ZAMBIA LAW JOURNAL

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MINERAL TAXATION IN ZAMBIA

MUNA NDULO

Governments in most mining countries tend to exploit the fiscal capacity of mining-right holders to the fullest extent, and this leads to a variety of fiscal measures. The rates and types of measures have implications which are not always realised by those who propose them and often fail to provide a framework within which a just balance is struck between the political and financial needs of the country and a reasonably effective incentive in prospecting and mining thereby discouraging much needed investment.¹

(a) Taxation and Investment Decisions

The imposition of a tax on mining rights will tend to affect investment decision-making in several ways. In order to understand these influences, the cost-price structure of an extractive industry must be reviewed. The basic economic unit of the extractive industry is the mineral reserve. Pre-tax costs of development of a mine ore-body include discovery of the ore-body, acquisition of the rights to extract the resource, equipment for the mining and extraction of the resource, and marketing the product. Factors which determine the cost of extracting the resource include the grade, size, shape, continuity, and depth from the surface of the resource, rock conditions and other impediments, and the rate of recovery.

A mining right holder usually competes in regional or world markets and is able to exert little influence on the prices in these markets. Consequently, while costs of production of the resource are subject to some control by the producer, the prices received for resources are fixed by market factors. A mining right holder will therefore extract those resources which he determines through cost-price analysis can be profitably removed.

Those reserves below the break-even or cut-off point will be left in the

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¹ For the exploitation of mineral resources massive capital is needed e.g. Rokana mine is to spend K3 million on the redeeming of Number one shaft from 240M to about 350M level. See Mining Mirror, 3rd October, 1975, p. 3. Another good example are the construction costs of Ojihase mine in Namibia which are reported to be K423 million, See Mining Mirror, 3rd October, 1975, p. 4. In 1970 it was estimated that a million of K1,000 was required for every one ton increase in annual production of refined copper. See Bostock, Murray and Harvey, Antony of the Zambian Copper Nationalisation, An Occasional Paper by Maxwell Stamp (Africa) Ltd., 1970.
ground and considered waste until changes in prices or extracting and processing methods or other factors make extraction profitable.

The break-even point determines the level of recovery. As that break-even point rises, a larger portion of reserves falls into waste, or delayed production category. The rate at which a deposit is exploited generally depends upon the relationship between the costs that vary directly with production and the costs that are independent of production. If a miner expects market prices to rise more rapidly than variable costs, his present rate of recovery may be increased to allow more production usually. Fixed costs do not vary with the rate of recovery, but recur each year that the mine is operating, with high recurrent fixed costs a mining-right holder will tend to extract the resource in as little time as rising variable costs will allow so as to lower the total fixed cost.

(b) The Basis of Taxation in Zambia

The basis of taxation in Zambia is income having its source in Zambia. The recipient of the income may be resident outside Zambia, but so long as the income has its origin in Zambia he will be taxable on it. The Income Tax Act makes no attempt to define income. The reason is not that the legislature has deliberately left it vague with a view to include everything. It is because it is almost impossible to provide a precise definition which would include everything which is assessable and which would exclude everything which is not assessable. It can be said that income is what capital produces e.g. if a mining-right holder invests money and earns more money in return that money is income. In this example the income flows out of capital, as it were, in the same way that a man’s salary has its origin in his work. Income can often be related to a period of time e.g. it can be said that a man’s dividends are so much per year while capital may appear to be fixed in comparison. Thus if the mining-point holder invests K1,000 it would remain at K1,000 year after year and any increase of the amount in the account would be because of the income.

The question of source on the other hand poses a little problem. As a general rule it has been held that the originating cause of income decides its source. Where a person holds mining rights the originating cause of profits are the minerals let to the miner by the state. A good example of the principle that the originating cause of income deter-

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2 See s. 14, Income Tax Act, 1966, supra. The rationale for this test is that a country which produces wealth by virtue of its natural resources or the activities of its inhabitants is entitled to a share of that wealth wherever the recipient of it may live.

3 This lack of a definition is true of other countries as well. See, Sprio, “The Receipts or Accrual Basis of the South African Income Tax” (1973) 3 Comparative and International Law Journal of Southern Africa, p. 199.
mines its source is found in the South African income tax case of Millin v. C.I.R. Mrs. Millin had written a book in South Africa. Although the right to publish was granted to an English publisher and although the contract with the publisher was concluded in England, it was held by the court that the source of the royalties from the book was in South Africa because it was in South Africa that she had actually conceived and written the book. Unlike the United Kingdom Income Tax Act, the South African Act resembles the Zambian one in having "source" as the main criterion when deciding whether or not various types of income should be taxed.

In each charge year, however, only income received is charged. Income is received by a miner when in money or in money's worth or in the form of any advantage, whether or not that advantage is capable of being turned into money or money's worth, it is paid or granted to him or it accrues to him or in his favour or it is in any way due to him or held to his order or on his behalf, or it is in any way disposed of according to his order or in his favour. This makes it plain that, as used in the Act, the word "received" is very far from its normal everyday dictionary meaning because it includes income which is due to a taxpayer but which has not yet come into his actual possession.

Circumstances can arise in which a mining-right holder is entitled to income on a different date from that upon which it is due to him. Thus for example, income may accrue to a miner in one tax year but it may be several years before the miner is able to gain possession of that income. In circumstances like these the state may either not charge such income to tax or, alternatively, charge such income to tax in the charge year in which it may be realised.

(c) The Pre-1970 Legislation

Before 1969 there were three main taxes on mining-right holders in Zambia (a) the royalty, (b) the export tax and (c) the income tax.

1. Royalty

As used here a "royalty" describes the rent or tax payable to the
owner of the minerals purely on the basis that he is the owner. It has a long history. The royalty (regalia) is said to have been charged by Roman Emperors on the produce of all mines. In feudal times, landlords were in most cases not at liberty to open mines on their own ground without the consent of their sovereign. They were, nevertheless, admitted to a participation in the produce of such minerals, in proportions which varied according to the nature of the produce and according to the particular law of the state. In some states the royalty was divided equally between the ruler and the landowner, in the case of some minerals the ruler claimed no portion of the produce. The royalty was generally also modified according to the circumstances of the mine, sometimes being wholly relinquished. The concept is that it is a share of the product or profit reserved by the owner for permitting another to use his property. In England the word was also used to designate the share in production reserved by the Crown from those to whom the right to work mines and quarries was granted.

In Zambia until 1964, the royalty was fixed by and was payable to the British South Africa Company. Just before it was repealed the royalty was a levy of 13.5% on the price of copper less K16 per long ton produced.

The reduction of K16 was intended to eliminate royalty when the price of copper was low. Thus the formula exacted no taxation at a price of less than K118.52 per long ton.

After independence the tax was continued by the Zambian government for some time largely because it proved to be very profitable in terms of actual government revenue. Most mining companies were by 1966 paying an average of £87.86 royalty per short ton and this brought in an appreciable amount of income for the state. It was also a political decision in that the government was not very sympathetic to mining right holders on this issue as they had done little about it under the British South Africa Company.

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11 The royalty was incorporated in the prospecting licence. It became payable to the Zambian government by virtue of the Mining Ordinance (Amendment) Act, No. 5 of 1965.
13 In 1966 for instance the mines paid a total sum of £37,324,126 in royalty payments alone. See Copper Service Bureau, Copperbelt of Zambia Mining Industry Year Book, 1966.
14 Kaunda Towards Complete Independence, Zambia 1969, p. 35. The President remarked that "I do not remember any of the chairmen of the mining companies in their annual statements to their share holders complaining that the royalties charged by the British South Africa Company were too high but after independence we have been hearing nothing else". But this was denied by one of the companies, Roan Selection Trust Ltd. stated that it had been opposed to it for years, see Statement by the Chairman, August 22, 1969.
The figure established by the royalty formula bore little relation to modern costs of production but was established in the 1930s when costs were low. In 1966 the average cost of transport—one item of production costs alone—was for instance £50 per ton. This is the cost from miner to customer. But royalty, being a tax on production, ignored costs. The government always received the same royalty share of each long ton of mineral produced regardless of great fluctuation in the cost of production to the miner in different mines, and even in the same mine between different shafts.

The costs of extraction from the various mines of course vary tremendously. This arises from differences in ores and several technical factors. Bancroft, for instance, has to drain 62.82 million gallons of water per day, whereas Chambishi drains 1.60 million gallons per day. Bancroft needs 1,053 thousands of cubic feet of air whereas Chibuluma needs only 491 thousands.

The price used in calculating this tax was an average of eight prices on the London Metal Exchange at the time of production, though this frequently bore little relation to the prices reported as actually received by the companies and had risen beyond what it was when the royalty formula was fixed in the 1930s as a comparison of two periods below shows.

**Average Year Exchange per long ton of copper**

(London Metal Exchange)

<table>
<thead>
<tr>
<th>Year</th>
<th>Price</th>
<th>Year</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>1965</td>
<td>£541</td>
<td>1947</td>
<td>£130.6</td>
</tr>
<tr>
<td>1966</td>
<td>£411</td>
<td>1948</td>
<td>£134.0</td>
</tr>
<tr>
<td>1967</td>
<td>£517</td>
<td>1949</td>
<td>£133.0</td>
</tr>
<tr>
<td>1968</td>
<td>£611</td>
<td>1950</td>
<td>£179.0</td>
</tr>
</tbody>
</table>


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15 Imperial Institute, Mineral Resources Departments, *Mining Royalties & Rents in the British Empire*, 1936, p. 35.
18 The problem was largely due to the post-1949 rise in the price of copper to levels not foreseen when the royalty formula was fixed before the war. The royalty payment affirmed a dimension which lost any reasonable relationship either to other costs or to profitability.
The exchange price was very much higher than the actual price at which the mining companies made their sales.

As a tax on production the royalty constituted a direct operating cost. It increased the cost to the mines of each ton of copper produced and thus made it unprofitable to mine every type of ore because of such factors as quality, position, and grade. In 1963, for instance, the average cost of producing a long ton of primary refined copper in the world was about K330.19

This was the cost of a ton delivered to the buyer, and included provision for depreciation after subtracting any credit from the sale of by-products. It did not include company tax. To this figure of K330, the Zambian average cost of K320 in the same year was very close. Zambia copper production costs included K46 a long ton in transport costs and they included royalties on the scale which existed in 1963 (averaging K48 per ton of copper making a total in the way of transport and royalties of K94 per ton).20

Furthermore, as an additional cost to mine the royalty could of course prevent development of an otherwise profitable mine by reducing or eliminating the potential profits. This was a real and not a hypothetical problem for a high cost mine like Bancroft, which made a loss of K9.18 per long ton in 1967 after paying K102.60 per long ton royalty.21 Any tax reduces the rate of return on an investment, but a profit-oriented tax cannot eliminate a profit whereas a royalty could. Royalty also affected the recovery rate of minerals.22 As an added cost to production it pushed the cost of marginal ores the cut-off point, marginal ores were considered as waste. To a large extent the state was the loser, in that some lower grade ores that were not mined in the past because of the royalty may never be mined because it would only have possible or profitable to mine them at the same time as higher-grade ores.

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20 Ibid.
21 Copperbelt of Zambia Mining Year Book, 1968. A mine could however have royalty remitted as did Broken Hill at times. The conditions attached to this procedure were such that it still left the mine with a zero profit and that remittance of royalty was not certain beforehand.
22 This meant that minerals that could be economic to mine in other countries would be uneconomic to mine in Zambia. A Philippine Corporation is known to have been mining 0.74% copper ore on Martiniqul Island which would have been impossible in Zambia with royalty. Roan Selection Trust, Bulletin 1968.
Copper royalty payment compared with ore grades 1968

<table>
<thead>
<tr>
<th>Year</th>
<th>Mine</th>
<th>Average royalty per ton</th>
<th>Ore grade</th>
<th>Copper Subject to Royalty</th>
</tr>
</thead>
<tbody>
<tr>
<td>1968</td>
<td>Bancroft</td>
<td>55,919</td>
<td>3.40</td>
<td>81.84</td>
</tr>
<tr>
<td></td>
<td>Chambishi</td>
<td>21,542</td>
<td>2.70</td>
<td>88.52</td>
</tr>
<tr>
<td></td>
<td>Chibaluma</td>
<td>25,505</td>
<td>2.29</td>
<td>89.00</td>
</tr>
<tr>
<td></td>
<td>Luanshya</td>
<td>103,729</td>
<td>1.90</td>
<td>88.85</td>
</tr>
<tr>
<td></td>
<td>Mufulira</td>
<td>197,979</td>
<td>2.47</td>
<td>87.91</td>
</tr>
<tr>
<td></td>
<td>Nchanga</td>
<td>225,337</td>
<td>2.57</td>
<td>88.09</td>
</tr>
<tr>
<td></td>
<td>Rokana</td>
<td>103,299</td>
<td>2.11</td>
<td>89.11</td>
</tr>
</tbody>
</table>

Source: Copperbelt of Zambia Mining Year Book, 1969.

The royalty also was inequitable between mines in that it could and did take a higher proportion of the profits of less profitable mines than it took of the profits of more profitable mines.23 Although the major mining groups in Zambia contain both high and low-cost mines, the individual mines also had other shareholders, who were differentially and unfairly treated by the royalty.

The insensitivity of the royalty system to changes in production costs can best be illustrated by examining the figures in respect of two hypothetical mines, designated A and B. In an extreme case in which Company A has a production cost of K300 per ton and Company B has one of K600 per ton, then at a price level of K1,000 per ton the amount of royalty in both cases is K119.00, since in calculating royalty the cost of production has to be ignored. Still using the K1,000 price level, Company A has an advantage of K300 per ton over company B in that it suffers less expenses in the production of its minerals.

With the rise in the cost of heavy machinery and other inputs required in the production of minerals, the royalty had the effect that, over a period of time, those mines which were previously profitable and where, because of high copper prices the mines still remained profitable, the royalty would have the effect of reducing their profit margin.

The royalty, quite apart from its influence on profitability, also had an influence on other spheres of mining such as exploration since there would have been no point in pursuing any discovery of mineralisation below certain grades as they would be uneconomic to mine.

23 Between the highest and lowest production costs there is a variation of about K3 per long ton.
One is tempted to say that the problem could have been forestalled by exempting from royalty tax very low-grade ores. The problem with this is that the high grade mines are not necessarily the cheapest producers: e.g. Bancroft is a high-cost mine but has the highest grade while Luanshya with one of the lowest is a low-cost mine. Sometimes this is due to the fact that low-grade mines are open-cast mines where the greatest advances in production machinery have been able to offset the increasing wages per ton an hour as well as the decline in grade, resulting in the labour cost per pound of minerals remaining virtually static.  

One way out of the dilemma of royalties is to abandon the idea that royalty rates be uniform for all mines or any group of them, of a particular mineral within a country. But although this is entirely logical in economic terms, there are other reasons of a political and administrative nature, such as the arithmetical complication involved in administering different rates for different ores, why minerals owners are reluctant to take this course. Another way out is to attach the royalty rate to some measure of profitability and a third possibility is to abandon the idea of a royalty as a charge upon production and to take the rest of the payment for the ore in another form.

2. Export tax

Another tax imposed was the export tax. This tax was charged, levied, and collected on every long ton of finished copper exported. The rate of the tax was 40 per cent of the price of copper per long ton of copper, above the price of K600 per ton. No export tax was payable when the copper price was below K600. It was introduced in April 1966 when the producer's price was dropped, in order to try to obtain for the government a large share of the ensuing windfall profits. It was moderately successful in its main objective. Since it was charged on exports, it was effectively a tax on production since virtually all production of minerals in Zambia is exported. Furthermore it too, took no account of cost, so it simply added to the bad effects of the royalty.

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24 E.g. in 1965 in the United States, mines with less than 1% grade showed an average cost of 17 cents per lb, those with 1-2% showed 22 cents per lb and those over 2% showed 24 cents per lb., Northern Miner Press Ltd., Mining Explained, 1968, p. 191.
25 Copper (Export Tax) Act, Chapter 66 of the Laws of Zambia. The Minister of Finance could grant exemption to any person from liability to pay export tax.
26 Previously the Zambian Companies had been selling copper at a producer price which was much lower than the London Metal Exchange Market. This was mainly to counter the threat of substitution for copper by lower priced metals. E.g. in 1966 they were selling at £336 per ton while the market price was £700 per ton.
27 In 1968 alone the mines paid 65, 185, 585, in export tax, see Copperbelt of Zambia Mining Year Book, 1969, p. 34.
3. Income tax

The third tax charged was income tax. The first income tax laws in the country were rather general. Persons deriving income from mining, whether they were companies or natural persons, were governed by the same principles.28 Thus the allowances deductible against profits were as for ordinary business. Miner were allowed to claim for reasonable wear and tear of any machinery arising out of its use or employment in the trade.29 Although company tax was then introduced, its application to the mining industry was moderated by granting mining allowances. Just before the change in the tax system income tax was charged on profits at the rate of 37.5% of the first K200,000 of profits and 45 per cent of the remainder.30

In computing profit for the purposes of tax, a deduction was allowed for expenditure on surveys, boreholes, trenches, pits, and other prospecting or exploratory works undertaken to acquire the right to mine minerals or incurred on a mining location in the country.31 Also allowed were incidental expenditures, provided their sum total did not exceed K200,000 in any one year.32

Separate and distinct mining operations in non-contiguous mines were allowed deductions calculated separately according to the approved estimated life of each mine.33 But mines could elect to deduct such expenditures on income from a producing mine.34 At the cessation of mining operations the miner could deduct his unredeemed capital expenditures.35

In addition to the above deductions a miner was allowed a redemption allowance at the rate of 2%. It was however, not allowed to companies that were liable to be taxed in a country outside Zambia on the income from mining operations carried on by the company within Zambia. This was in respect of any of that income from which a deduction similar to a depletion allowance was not made in terms of the tax laws of that country.36 Where such an allowance was made, the depletion allowance was not to exceed that allowance. No depletion allowance was allowed to a person where the amount due by the formula exceeded his income attributable to mining operations.37 The effect, however, of the

28 Income Tax Proclamation, 1921.
29 Income Tax Proclamation, 1926, s. 5.
31 Income Tax (Amendment) Act No. 26 of 1970, s. 19 (1).
32 Ibid, s. 2 (1).
33 Ibid, s. 20 (2).
34 Ibid, s. 23.
35 Ibid, s. 21 (1).
36 Income Tax Act, supra, s. 33.
37 Ibid.
export and royalty tax system which was discussed earlier, was to render these capital allowances somewhat ineffective and this can partly be seen in the resultant level of mining activity.

During the period 1964-69 the rate of development of mines was very slow. Mining companies were disinclined to reinvest their profits in the development of new mines. There is no doubt in fact that the government’s anxiety about the rate of development of new mines was justified although there is sharp disagreement about the causes. The table shows that among the leading copper exporting countries, Zambia had the lowest projected rate of expansion.

**Principal copper exporting countries production forecasts**

<table>
<thead>
<tr>
<th>Country</th>
<th>1969 (thousand tons)</th>
<th>1975</th>
<th>Growth Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chile</td>
<td>700</td>
<td>1,100</td>
<td>57</td>
</tr>
<tr>
<td>Peru</td>
<td>350</td>
<td>500</td>
<td>43</td>
</tr>
<tr>
<td>Zaire</td>
<td>320</td>
<td>430</td>
<td>35</td>
</tr>
<tr>
<td>Zambia</td>
<td>700</td>
<td>811</td>
<td>16</td>
</tr>
</tbody>
</table>


Although marginal increases in capacity can be produced fairly quickly by increasing the production of existing mines, the gestation period of a new mine may be as long as seven years. The mining companies gave the tax system as the only reason for the lack of adequate mineral development.\(^\text{38}\) Without denying that this was a major reason, it is important to point out that there are additional reasons. Though denied by the companies in 1968 it had long been their practice, as can be demonstrated, to distribute most of their disposable earnings as dividends abroad. This can be shown by examining the period 1945-56. A period before the impact of the royalty system was severe because of the relatively low prices at the London Metal Exchange and before the export tax was ever introduced.

\(^{38}\) Kaunda blamed the inadequacy of mining development on the investment policies of the companies, Kaunda *Zambia Towards Economic Independence* supra p. 45-46. But both mining groups blamed the problem on tax, see Anglo-American Corporation of South Africa Ltd., *Statement by Chairman*, November 1968, p. 7.
Account of Mining Industry showing Investments and Dividends 1945-57

<table>
<thead>
<tr>
<th>Year</th>
<th>Gross Investment</th>
<th>Flow of Direct Private Investment into Federation of Rhodesia and Nyasaland</th>
<th>Dividends Paid Abroad</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(Million Pounds)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1945</td>
<td>1.09</td>
<td></td>
<td>1.7</td>
</tr>
<tr>
<td>1946</td>
<td>0.9</td>
<td></td>
<td>2.8</td>
</tr>
<tr>
<td>1947</td>
<td>2.4</td>
<td></td>
<td>8.6</td>
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<td>1948</td>
<td>2.9</td>
<td></td>
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<td>1949</td>
<td>6.6</td>
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<td>11.1</td>
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<td>1950</td>
<td>8.5</td>
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<td>18.6</td>
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<td>11.4</td>
<td></td>
<td>22.0</td>
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<td>1952</td>
<td>15.2</td>
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</tr>
<tr>
<td>1953</td>
<td>16.5</td>
<td></td>
<td>17.9</td>
</tr>
<tr>
<td>1954</td>
<td>14.9</td>
<td></td>
<td>18.3</td>
</tr>
<tr>
<td>1955</td>
<td>21.4</td>
<td>3.4</td>
<td>20.8</td>
</tr>
<tr>
<td>1956</td>
<td>18.0</td>
<td>2.5</td>
<td>25.5</td>
</tr>
<tr>
<td>1957</td>
<td></td>
<td>2.9</td>
<td></td>
</tr>
</tbody>
</table>


Another reason was that the mining companies suspected, and rightly so, that nationalisation would come sooner or later and were consequently not particularly anxious to plough profits back into capital investment which could be expropriated in the near future, at a compensation level which was undefined.

(d) Post-1970 Legislation

1. Mineral tax

In 1969 to correspond with changes in the system of mining rights already discussed, the government changed the taxes affecting the mining-right holders. Both the royalty and the export tax were abolished and a new tax was introduced - the mineral tax - which replaced them both.39 The new tax is entirely based on profits and is at the rate of 51%.

of profits for copper, 13% for lead, zinc, and amethyst, and 20% for gold. The mining-right holders continue to pay income tax of 45% on their profits after payment of mineral tax, giving a rate of tax on profits of 73.05% for copper. 40

Section 7 of the Mineral Tax Act is also particularly significant. It provides, "that a company shall be entitled to a refund of mineral tax in respect of any prescribed period if its average income in the prescribed period is less than twelve per centum of its average equity in the period". Where a company is entitled to a refund of mineral tax the amount of the refund is the difference between 12% of its average equity in the prescribed period. 41 The average equity is the sum total of the equity in each charge year.

Average income means the sum total of assessable income less mineral tax and income tax for each charge year in the prescribed period divided by three. The implication of this refund provision in the case of new copper mines is that there is in fact a sliding scale in the overall rate of taxation ranging from a minimum of 22.05%, when all mineral tax is refunded, to a maximum of 73.05% as pointed out above.

Most mining companies tend to feel that the protection of 12% level of profit is actually of no use, since most of them would not carry on a venture that indicated such a low yield. They argue that, since they can earn that level of profit in a bank at no risk, there is no greater incentive to go into mining, which is a heavy-risk industry, and that since this is an exemption rather than a repayment, the taxable profit would bear income tax at 45% where the whole of the mineral tax is exempted. A mine with this exemption would thus be at a disadvantage compared with a mine without it, if the mine were earning net profits less 12% of equity.

The government, on the other hand, believes that the refund system is of great incentive value to both potential and existing investors. The exact value of this concession cannot be generalised since it depends largely on the debt: equity ratio of the initial investment. The higher the debt proportion the less the net profit on which the refund may be claimed. In normal times, there has not been a single occasion when the average income of any mining company has fallen below 12% of its average equity, although in 1976 no mining company paid any tax to the state, on account of the extremely low commodity prices brought about by the current world recession. 42

A flat rate tax of 73% based on profit clearly removed most of the

40 Ibid. This was very nearly the same as the sum total of previous taxes that the base changed.
41 Mineral Tax Act, supra, s. 7.
anomalies discussed earlier. All mines now pay the same percentage of profit in tax. Tax can no longer amount to more than 100% of profits nor can it be charged on a mine making no profits at all, and the percentage of profits paid in taxation is constant as the metal prices change since marginal and average rates of tax are now identical. Furthermore the net-income related tax has the least economic effect on the level and rate of recovery. The tax liability approaches zero when the extractive industry reaches the cut-off, and operators are not thereby discouraged from developing marginal ores.

2. Capital expenditure

Other new measures involved mining allowances. Companies operating mines which commenced production after April 1, 1975 are allowed to offset capital expenditure in the year in which the expenditure takes place. Capital allowances in respect of mining operations for established companies are allowed according to the length of time a mine has been in production. They are provisionally permitted to claim allowances on the basis of the legislation which existed prior to the enactment of the Income Tax (Amendment) Act of 1970. The effect of this legislation is that in the case of mines which started operating since 1953 of which there are seven, expenditure is allowed in full in the year it is incurred. In the case of the pre-1953 mines, of which there are four, the expenditure allowed has to be allowed under specified headings and allowances are calculated at fixed rates. The rates are for plant and machinery (40% in year of purchase, thereafter 20% on diminishing balance); heavy earth-moving mechanical equipment (50% in year of purchase thereafter 30% on diminishing balance); industrial buildings (15% in year of construction, thereafter 5% on original cost); low-cost housing (20% in year of construction, thereafter 10% on original cost); and for capital expenditure not covered in the above groups. the rate allowable over the life of the mine is one-twentieth of diminishing balance.

The main point on which the treatment of allowances for old mines seems to differ from that of the new mines is the timing of such allowances. In the final analysis, the whole of the capital expenditure for both categories of mines is written off against taxable profits. The basis of the difference seems to be that to allow both categories of mines to deduct the whole of their capital expenditure in the year incurred

43 In the 1970 Income Tax (Amendment) Act all mines were permitted to deduct the whole of the capital expenditure in the year incurred. But in 1973 the Income Tax Act was further amended by the Income Tax (Amendment) Act of 1973. The amendment withdrew the 100% immediate deduction from established mines. This is now incorporated in the Income Tax (Amendment) Act 1975.
would allow the established companies to deduct their expenditures on new projects from their tax liabilities for current profits. This advantage would not be available for new entrants.

The Income Tax Act of 1970 allows a deduction against both mineral tax and income tax. The meaning of capital expenditure has been extended beyond the pre-1970 concept. It now means expenditure in relation to mining operations, buildings, works, railway lines or equipment including any premium period for the use of buildings, works railway lines, equipment or land.44

It includes shaft sinking, money paid on the purchase of or on the payment of a premium for the use of any patent, design, trademark, process or expenditure of a similar nature, and expenses incurred prior to the commencement of production or during any period of non-production on preliminary surveys, boreholes development or management, including any interest payable on loans used for mining purposes.45 But it does not cover non-capital expenditures such as labour. Previously, the system in force was one of capital allowances that varied according to the category of expenditure and could only be offset against income tax, not against royalty or export tax.

The amount of capital spending that is effectively paid for by the government under this system is now 73% for all mines compared with 45% previously, and in addition the tax relief is available immediately in the case of all companies with the exception of Nchanga Consolidated Copper Mines and Roan Consolidated Mines Ltd., instead of being spread over a number of years; with respect to prospecting and exploration activities, section 21 (1) of the Income Tax (Amendment) Act of 1970 provides that a person or company may renounce the deduction in favour of its shareholders. Thus, any person who contributes money to a prospecting enterprise can offset the expenditure against his current taxable income in Zambia instead of waiting for the chance to offset it against ultimate profits. If the contributor is a non-mining company then the value of the immediate deduction in terms of tax paid will only be 45% as he can only offset his expenses against income tax.

Expenditure that is retained for tax purposes by a prospecting company also may be renounced in favour of a subsequently formed mining company of which it is a shareholder.46 Thus, all the expenditure of a prospecting company that finds a workable deposit (including expenditure in areas outside the location of the ultimate mine) can be offset against profits of the mine. This may be attractive for a group of in-

44 See Income Tax (Amendment) Act No. 10 of 1975, s. 19 (a).
45 Ibid.
46 Ibid, s. 23.
vestors who prospect through a prospecting company in several areas at once and decide to form a mining company to exploit a mine in one of the areas, and continue prospecting in other areas through the prospecting company. If other investors are brought into the mining venture, this operation will only be attractive if the new investors compensate the prospecting investors for the tax advantage so conferred on the new mine, on the whole this is acknowledged to be quite an incentive to mining-right holders.

The amount of capital effectively paid for by the government is increased if a mine is subsequently opened. Section 22 of the Income Tax (Amendment) Act of 1975 allows a new mine to deduct pre-production expenditure incurred in each charge year increased at a rate of 10% per annum compounded for the period commencing with the first day of the charge year in which such pre-production expenditure is incurred and ending with the last day of the charge year to the production charge year. This in effect means that the unamortized part of any pre-production expenditure and capital expenditure incurred during production would, for tax purposes, be increased by a factor of 10% per annum until the first year in which the company is charged tax in respect of its mining income.

An owner of a mine who is also the owner or has the right to work a non-contiguous mine from which he had no production during the year, may elect to deduct the amount of capital expenditure incurred on that non-contiguous mine in the same year in which capital expenditure is incurred. This certainly encourages expansion projects in the industry; if the tax position were otherwise, with respect to contiguous mines, mining-right holders would be reluctant to spend money derived from their mining operations to develop new mines. The effect of the provision is to treat non-contiguous mines as though they were part of existing mining operations where there is actual production.

3. Weaknesses of the new system

This system of mining allowances relating to operating mines has created some problems. The allocation of expenditure which has to be made for tax purposes differs from that given in the accounts and consequently time and effort is wasted in extracting information. Development naturally depends very largely on viability and the tendency must be to favour the projects which offer the best returns. The 100% write-off on “new mines” would, however, give them an artificial advantage over “old mines”, and this in turn could lead to decisions which might not be the most economic from the national point of view.

Although one can argue for giving no write-off on capital for, say,
manufacturing companies, it cannot be right for mining companies, in that their pattern of expenditure is vastly different from that of manufacturing concerns. The latter, given the right conditions, could continue to operate almost indefinitely and large outlays of capital expenditure are normally related to expansion or modernization programmes.

Mines on the other hand are wasting assets with limited life spans and to operate them requires the constant outlay of large amounts on what could be termed “recurring capital expenditure”. This arises from two main causes, namely (a) mining at constantly increasing depths which are also hotter and wetter and (b) diminishing ore grades which compel increasing tonnages of ore to be hoisted and treated simply to maintain the level of finished metal production. Increased production through output capacity generally lowers the point at which the ore grades become marginally viable and by bringing this down, the effect should be to extend the life of the mines quite appreciably, which would be in the national interest.

The problem the government finds is that capital allowances are likely to be easily inflated, especially if all machinery is imported. Since also the allowances are made to help infant industry, there seems to them little justification for assisting the older mines, some of which have been in existence for over 40 years. Since, however, the capital allowances are against income, it is obvious that they are no incentive if one does not have a Zambian source of money. They thus tend to favour a company which has a taxable income in Zambia.

Another problem is that the new tax incentives, being geared entirely to capital spending, has the effect of making capital cheaper than other inputs such as labour. In general, import duties, tax on industrial inputs, especially capital equipment, are relatively low, while duties on consumer goods are relatively heavy. Since the prices of consumer goods affect the cost of living and this tends ultimately to be reflected in wages, import duties have the effect of making labour expensive relative to all other inputs. In addition, the employer’s contribution to the National Provident Fund, based on wages, has the effect of a tax on labour despite its principal intention and so does the recently introduced tax on expatriate labour. However, to think that a government could legislate special tax provisions in order to make labour cheap on the mining industry, is unrealistic.

The present high cost of labour is a general feature and it applies to all industries and other employment institutions throughout the world.

Another problem is that the writing-off of capital encourages capital intensive mines which drain foreign exchange, and also reduce available employment and can provide a way for companies to manipulate their costs to avoid tax. For example, if companies A and B each spend
K200,000. A on labour and B on capital, they would be entitled to the same deductions. And yet A spends most of its money in the country whereas B invariably spends it out of the country. Why should A pay the same tax as B? It may be said that this sort of argument encourages inefficiency. But very few mines are going to be efficient just to gain a tax advantage.

It can also be argued that mining technology does not allow much substitution between capital and labour, but a great deal of evidence has been given to show that the relative cost and efficiency of African labour, expatriate labour, and capital equipment has caused significant changes in their relative utilisation in the past, although at the same time it has been shown that at times of relatively low African wages and high African labour efficiency technical processes in the mines fell behind other producers in the sense of not using the latest labour-saving technology.

4. Depletion allowance

Some mining right holders contend that a depletion allowance should be introduced. Such an allowance would have the effect of reducing the mining right income upon which tax is assessed. Conceptually, it is argued that depletion is necessary in view of the fact that minerals are exhaustible resources and that when it is exhausted, the investment in the mine will have next to no residual value. It would be a recognition that part of the income from the mine constitutes consumption of capital, and that therefore an allowance, analogous to the depreciation which is allowed against plant and equipment, should be established to reflect the gradual depletion of the orebody. Other proponents of the depletion allowance take a different approach.

They cite the risks attached to mining enterprises, especially in the early stages, and the large outlays that have to be made upon exploration and prospecting much of which is certain to be abortive, as reasons why income from mining should be effectively taxed, through the depletion allowance, at lower rates than income from other types of endeavour.

It is submitted that under the Zambian system of mining tenure as described before this would be unnecessary. Since the mining-right holder does not own the orebody, it is not his capital that is being

48 Bostock and Harvey, Economic Independence and Zambian Copper, 1972, p. 142.
49 Ibid.
50 Baldwin, Economic Development and Export Growth: A study of Northern Rhodesia, 1920-1960, 1966, Chapter 4
51 Reasons often advanced for depletion allowance can be found in Lynch v. Aisworth Stephens Company 267 U.S. 364.
depleted, it is that of the state. It may well be that the factors cited above have the effect of raising the maximum expected rate of return required before finance can be raised or committed for a mining venture and about the average minimum expected rates required for investment in other sectors. But this does not in itself indicate any misallocation of investment funds, nor does it constitute, in itself, any reason why a government, particularly of an exporting country, should take special steps to lower the tax rate upon minerals as opposed to other enterprises.

Moreover, even if it were decided that special encouragement should be given to the mining sector because of the desire to open up new mines, the percentage depletion allowance is both a crude and an expensive tool for government to use; crude, because it does not differentiate between projects which require special encouragement and those that do not; expensive, because once established, it will extend over the whole life of the mine, and not merely assist in the early years when measures to allow for a reasonably early return on investment may indeed be sensible.

In any case in respect of their exploration and prospecting expenses one may argue that manufacturing enterprises are liable to go out of business if they do not modernise or diversify their product, and changing conditions may well induce them to change location. The expenditure that has to be put into research, market survey, product re-design and the purchase of patents, may be regarded as similar to the outlays that a mining company has to make on prospecting and exploration if it intends to stay in business.

Moreover, in Zambia, it will have recovered the cost of its own capital by way of capital allowances. The expenditure on exploration, prospecting, and on proving the deposit and the preliminary expenditure undergone in establishing the mine are deductible allowances against mineral tax and the written value of plant and equipment which has to be scrapped, or the shortfall below such value realised in a final sale of property where a mine has to be closed down is similarly allowable as a cost against income.

These allowances - one a revenue allowance and the other a capital allowance - take care of two aspects of a mine's exhaustible nature.

(e) Tax Incentives and the Attraction of Mining Investment

1. The rate of taxation

As the preceding chapters show, the burdensome taxes on production have been abolished and the new mining-right system has led to the release of large areas for prospecting that previously were not generally available. The state expects that future prospecting and development
will come in large measures through private initiative. It is with this background that it is necessary to examine the question of the attraction of mining development.

Despite the tax reforms the existing mining companies are still taking as much money out of the country as they can and are still disinclined to reinvest their profits at least to the extent that the government would like them to and rely instead on external borrowing for their projects.\(^{53}\)

### PERFORMANCE OF THE COMPANIES

**Roan Consolidated Mines Ltd. (1970-74)**

(All figures in Million Kwacha)

<table>
<thead>
<tr>
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<tbody>
<tr>
<td><strong>Total Sales</strong></td>
<td>178.0</td>
<td>218.8</td>
<td>191</td>
<td>237.2</td>
<td>407.7</td>
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<tr>
<td><strong>Profit before Taxation</strong></td>
<td>108.7</td>
<td>84.9</td>
<td>53.7</td>
<td>75.7</td>
<td>222.5</td>
</tr>
<tr>
<td><strong>Profit after Taxation</strong></td>
<td>38.8</td>
<td>48.8</td>
<td>43</td>
<td>47.2</td>
<td>78.5</td>
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<tr>
<td><strong>Dividend declared</strong></td>
<td>15</td>
<td>22</td>
<td>20.5</td>
<td>31</td>
<td>44.3</td>
</tr>
<tr>
<td><strong>Capital expenditure</strong></td>
<td>12.7</td>
<td>28.4</td>
<td>33.6</td>
<td>28.3</td>
<td>26.6</td>
</tr>
<tr>
<td><strong>Total loans borrowed</strong></td>
<td>6.9</td>
<td>5.3</td>
<td>7.7</td>
<td>7.2</td>
<td>6.1</td>
</tr>
<tr>
<td><strong>Percentage dividend distribution</strong></td>
<td>39%</td>
<td>45%</td>
<td>48%</td>
<td>66%</td>
<td>56%</td>
</tr>
</tbody>
</table>

Source: Roan Consolidated Mines Ltd., *Annual Reports*

\(^{53}\) At 31st March long and short-term loans totalled 68.2 million for Nchanga Consolidated Copper Mines Ltd., *Annual Report* 1974, p. 9. See also Kaunda “Our experience in the last three and a half years has been that they have taken out of Zambia every kwacha that was owed to them. A major part of the capital for expansion programmes of both mining companies has been obtained from external borrowing and not from retained profits. You may be interested to know that, right now, my government is being asked to approve external borrowing by the two companies of about K65 million”, *Times of Zambia*, 31st August, 1973, p. 1.
### Nchanga Consolidated Mines Ltd. (1971-74)

(All figures in million Kwacha)

<table>
<thead>
<tr>
<th></th>
<th></th>
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</tr>
</thead>
<tbody>
<tr>
<td><strong>Total Sales</strong></td>
<td>449</td>
<td>348</td>
<td>363</td>
<td>555</td>
</tr>
<tr>
<td><strong>Profit before Taxation</strong></td>
<td>204</td>
<td>100</td>
<td>100</td>
<td>277</td>
</tr>
<tr>
<td><strong>Profit after Taxation</strong></td>
<td>97</td>
<td>68</td>
<td>77</td>
<td>113</td>
</tr>
<tr>
<td><strong>Dividend declared</strong></td>
<td>51</td>
<td>36</td>
<td>36</td>
<td>67</td>
</tr>
<tr>
<td><strong>Total loans borrowed</strong></td>
<td>25.2</td>
<td>47</td>
<td>64.7</td>
<td>41.6</td>
</tr>
<tr>
<td><strong>Percentage dividend distribution</strong></td>
<td>53%</td>
<td>53%</td>
<td>47%</td>
<td>59%</td>
</tr>
</tbody>
</table>

Source: Nchanga Consolidated Copper Mines Ltd., *Annual Reports*.

The mining-right holders cite the rate of taxation as the factor inhibiting development in that it reduces their liquidity.\(^{54}\) The new level of taxation, for example, 73.5% for copper, it is argued, is very high by any standard, and although the tax system ensures that tax will not frustrate the recovery of the capital outlay, the very high rate of tax applicable as soon as the capital is recovered makes it a comparatively lengthy process to achieve both the return of the capital and a minimum profit.\(^{55}\) The present rate of tax means that new mining investment has to earn a high pre-tax rate of return than other investment in Zambia in order to earn the same rate of return after tax. This in a sense is strange in that one would expect the reverse to be true - i.e. that mining being a high-risk industry, a high prospecting rate of return is required to attract new investment than in other industries.

The reality, however, is that throughout the world, proceeds from mining rights are taxed more heavily than those from ordinary industry despite these apparent contradictions. Most governments regard mining as a very profitable industry and there is the feeling that minerals because of their exhaustible nature are a special commodity.\(^{56}\) Most

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\(^{54}\) Letter from Roan Consolidated Mines Ltd., to Minister of Industry 5th June, 1974.

\(^{55}\) Oppenheimer has stated, "The change over to a taxation system based entirely on profits is a development which I very much welcome, though the new low grade combined rate of mineral and income tax at 73% is very high indeed; too high I would judge, to give adequate encouragement to the development of new low-grade mining projects, *Statement by the Chairman*, Anglo-American Corporation, 1970.

governments are aware that there is a limitation in time to the benefits that may be extracted from a mining industry and take the view that through taxation they must make the largest possible contribution over the shortest possible period towards preparation for the inevitable end. It is important to point out that although the rate of tax is 73%, no company has paid that much since the new tax formula was introduced. The average payment of taxation is around 50% because of the writing-off of capital - a rate not much higher than the combined effect of the pre-1969 taxes though much better and fairer in that it is based on profit.

PERCENTAGE OF PROFIT PAID AS TAX BY MINING COMPANIES (1970-74)

Roan Consolidated Mines Ltd.

(Million Kwacha)

<table>
<thead>
<tr>
<th>Year</th>
<th>Profit before tax</th>
<th>Tax Paid</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>1970</td>
<td>108.7</td>
<td>69.9</td>
<td>64.3</td>
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<tr>
<td>1971</td>
<td>84.9</td>
<td>36.1</td>
<td>42.52</td>
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<tr>
<td>1972</td>
<td>53.7</td>
<td>10.7</td>
<td>19.92</td>
</tr>
<tr>
<td>1973</td>
<td>75.7</td>
<td>28.5</td>
<td>37.65</td>
</tr>
<tr>
<td>1974</td>
<td>222.5</td>
<td>114.0</td>
<td>51.24</td>
</tr>
</tbody>
</table>

Nchanga Consolidated Copper Mines Ltd.

<table>
<thead>
<tr>
<th>Year</th>
<th>Profit before tax</th>
<th>Tax Paid</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>1970</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1971</td>
<td>204</td>
<td>107</td>
<td>52</td>
</tr>
<tr>
<td>1972</td>
<td>100</td>
<td>32</td>
<td>32</td>
</tr>
<tr>
<td>1973</td>
<td>100</td>
<td>23</td>
<td>23</td>
</tr>
<tr>
<td>1974</td>
<td>277</td>
<td>114</td>
<td>50</td>
</tr>
</tbody>
</table>

Source: Figures calculated from Roan Consolidated Mines Ltd., and Nchanga Consolidated Copper Mines Ltd., Annual Reports.

The high rate of taxation has led to suggestions by mining companies that the government should introduce investment allowances. To encourage the opening of new industries, the government some years
ago introduced the Pioneer Industries Act under which industries could apply for a tax-free period of five years. In addition, all manufacturers may claim the "investment allowance" which entitles them to write off 100 per cent of the cost of industrial buildings and 120 per cent of the cost of plant and machinery used in the manufacturing process. Since to explore for minerals and develop a new mine to the stage of regular production is a capital-intensive operation lasting several years and one which usually involves more financial risks than setting up an industrial venture it has been suggested that these should be extended to the mining industry. And that similarly, no taxes should be levied on any dividends paid by the mining companies until a mine reaches the stage where it first pays tax on its mining profits. This would enable shareholders in a company which develops a new mine to recover not only the capital expenditure on the mine but also the rate of return free of tax.

1. Taxation concessions and investment decisions

While agreeing that the level of taxation is one of the major reasons adversely affecting the level of mining investment in Zambia, it is suggested that it is not the most important and that the keeping of the level of taxation low would not solve the problem unless other factors are attended to as well. It is important to be clear about the extent to which tax rates affect investment decisions. Tax allowances which cannot achieve the desired results could simply be ignored a ready source of much-needed revenue, and, as pointed out earlier, ignoring income in the case of minerals is more serious than in the case of other industries because of their exhaustible nature, and in any case unnecessary tax holidays over a fixed period would only encourage earlier extraction of ore than other economic and technical factors dictate.

A high rate of taxation reduces both the outflow of profits and the building up of foreign owned assets out of earnings from mining operations. It also directly affects a basic economic factor, namely the investment rate of return. From the investor's point of view, any increase in taxes corresponds to a charge in the profit rate of his investment - without doubt very important considerations to mining right holders. It is important not to lose sight of the fact that capital required for investment is owned by ordinary people who will be motivated by the above predictable considerations.

The emphasis on taxation is also based on the investment theory that in order to persuade and induce foreign firms to invest in the Zambian mining industry, foreign operations should be expected to yield higher returns than those available in their own countries to compensate for

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57 Fatorous, Government Guarantees To Foreign Investors 1963, p. 51.
the extra trouble of and risk of doing business abroad.

The line of reasoning above is based clearly on the well-known arguments of classical economic theory, assuming unchanging technology, perfect competition, and a perfect knowledge of all future investment opportunities, prices, costs, and revenues; further assuming that the only motivation of the investor, who is the sole decision-maker, is the maximization of profits, the investment decision becomes a simple mathematical formula: investors should maximize the difference between the discounted (known) stream of earnings and the discounted (known) stream of costs of every possible investment. As long as the rate of return on any investment arrived at by this calculation is higher than the market rate of interest, the investment will obviously increase the value of the enterprise and this should be implemented. Therefore investments in foreign countries will be made when the rate of return abroad is higher than the rate of return in domestic home market.

Of course, no sophisticated economist would argue that this stereotyped model is an accurate or even approximate description of the real world or of the way businessmen behave. Indeed, many of the assumptions of this classical model have been relaxed or refined. It is well recognised that the businessman of today is usually not an individual entrepreneur, motivated solely by an urge for profits, but a large organisation each with its own set of goals and objectives. A forecast of high profits will not suffice by itself to attract mining investment or any investment at all.58

Theoretically tax concessions are a form of subsidy granted to investors in a field of economic endeavour the government would like to promote. Governments hope that by granting such subsidies they will attract investors who would not invest otherwise. A tax concession is, therefore, effective if it brings about incremental investments. The larger the benefits to the economy per Kwacha of government income foregone, the higher the efficiency of the measure; clearly, it is inefficient to grant a subsidy to investors who would have invested even without it. The higher the number of beneficiaries of the subsidy who would have invested without it, or who receive the subsidy although they do not fulfil the conditions and goals desired by the government granting the subsidy, the lower its efficiency.

Clearly, if the government spends a large part of its resources on ineffectual subsidies, it may not have resources left to promote other important economic endeavours, or it must resort to inflationary means to finance its expenditures. In the allocation of its resources, a government

58 Most studies are agreed that foreign investors say that tax concessions and pioneer status play only an insignificant part in bringing them to a country. See Acharohiu, Foreign Investment Decision process, 1966, p. 24.
should therefore weigh various measures according to their efficiency. Also when the efficiency of tax concessions is gauged, there are at least two governments whose policies should be taken into account: that of the capital-exporting country and that of the capital-importing country. The two may be looked upon as rivals in a game, the policy decisions of one being able to wipe out the effect of a policy decision of another in the absence of bilateral agreements. If income tax in Zambia is lower than that in a foreign country.

One has to consider the policies of other mining countries in that, owing to their differing initial capital allowances depletion allowances, tax holiday periods, and treatment of losses, income or profits taxes may vary even when the actual rates set in the budgets appear identical, in reality affect mining rights holders differently. Within Africa, for instance, many governments have, without regard to the policies of other African countries, promulgated invest-ments laws which offer competitive concessions in the hope of attract-ing investment,\footnote{For some of the examples, See Akimumi, “A plea for the Harmonization of African Investment Laws” (1975) 19 Journal of African Law, p. 134.} thereby cancelling out each other’s efforts.

Similar foreign companies in the same country may be differently af-fected by the host country’s tax regime depending upon whether or not they operate in more than one country. With multinational companies there is also the danger that costs may be manipulated as they naturally prefer to end up with the largest profits in countries not only with tax incentives but also with generous exchange control regulations which a country such as Zambia cannot afford.

3. Investment and cost saving measures

Theoretical calculations based on the traditional economic model point out that tax exemption significantly increases the stream of earnings when such earnings are available (i.e. when there is a taxable income). The increase is greater, the larger the difference between the rate in the absence of considerations and the tax rate during the exemption period, the larger the rate of discount used, the shorter the invest-ment horizon, and the higher the expected taxable profits. Thus in gauging the effect of tax, one assumes a profitable venture, and it is only then that taxes imposed become relevant.

It is submitted that a number of things can be done other than the mere granting of tax concessions. Since the mining investor’s first con-sideration is to avoid the loss both capital and management time and uncertainty, an inducement that is merely a function of profit will not alone suffice. Measures that reduce the size of investment, the cost of capital, and the cost of production, in that order of importance, will be
the most effective. According to the Mining Year Book Zambia’s costs are high and in 1971 compared very nearly with costs of production of minerals in the United States, South Africa, Peru, and Chile. More recently, they have escalated in the aftermath of world-wide inflation. Of course the main reason for Zambia’s relatively high cost price, in spite of the very high grade of its ore, is its land-locked position. Distances from mineral production centres to its main shipping points on the Atlantic and Indian Oceans range from 1600 to 2300 kilometres and are to a large extent beyond the capacity of the government to influence.

But other cost-increasing factors are within the capacity of the government to influence. One such factor concerns infrastructure costs. The mining right holder is expected to provide houses for employees, roads to areas of mining, his own water systems, and so on. These infrastructural costs are proving to be an increasingly large part of project costs— as much as 25% — and can turn a commercially profitable project into an unprofitable one with the result that the project does not proceed. It must be realised that even when other things are equal, the costs of operating at a geographically remote property will inevitably be greater than at one in a more accessible and easily serviced area. This comes about in several ways, including the obvious one of transport of personnel and supplies, and of the output. Mines are heavy consumers of electric energy, and the transmission costs to a remote site will tend to be heavy. Even historically, this point has been very important. It is generally recognised, for instance, that mining could never have emerged from the experimental stage until railway transport became available to carry machinery, fuel, and ore.

Measures should actively be considered for the establishment of machinery to prevent projects which are in the national interest being

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60 E.g. cost of production in 1969 in the United States of America was 28.9 cents per lb., in Zambia 29 cents per lb., in Peru 22.4 cents per lb., in Chile 24.3 cents per lb. and South Africa 23.3 cents per lb. Mines Industrial Development Corporation Year Book, 1971.

61 One of the country’s two big mining groups, Nchanga Consolidated Copper Mines Ltd. has reported production costs per tonne (excluding transport) of about £507 in the year to April, 1975.

62 See Chairman’s Statement, Nchanga Consolidated Copper Mines Ltd., 1975. In fact this problem even affects delivery of supplies to the mines with the result that the completion of capital projects and repairs to existing plants is delayed.

63 Production costs include all operating costs and other costs; for example, administrative costs, depreciation, export taxes, duties, and interest on loans excluding taxes on profits. See De Vetter, Mining Costs, Memo by the Director of the Metals and Minerals and Minerals Development Unit, Ministry of Lands and Mines, 1968.

64 The amounts involved often run into millions of Kwacha see Mining Mirror, 3rd October, 1975, p. 7. Nchanga Consolidated Copper Mines Ltd. spent K2.4 million on housing and other social amenities in 1974 alone, see Annual Reports, 1974, p. 9.
shelved because of this situation. The state should also take measures to create such infrastructure independently, thus effectively to reduce the costs to the mining right holders. The point to be borne in mind is that unlike ordinary businesses say a factory, one cannot site the mine where one wants, and unlike other businesses too there is no insurance. Measures to offset costs of infrastructure will also encourage the prospecting and exploration of areas far away from the line of rail and unlike tax concessions can be used by other economic activities. In this context, the role of new mining investment would be not only to generate new opportunities for employment but also to develop new centres of economic activity away from existing urban areas and the line of rail.

Another factor is the customs duty imposed on mining equipment, which significantly increase costs. This is completely within the power of the government as its imposition is in the discretion of the Minister of Finance. 65

It would be understandable if there were a local source of machinery in that the duty would be aimed at forcing mining-right holders to utilise the local source; but there is none. 66 It is submitted that government could reduce costs to rural miners, where costs are higher for reasons referred to earlier, by charging lower customs duties on all machinery, plants, laboratory equipment, and instruments employed for the mining or prospecting of minerals in very remote places.

There is also the shortage of Zambian technological expertise, whose direct co-operation is essential for the effective operation of the mining enterprise. This means that the mining right holders have to engage in training programmes, which not only add to the cost of the investment but also cause delay in the completion of projects. Of course the scarcity of skilled manpower and trained personnel who can be used in both high managerial and technical positions is a general problem throughout the economy. But its existence places a special responsibility on the government to formulate labour laws aimed at restricting the employment of expatriates in industry in the light of the educational standard of the country and not to pursue policies which make it impossible or difficult to recruit competent expatriate manpower or delay the availability of local manpower to industry. Mining Costs should not therefore be increased by a premature application to the mining industry of the tax on expatriate labour introduced in 1975 67 for such a measure can only operate as a cost when it is justified by the local educational standards.

65 See Customs and Excise Act, Chapter 662 of the Laws of Zambia.
66 See Nchanga Consolidated Copper Ltd., Chairman's Statement, 1974.
Another factor completely out of the control of any one country but which commodity producers can work together with consumers to eliminate is that severe fluctuations in the prices of minerals are likely to discourage investments in the development of new mines. High prices usually entail higher costs in the form of tax and wage increase that weigh heavily after prices have fallen.

4. Other non-cost factors affecting mining investment

Quite apart from the factors that affect the rate of return on investment, there are other factors such as the political situation and the exchange control restrictions whose disincentive effect is placed very high on the list of disincentives by the majority of mining rights’ holders.

i) Exchange control

Exchange Control\(^{68}\) restrictions affect mining-right holders in two ways. At best it means that they have to submit to various requirements, formalities, and delays whenever they wish to transfer their earnings or their capital outside the country; at worst they are not allowed to take out any. And it also renders difficult the employment of foreign technical or managerial personnel, in view of the limitations on the transfer of their salaries abroad.\(^{69}\)

Closely associated with this is withholding tax and restrictions on percentage of profits which can be exported.

New mining investment is more deterred by remittance restrictions on dividends than by taxation. This is because to the investor the earning of a profit which he can remit home is the fundamental value and attraction of any mining venture. This is particularly true in mining because of the fact that the risks involved in actually finding a mineral and then profitably mining it are very high.

Admittedly the problem is not an easy one to solve; the country cannot be expected to eliminate all measures of exchange control but since

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\(^{68}\) It is imposed by the Exchange Control Regulations Act, Chapter 593 of the Laws of Zambia. In law a state is competent to regulate its own monetary matters. Consequently the imposition of exchange control is in no way unlawful. See Hyde, \textit{International Law as Interpreted and Applied by the United States}, 1947, p. 690. The International Monetary Fund allows member states to “exercise such controls as are necessary to regulate international capital movements”, but members may not “exercise these controls in a manner which will restrict payments for current transactions or which will unduly delay the transfer of funds in settlement of commitments...”. The states which have accepted the obligations of the fund agreement are bound by its articles not to “impose restrictions on the making of payments or transfers for current international transactions” without the prior approval of the Fund except under certain conditions governed by special or temporary authority contained in other provisions of the articles, see Article VI, Section 3, Article VIII, Section 2(a), also Article VII, Section 3(b) and Article XIV, Section 2, Articles of Agreement of the International Monetary Fund.

\(^{69}\) See Fatouros, supra, p. 35.
mining investors are justified in preferring to invest in countries where they will be less affected by exchange control measures, reasonable provision should be made for foreign companies to transfer dividends abroad to their shareholders. This entails a realisation on the part of responsible authorities that although in the short term when money goes out of the country due to the easing of restrictions the country loses, in the long run it may benefit in that further investment will be forthcoming from the same source.

At the same time measures designed to encourage investors to reinvest their profits should be considered, such as allowing them to reinvest in the activities of their own company or in other mining activities, free of tax up to some percentage of their profits before tax with a maximum annual limit. This could reduce money available for export while at the same time promoting the development and discovery of mineral resources.

ii) Political and legal climate

With all the risks inherent in mining, the final criterion for an investment climate depends primarily on the political and legal security of the region and the country in which a deposit is located. One of the factors slowing down investments in the mining industry is that the mining-right holders, particularly those that have operated in the country for a long time, are suspicious of the government. They are not reasonably certain of the future in view of the government’s conflicting statements with respect to the future of private investment. The situation is worsened by the naïve but frequent pronouncements by politicians equating any form of profit with exploitation. There is need to convince miners that there is little or no possibility of the creation of an unfavourable legal situation at a later date which will be harmful to their investments. With the existing major companies, the credibility of the government has suffered to some extent by the government’s unilateral cancellation of management agreements in 1973 which though necessary could be said to have been gone about in a wrong way. The reaction of the companies affected is justified too in that no government should expect the respect of the industry if it attempts to change agreements unilaterally and overnight. Measures to restore confidence in investment are urgently needed.

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70 Even local businessmen have remarked that “government measures had created uncertainty, despondence and lack of confidence in the Zambian economy here and overseas” Times of Zambia, 29th August, 1975, p. 1.

71 The lawful redemption of Bonds and of loan stock did not give the state legal title to revoke any of the 1969 take-over agreements which were not tied to redemption; see Master Agreements and also Ushewokunze, “The Legal Framework of Copper Production in Zambia” 1974 Zambia Law Journal, 75, at p. 92.
The special responsibility of the state in this area is to create a favourable political climate and create and perpetuate an atmosphere of trust between itself and investors. It can only do this by committing itself as to the future, to promise with reasonable credibility that arbitrary measures are not going to be taken once an investor has established his operations, that existing measures and agreements will continue to be respected or that should changes be desired, that investors will be compensated for any loss due to damages in such measures.

In short, mining investors have to be assured that they will receive, both today and in future, legally defined and controlled treatment, specified in the relevant legal instruments, and that consequently they need not fear any major changes in local legal or political conditions that would be unfavourable to their interests. It must also always be borne in mind that Zambian problems are compounded by the fact that Zambia is in Africa. Most investors consider Africa too risky anyway and a continent ruled by dictators who have no regard for law and do not keep promises. For them an investment in Zambia is fraught with unknown factors and they are reluctant to become involved in uncertain situations when there are other opportunities on much more familiar grounds. Associated with this is the need for skilled people and establishment of conditions which are necessary to attract and retain skills.