consider tax-free reinvestment equal to total annual investment when the latter figure is smaller than 40 percent of net income or less than 300 million soles.

FINTG = TGINV x FINTGF
TOINV = TGINV + FINTG

Where:

TOINV = Total annual investment
TGINV = Annual investment in fixed assets
FINTG = Annual investment in intangibles
FINTGF = Investment in intangibles factor, a percentage of TOINV
Calculation of Taxable Income. - Taxable income is calculated by subtracting from net income: participations, reinvestment, and deduction to cover losses.

\[ T = \text{FNINC} - (\text{PART} + \text{SHR} + \text{TECH} + \text{REINV} + \text{SUMLOS}) \]

Where:

\[ T \quad \text{= Taxable income} \]

\[ \text{FNINC} \quad \text{= Net income} \]

\[ \text{PART} \quad \text{= Mining Community liquid participation} \]

\[ \text{SHR} \quad \text{= Mining Community property participation} \]

\[ \text{TECH} \quad \text{= Technical Institute participation} \]

\[ \text{REINV} \quad \text{= Tax-free reinvestment} \]

\[ \text{SUMLOS} \quad \text{= Deduction to cover losses} \]

Calculation of Y Ratio and Juridical Entity Rate. - As indicated in Article 119:

\[ \text{SUMINV} = \text{SUMINV}_{(n-1)} + \text{TGINV} + \text{REVAL} \]

If a new operation is analysed TGINV is replaced by TOINV only for the first year of operations, then

\[ \text{SUMINV} = \text{SUMINV}_{(n-1)} + \text{TOINV} \times \text{REVAL} \]

If TGINV and/or REVAL are different from zero, SUMINV must be reduced in 5 percent. The reduced SUMINV is called VST.

\[ \text{REVAL} = \text{FASS} \times \text{REV} \]

Where:

\[ \text{REVAL} \quad \text{= Revaluation} \]

\[ \text{FASS} \quad \text{= Net fixed assets} \]

\[ \text{REV} \quad \text{= Authorized revaluation factor} \]
SUMINV = Sum of investments in fixed assets
TGINV = Annual investments in fixed assets
TOINV = Total annual investments
VST = Investment

Calculation of the "Y" Ratio and Income Tax.

\[ Y = \frac{GRSS}{VST} \]

Where:

GRSS = Gross income
VST = Investment

\[ TAX = T \times 0.2 \]
If: \( T < 0.1 \) million soles

\[ TAX = 0.02 + (T-0.1)(0.3) \]
If: \( 0.1 < T < 0.5 \)

\[ TAX = 0.14 + (T-0.5)(0.35) \]
If: \( 0.5 < T < 5.0 \)

\[ TAX = 17.465 + (T-50)(0.4) \]
If: \( 5.0 < T < 50 \)

\[ TAX = 37.465 + (T-100)(\text{RATE}) \]
If: \( 50. < T < 100 \)

Where:

T = Taxable income
Tax = Income tax
Rate = Juridical entity rate

Calculation of Net Profit.— As defined before

\[ PROF = T - TAX \]

Where:

PROF = Net profit
T = Taxable income
TAX = Income tax

If the sum of profits of previous years is negative it is considered
as losses.

Calculation of Required Investment.— Required investment for next year is calculated as a percentage of depreciation.

\[ TGINV = DEP \times TOINVF \div (1.0 + FINTEF) \]

Where:

\( TGINV \) = Investment in fixed assets
\( DEP \) = Depreciation
\( TOINVF \) = Total investment factor, a percentage of depreciation
\( FINTEF \) = Intangibles investment factor, a percentage of TGINV

Calculation of Net Cash Flow.— By definition:

\[ CFLOW = PROF + REINV + DEP - TOINV + SUMLOS \]

Where:

\( CFLOW \) = Net cash flow
\( PROF \) = Net profit
\( REINV \) = Tax-free reinvestment
\( DEP \) = Depreciation
\( TOINV \) = Total investment
\( SUMLOS \) = Deduction to cover losses

Calculation of the Rate of Return.— The rate of return of the project is found using the Discounted Cash Flow Method and the DCFREV.F4 computer program.

The input

The input for the program requires:
### Configuration Description

**First card: FORMAT (3I)**

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>XX</td>
<td>Number of calculations.</td>
</tr>
<tr>
<td>1 or 0</td>
<td>1 if the company signed a contract with the government, 0 if did not.</td>
</tr>
<tr>
<td>1 or 0</td>
<td>1 if the operation is new, 0 if not.</td>
</tr>
</tbody>
</table>

**Second card: FORMAT (2F)**

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
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</thead>
<tbody>
<tr>
<td>XXX XXX.XXX</td>
<td>Initial fixed assets in million soles.</td>
</tr>
<tr>
<td>XXX XXX.XXX</td>
<td>Initial investment in intangibles.</td>
</tr>
</tbody>
</table>

**Subsequent cards: FORMAT (7F)**

<table>
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<tr>
<th>Field</th>
<th>Description</th>
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</thead>
<tbody>
<tr>
<td>XXX XXX.XXX</td>
<td>Total sales in million soles.</td>
</tr>
<tr>
<td>X.XXX</td>
<td>Operating cost factor, a percentage of total sales.</td>
</tr>
<tr>
<td>X.XXX</td>
<td>Other costs factor, a percentage of operating costs.</td>
</tr>
<tr>
<td>X.XXX</td>
<td>Revaluation factor, percentage.</td>
</tr>
<tr>
<td>X.XXX</td>
<td>Total annual investment factor, a percentage of depreciation.</td>
</tr>
<tr>
<td>X.XXX</td>
<td>Annual investment in intangibles, a percentage of TGINV.</td>
</tr>
<tr>
<td>X.XXX</td>
<td>Depreciation rate.</td>
</tr>
</tbody>
</table>