

Marketing strategies of state-owned mineral enterprises

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This paper starts by contrasting the responses to the period of low base metal prices in 1981-86 adopted by mineral producing companies in the industrialised countries and in the developing countries. This leads to some conclusions about the changing competitive position of producers in developing countries. The paper then considers some marketing or financial techniques which can be used to improve or protect the competitive positions of the latter category of producers.

1. Responses of mineral producers in the industrialised economies to the pressures of recession and low prices

According to the conventional theory of supply and demand, excess supply should lead to low prices which cause high-cost producers to close down, thus reducing supply and restoring balance in the market between supply and demand. The recession of 1981-82 and the period immediately following provided a test of this theory in the base metal industries. A prolonged period of low base metal prices did lead to the permanent closure of some high cost mining and smelting capacity in the industrialised countries, but not before there had been another response which was the reduction of operating costs.

It is not surprising that companies faced with unprofitable market prices should try to cut costs, rather than cease production immediately. What was surprising was the extent of the cost reductions that were achieved by base metal producers, particularly in North America.

These two trends — the closure of some high cost capacity and the reduction in operating costs at many surviving production units — have brought about considerable changes in the cost curves of the base metal industries of North

America and of the non-socialist world as a whole. These changes within the copper and aluminium industries are illustrated in the Appendix to this paper. Briefly, the surviving North American producers required much lower prices in 1985-86 to cover operating costs than they did in 1981-82.

The devaluation of the US dollar since 1985 has further improved the cost competitiveness of all US metal producers, and worsened the position notably of European producers.

A further trend has been the rationalisation of corporate interests. Some companies (mainly oil companies) have left the industry and others have merged or reorganised their assets. The result is that we have a smaller number of major producers, many of which have become more cost-competitive. Examples of mergers can be found in all the base metal industries. The Appendix lists some important rationalisation and structural changes in the aluminium smelting industry.

Some new independent producers have also emerged, mainly in North America, which have bought their assets very cheaply from companies leaving the industry. These producers also tend to be low cost, partly because their capital costs are low and partly because they have negotiated lower prices for labour, power and other supplies. The few major new projects brought on stream in the industrialised economies have also had low operating costs, which again lowers the overall cost curve for these countries.

Metal producers in the industrialized countries have thus tended to become more cost-competitive (sometimes assisted by changes in exchange rates, sometimes hindered), and more compact in number. Occasionally, this trend has been accompanied by geographical diversification, or by expansion into a new area (normally gold mining). There has also been a greater recognition of the value of market prices, more emphasis

on the use of trading techniques to maximise returns and some recognition of the need for improved market development.

2. Responses of mineral producers in the developing economies to the pressures of recession and low prices

From the viewpoint of mineral producers in the developing world, the characteristics of the 1980s have been slightly different. Their economies have achieved higher shares of production and consumption of base metals in the non-socialist world. The problem of low prices has to some extent been offset by devaluations of their currencies (except in the extreme case of the collapse of the tin price). A few major new projects have proceeded.

The increasing burden of foreign debt has obliged most exporters of mineral products among developing countries to keep production as high as possible in order to generate foreign exchange, but at the same time debt servicing has severely restricted the amount of capital available for new projects, or for modernising existing operations.

Many producers have also been handicapped by erratic national economic policies (in Peru, Bolivia, and Brazil, for example) or by local political upheavals (Surinam, Iran), or by natural misfortunes (drought in Ghana, earthquake in Mexico).

It is difficult to generalise about such a diverse group as the mineral producers in developing countries but two themes emerge:

(a) Their cost-competiveness compared to the remaining producers in developed countries has probably deteriorated, although many of them remain low-cost producers. Cost-cutting has not been such a widespread strategy as in the industrialised economies, partly because the threat of bankruptcy was less and partly because there was not so much

scope to reduce labour forces, cut wages or negotiate lower power prices.

(b) There has been far less corporate reorganisation and rationalisation of assets than among producers in the industrialised countries; almost no diversification on the part of national mining companies either geographically or by product; and only small progress towards more effective marketing and market development. There has been some investment in downstream processing, but not a large amount. (An interesting exception is Codelco in Chile, which has increased smelting and refining capacity and invested in joint ventures to produce downstream products, in Western Europe and in China). The absence of rationalisation and diversification is inevitable among companies whose interest is confined to one country and often to one industry or even one production unit.

3. The consequences of these responses

(a) The cost curves of the base metal industries are considerably lower and flatter than they were in, for example, 1980-81. Metal prices, on the other hand, rose to very high levels in the second half of 1987, as the surpluses of the early 1980s were finally absorbed. Prices for copper, aluminium and nickel, for example, are now determined not by production costs but by the price that consumers are willing to pay for immediate supply in a market where stocks are exceptionally low. If consumption falls at any time in the next year or two, either because of recession or substitution, prices may have to fall very substantially before production is reduced sufficiently to bring the market back into balance. The 1986 cost curve for the non-socialist world aluminium smelting industry, shown in the Appendix, illustrates the point. Demand in late 1987 was running at about 13.5 Mt/y and the free market price was in the range of 80-90 c/lb. If

demand were to fall to 13 Mt/y (a reduction of only 3.7 per cent), the 1986 cost curve indicates that the price would have to fall to about 58 c/lb before production is likely to be reduced sufficiently to balance the market. And since the few very high cost smelters are mainly not responsive to market prices, the necessary fall in the price would probably be even greater.

(b) Mineral producers in developing countries would suffer very seriously from such a fall in prices, for several reasons: their cost advantage compared to industrialised countries has been reduced; their downstream investment in semi-fabricated products is small and thus they are less protected by added value from swings in commodity prices; and they are less diversified than producers in industrialised countries.

4. How can marketing techniques improve or protect the competitive position of mineral producers in developing countries?

4.1 Hedging

Hedging is a technique available to producers of metals quoted on the London Metal Exchange or on any other futures markets. Hedging should be seen by primary producers not as a potential source of profits but as a means of removing uncertainty over future revenue. LME metals can now be traded up to 15 months ahead on LME contracts and, by negotiation, up to 2 or 3 years ahead with brokers.

A simple hedge sale on a forward market will fix a price for the seller. In retrospect this may be seen as a successful or unsuccessful move, depending on whether the spot price is lower or higher when the forward sale date arrives. Many producers are deterred from hedging by the fear that they will be open to criticism if the price rises after they have made a forward sale.

An alternative method of hedging LME metals and gold is now available, through the use of options, which overcomes this difficulty. For example, a put option may be purchased at or just below the current price (if this is considered a satisfactory price for future production). If the price subsequently falls, the option to sell is exercised and the hedge price is secured. If the price rises, the option is allowed to lapse, and the producer sells at the market price.

Of course, this extra flexibility has a cost. The cost of buying an option will be greater than the dealing costs associated with marking a hedge sale. However, the benefit of buying a put option is that it gives a seller the security of an assured price while allowing him to benefit from any increase in the market price.

The stabilisation of revenue within certain limits is also a desirable objective among some developing countries who are heavily dependent on mineral exports. Price stabilisation schemes based on direct intervention in the market are not likely to be considered again after the collapse of the International Tin Council's buffer stock.

However, a similar effect can be achieved by the purchase of put options and the sale of call options. This provides the security of a floor price and the certain knowledge that the selling price will also not exceed a certain level (provided options are purchased for the same amount of metal). The additional benefit of this process is that it can be self-financing: revenue from the sale of a call cover the cost of buying a put option.

Using options as a hedging mechanism requires skilled personnel with easy access to markets in London and New York. The process also needs to be understood by senior management. For producers in developing countries, there may be a need for training in this field. Assistance in this area, and in all applications of trading techniques in mineral

producing companies, can be provided by Commodities Research Unit.

4.2 Improving sales revenues through trading

Metal traders have traditionally made money by exploiting and eliminating inefficiencies in the movement of metal from producers to consumers, or in the supply of raw materials between non-integrated production units. Gradually, producers have learned the basic switching techniques employed by traders and many now carry out these operations themselves, in order to save transport costs. Many also understand how a contango on the LME can be exploited by a merchant, and can therefore negotiate to retain part of the trader's profit when dealing with a trader.

Any producers who are not yet familiar with these trading techniques are ignoring the opportunity to make a small but useful addition to their profit margins. Again, the main requirements are trained personnel, access to the major metal markets and the necessary understanding and backing from the senior management of the company.

A few producers have followed this strategy further and created trading subsidiaries, which not only exploit switching opportunities but also engage in trading that does not involve the company's own production. There are risks and problems associated with this type of diversification but, properly managed, it can yield a satisfactory profit and important, though intangible, benefits in the form of information from the market place which is very hard to obtain in any other way. The best known example of a trading company owned by a producer is Pechiney Trading Company; a smaller and more recent example is Memaco Trading, which is jointly owned by Memaco Services and Zambia Consolidated Copper Mines.

Options can also have a role in this wider context of trading, since producers of metal can also be natural granters or

call options. If a call option is not exercised, the producer can add the price received for the option to his sales revenue; if the call is exercised, the producer can deliver metal from his own provided it is available at the right time and in the right location. Alternatively, he can cover his risk with a market purchase.

4.3 Defending and enlarging final markets for metals through market development

Metal producers cannot influence the changes in demand for their products that arise from growth or recession in the economies into which they sell. However, they can influence changes in demand arising from substitution. The process of substitution is stimulated not by the relative prices of two raw materials (copper vs. aluminium, for example) but by the comparative cost of production and performance of rival products (a copper radiator and an aluminium radiator, for example, or a copper cable and an optic fibre cable).

The market shares won by rival products are often determined or at least influenced by the investment made in product and market development. This type of investment is most easily carried out by major corporations, which have large shares of the markets for their products, are located within the major industrialised economies and are integrated through to the production of semi-finished or even final products, so that they can differentiate their products. These corporations have the finance and the commercial incentive (in the form of prospective sales and profits from their own products) to develop and market new products, or to promote their existing products.

Unfortunately, no producers of base metals fall into this category, with the exception of some of the largest aluminium producers. The reason is that metal producers are seldom integrated down into the production of semi-finished or finished goods; they cannot differentiate

their products from those of their competitors; market shares are often very small and many producers are located in developing countries, far from the final markets for their products.

Producers in this position find it much harder to justify investing in the development or protection of final markets because they cannot prove that such investments will result in increased sales volume or increased prices for their own metal. Most of them also are short of capital and find it difficult to invest abroad, and particularly in the wealthier industrialised countries and in something as intangible as market development or promotion.

Consequently, they have increasingly neglected market development. The base metals, therefore, have lost market share to substitutes, notably to plastics, and continue to do so. This exacerbates the reductions in demand that occur during recessions, whereas successful product and market development could partially offset these reductions.

The solution to this problem is not straightforward. Considerably more money has to be allocated by metal producers to the development of end-use markets. A cooperative approach has to be taken in spending this money. Industry associations exist in many countries for this purpose but their management and style of operation is not always well respected and may need to be reformed. The associations must unite metal producers, semi-fabricators and final product manufacturers, and they must allow the providers of finance to decide which projects to finance, and to assess the results of each project.

For producers in developing countries there is problem in finding money for market development outside their own countries and also in supervising the use of such money, since they may lack adequate international representation. Nevertheless, the demand for their products will suffer if they neglect market development. A few developing countries,

such as Brazil, Mexico and some South-East Asian countries, have potentially large domestic markets for metal products. Here it can be easier for local metal producers to justify investing in market development in their own countries, especially if they enjoy some tariff protection. In some cases (such as stainless steel in Brazil, or zinc in South-East Asia) success is already being achieved, but far more can and should be done.

4.4 Linking costs to metal prices

One important form of protection against adverse market conditions which some producers in industrialised countries have adopted recently arises from the linking of costs to metal prices. For example, some North American aluminium producers have power costs which escalate in line with metal prices; in the copper, aluminium and lead/zinc industries, wages in North America are in many cases linked to metal prices. Treatment charges for concentrates and the price of alumina are also often related to metal prices.

It is less common in developing countries to find power costs linked to metal prices, and wage rates, to our knowledge, are never linked to metal prices. Producers in developing countries appear therefore to be losing ground in comparison to those in industrialised countries in achieving flexibility or variability in their cost structures.

Interest charges on foreign debt must be the single most important fixed cost for many newer producers in developing countries. A major step towards improving the long-run viability of these producers would be achieved if interest charges could be linked to metal prices. Payments to banks and other lenders would then be linked to the borrower's ability to pay.

The link could take one of two forms: (a) capital repayments could be denominated in units of metal, on the model of gold loans that already exist; (b) interest payments could be indexed to the price

of one (or several) metals, so that a proportion of any increase in metal prices between a minimum and a maximum level would be added to the (low) basic interest charge.

Banks and other lenders would have to accept that such loans carry a risk more akin to equity. However, their experience of lending to developing countries has shown that this characteristic is present even in conventionally structured loans. They should therefore now be more willing to contemplate financial agreements that recognise explicitly the equity risk which has long been implicit in their existing loans.

For mining companies, finance of this kind would provide relief at times of low prices in return for higher costs in periods when higher costs could be accepted. The resulting flexibility in their cost structure would restore some of the competitive advantage that has recently moved towards producers in industrialised countries.

5. Conclusions

All metal producers have benefited from good demand and improved prices in 1987. However, this analysis indicates that structural developments in the earlier years of this decade have not been generally favourable to producers (particularly to state-owned companies) in the developing world.

Their cost position is less advantageous, compared to competitors who are still in business in the industrialised countries; they have little protection against low prices from product diversification or downstream investment; and they often lack any major involvement or representation, beyond a plain sales function, outside their own countries. They may therefore be particularly vulnerable to the effects of the next cyclical downturn in prices, which could be severe.

Marketing or financial strategies are proposed as means by which mineral

producers in developing countries could obtain greater protection from such a downturn. Hedging can be used to assure or stabilise income; trading can be used to gain additional revenue and market development can protect or enlarge the final demand for metals. All three require special skills and first-hand knowledge of international markets. These skills and knowledge are as important as the technical skills in mining and metal production which state-owned mining companies have to a large extent already acquired. Finally, additional flexibility could be introduced into the cost structure of mining companies in developing countries by linking interest or capital payments on loans directly to metal prices.

Appendix

Rationalisation and cost reductions in the copper and aluminium industries

1. Aluminium

1.1 Rationalisation in industrialised countries

UK — Merger of Alcan (UK) and British Aluminium, to form British Alcan, resulting in closure of some semi-fabricating capacity, and following closure of the Invergordon smelter.

Spain — Merger of Alugasa and Endasa, to form Inespal, a state-owned company which controls the entire Spanish aluminium smelting industry. Two smelters were closed following the merger.

France — Rationalisation of smelting interests of Pechiney through the closure of three smelters, the planned closure of a fourth and investment in new smelters in Canada and Australia.

Norway — Merger of ASV and aluminium interests of Norsk Hydro to form Hydro Aluminium which controls

77% of Norway's smelting capacity, with corresponding savings in corporate costs.

Italy — Merger of Italian state-owned company with the Italian interests of Alusuisse, to form Alumina. Closures of some smelting capacity will follow in 1988-90, to permit the company to concentrate on semi-finished and finished aluminium products.

West Germany — VAW has closed one smelter and will close another, both of which became uneconomic because of increases in power costs.

Switzerland — Internal rationalisation of Alusuisse, including closure of one small smelter, to reduce overall corporate cost structure.

USA — Alcoa has permanently closed 350 kt of annual smelting capacity which is no longer economic; the company plans to withdraw from the sale of primary ingot products and may well become a net purchaser of primary metal. The company will concentrate on semi-fabrication and on cost reduction at its remaining smelting plants.

— Reynolds Metals has closed and dismantled 310 kt of annual capacity (or 42% of its US smelting capacity in 1980), which has been partly replaced by low-cost new capacity in Canada. The company will cease to be a supplier of primary ingot products and will use its low-cost production of metal to feed its integrated semi-fabricating plants.

— 750 kt/year of primary smelting capacity in the USA has been converted into toll-smelting capacity. This includes four plants which have been sold by previous owners, free of debt, at far below construction costs; a fifth smelter has been sold in similar circumstances, though not to operate as a toll plant. These previously high-cost plants have now become low-cost producers.

Japan — Since 1980 primary aluminium smelting capacity has been reduced from 1.36 Mt/y to 65 kt/y through the closure of all but one of the country's smelters.

1.2 Changes in developing countries

Brazil — Smelting capacity has increased from 270 kt/y in 1980 to 870 kt/y in 1987, and will rise further through expansion at one recently built smelter. However, increases in power costs have reduced the international competitiveness of the smelting industry.

Venezuela — Under the supervision of Corporacion Venezolana de Guayana, smelting capacity at the two partly state-owned companies will rise from 440 kt/y now to about 1 Mt/y by 1992. The industry has also invested upstream in bauxite and alumina production and downstream in semi-manufacturing, both in Venezuela and in Europe — a rare example of total integration from a base in a developing country. However, the major cost advantage lies in electric power, which is of benefit principally to the smelting industry.

Bahrain — Expansion has reduced unit costs at the Alba smelter since 1980. Downstream investment in a rolling mill by related interests has also been achieved but its economic justification is not yet clear.

1.3 Cost reductions

Aluminium producers in the industrialised world have come under severe pressure to reduce costs and restore profitability since the recession of 1981-82. This pressure has eventually proved more powerful than the opposing desire to preserve employment. Multinational companies and companies with extensive downstream integration have numerous options when restructuring their interests geographically or by industrial process. By contrast, state-owned companies in developing countries in some cases operate only a single plant and have much less opportunity to reshape their interests in response to adverse market conditions.

The comparative advantage of some

Table 1**Average cash operating costs at North American copper mines (USc/lb, 1985 USD)**

	1981	1982	1983	1984	1985
Total production (mt)	2.3	1.8	1.7	1.8	1.9
Production covered by cost cata(mt)	1.9	1.2	1.3	1.3	1.4
Average cost (USc/lb)	76	71	64	59	57

Source:

CRU

Table 2**Net operating cost ranges, non-socialist world copper mines, 1982 and 1986**

% of total capacity	1983		1986	
	tonnage operating costs (kt/year)	(US c/lb)	tonnage operating costs (kt/year)	(US c/lb)
0 — 25%	1 371	0 — 45	1 345	0 — 36
26 — 50%	2 345	46 — 59	2 781	37 — 51
51 — 75%	3 544	60 — 64	4 081	52 — 57
76 — 90%	4 263	65 — 70	4 914	58 — 60

Source:

CRU

developing countries lies in low energy costs and low, though the latter may be offset by poor productivity. New smelting capacity is therefore likely to be concentrated in Venezuela and the Middle East (among developing countries) but Canada and Australia provide strong competition among industrialised countries. Semi-fabricating capacity is much less easy to locate in developing countries except when it can serve a large local market (as in Brazil).

The result of cost-cutting and structural change in the aluminium smelting industry can be illustrated by comparing the cumulative operating cost curves for 1984 and 1986. Average costs fell by 15% in those two years and the shape of

the curve is also notably flatter. The very steep section at the high-cost end of the curves for 1984 and 1986 is largely composed of Japanese smelters (now closed) and Indian smelters, which are protected by tariffs from international competition.

Capital costs are excluded from the costs shown on the two curves. These tend to bear more heavily on the newer plants, located in developing countries and often financed by loans in strong currencies. This helps to negate any remaining cost advantage held by smelters in developing countries.

Thus the response to recession among aluminium producers worldwide has resulted in an industry where the competitive advantage of developing countries

in terms of operating costs has been reduced. The financial strength of multinational companies has also been restored, enabling them to pursue a dual target of a smaller but more efficient smelting capacity together with increasingly efficient production of semi-fabricated products.

2. Copper: cost reductions

USA, Canada — Intense pressure from low market prices, accompanied by some closures, has reduced average cash operating costs at the major North American copper mines by 19c/lb between 1981 and 1985, as shown in Table 1.

On a global basis, the decline in production costs is illustrated in Table 2. In 1986 there was 4.9 Mt/y of copper mine capacity (excluding co-product and by-product production) which covered its costs at 60c/lb or below. In 1983, only 4.3 Mt/y covered costs at 70c/lb.

Moreover, there has been a substantial concentration in the industry's cost structure. In 1983 1.4m tpy of capacity (or 30% of the total capacity measured) had costs above 63c/lb. In 1986, only 129 kt/y of capacity required a price of 63c/lb or more to break even.

The competitive position of previously high-cost producers has been correspondingly reduced.

(See table at following page)

Figure 1

Direct operating cost curves 1984 and 1986(1986c)

Cost (c/lb)

