Barriers to Australian Mineral Exports

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Microeconomic reform is needed for the mining industry

The minerals sector in Australia continues to have a significant impact on the country's economic performance, particularly influencing overall trade prospects and external balances. The importance of the sector in the Australian economy is most easily seen in its contribution to exports. Australia is among the world's largest exporters of a number of mineral commodities, including black coal, alumina, aluminium, iron ore, lead, mineral sands, gold, copper, nickel, tin and zinc. Without export controls, Australia could become the world's largest uranium exporter.

Minerals have become increasingly important in exports. From a level of around 32 per cent in the late 1960s, the share of mineral exports in total merchandise exports have risen to more than 50 per cent in the 1990s. Since 1983, the value of mineral exports has been greater than rural and manufacturing exports.

A few minerals dominate the sector's exports. Over 60 per cent of total mineral exports in 1994 was made up of coking and steaming coal (24 per cent), alumina and aluminium (14 per cent), gold (17 per cent) and iron ore (10 per cent).

More than half of Australian mineral production is dependent on export markets; for some mineral commodities this share is even higher (Knapp 1989; AMIC 1990). For example, 75 per cent of aluminium (ingot metal) production and about 90 per cent of gold production is exported. A high export to production ratio is also involved in coking and steaming coal. Current uranium production is dedicated to the export market.

Because the minerals sector is essentially capital-intensive, its share of total employment is only around 2 per cent, while its share of investment is between a quarter and a third of total private investment. The sector's share of investment spending is much higher than its 9 per cent share of GDP.

Despite the good export performance the sector has shown, relative to other exports, the competitiveness of the Australian minerals industry has been reduced by government policies and regulations designed to protect other inefficient sectors from competition. Protection in favour of one sector of the economy is only achieved by effectively taxing other sectors in the economy (Clements and Sjastaad 1984).

The Impact of Government Intervention in the Minerals Sector

Government intervention in the minerals sector is pervasive. Commonwealth and state governments have major roles because of their ownership of off-shore and onshore mineral rights. The Commonwealth government also has powers over foreign investment, trade and income taxation. The net result is an industry subject to a complex array of government taxes, regulations and controls applied at both the Commonwealth and state level.

Mining rights are almost exclusively held by state and Commonwealth governments which allocate to private firms the rights to explore and develop mineral deposits. Like any other mineral resource owner, the governments can be expected to charge a mineral factor price in return for making mineral deposits available for development. In Australia, however, the various state governments have in most instances elected to use non-price mechanisms to allocate mineral property rights to private mining interests. The mineral factor price is charged through a range of royalties, taxes and other charges as compensation for the allocation of property rights. In addition, governments frequently maintain ownership of the transport and handling facilities while restricting the extent to which these facilities are subject to competition. Governments are also involved in setting the terms and conditions under which labour, capital and materials are

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made available to the sector. Tariffs are also imposed on many material and capital inputs (IAC 1988; Crowley 1990).

Intervention often varies between minerals, between the same mineral mined in different states, and may even vary for the same mineral produced at different mines within one state. The instability of policy, its lack of uniformity across states and minerals, and its often rapid rate of change creates uncertainty and discourages investment (Crowley 1990).

Allocation of mining rights

Initially state governments allocate exploration permits for minerals over specific areas of land. Once the mineral deposits have been identified, mining rights are then allocated. The exploration permit holder is normally given priority when applying for mining rights. Allocation of exploration permits is on a 'first come, first served' basis. As its name implies, the system allocates areas for exploration to the first applicant, who is required to commence exploration immediately. Minimum annual work programs and a minimum number of persons employed per square kilometre are conditions required by some state governments. In some states, exploration permits for certain minerals may be allocated on the basis of a competitive work bid if more than one firm competes for the permit. Exploration permits are generally made available for a limited duration and may require a proportion of the area to be surrendered during the permit period (IAC 1988).

In theory, if the property rights are auctioned then they would be acquired by firms who can extract the mineral most efficiently and would be the ones who are willing to pay most for the rights. However, under 'first come, first served' and competitive work program bid systems, there is no guarantee that the most efficient operator receives the property rights. The property rights are severely constrained under both schemes as they are allocated on the basis of immediate exploration and discovery. This system could lead to the dissipation of rents as mining companies compete to be the first to discover mineral deposits. The system encourages excessive or uneconomic exploration particularly if property rights are allocated over small lots for a limited duration. Other factors which could contribute to excessive exploration are the minimum annual expenditure requirements set by various governments. The relatively short duration of exploration permits can also encourage rapid and premature exploration, resulting in an inefficient allocation of resources through time.

The Commonwealth has encountered serious problems with the work program system used to allocate off-shore petroleum exploration permits. In particular, the Commonwealth has found that in periods of high demand some firms bid overly ambitious work programs to gain the permits. To maintain the credibility of the system, the Commonwealth often enforces the work program even though it acknowledges there is an over-commitment of resources which would be more efficiently utilized in other activities. If governments do not enforce unrealistic work programs, knowledge of this would cause unrealistic bids to be made rendering the allocation process useless. Government selection criteria for the assessment of work program bids can also be ambiguous. This ambiguity is likely to result in inefficiencies as companies utilise resources to fulfil what they perceive to be the government's objectives. The assessment of bids takes time and requires expert advice. Where comparable bids have been made, the system relies on bureaucratic discretion.

After allocating exploration and mining rights by non-price methods, governments then apply a number of mechanisms to collect at least some part of the mineral factor price associated with those rights. A variety of royalties are levied in Australia. Governments also collect part of the mineral factor price through a number of less explicit taxes. Excess infrastructure charges, export duties and crude oil excises could all be regarded as additional mechanisms for charging the mineral factor price.

Royalties

Royalties are the most common and explicit method of charging the mineral factor price. There are four types of royalties schemes used in Australia: specific, ad valorem, profits-based and resource rent royalties.

Specific and ad valorem royalties are output-based royalties. Specific royalties are levied on a per unit of production basis usually involving a flat rate per tonne of ore, concentrate or contained metal. Ad valorem royalties are levied as a percentage of gross value (of output or sales proceeds). Royalties based on either the value or volume of output are a disincentive to production because they reduce the net price the firm receives per unit of output. Ore which should have been marginal is made submarginal by the output based royalty and will be left unmined. Ad valorem royalties act as a disincentive to current extraction by reducing the revenues earned by each unit of output, while specific royalties discourage current extraction by raising the costs of producing each unit of output. Specific royalties raise extraction costs for deposits generating low rents by relatively more than they raise costs for deposits generating higher rents. These effects on revenues and/or extraction costs reduce the net present value of

deposits, thereby reducing the incentives to explore for new deposits. Hence output-based royalties distort both extraction and exploration rates, although specific royalties have a more pronounced effect than ad valorem ones, by encouraging mining companies to avoid low-grade ore.

Profit-based royalties are levied on a proportion of accounting profit earned at either a constant or progressive rate. They are generally levied on a project basis. Profit-based schemes rely on the premise that the mineral factor price is a residual between current mine receipts and costs. Since the royalty takes mineral prices and production costs into account it differentiates between high and low rent deposits and between units of ore within a deposit. Hence, they can be considered superior to output-based royalties which take no account of costs. However, profit-based schemes involve significant administrative and compliance costs. They are more expensive to administer and comply with than output-based schemes. The information requirements of profit-based royalty are substantial and a project's expenditure will require monitoring to ensure management pursues profit maximizing objectives rather than cost padding behaviour to reduce the royalty payment. The higher the royalty rate the lower will be management's incentive to operate efficiently.

Resource rent-based royalties such as the Resource Rent Royalty (RRR) and Resource Rent Tax (RRT) are based on the flow of revenues and expenditures generated by a mining project. The royalty is triggered when a positive cumulative net flow of funds is generated.

The RRR and RRT are royalty arrangements applying to some crude oil production. The Commonwealth has also proposed for a compulsory move to an RRT for new and existing mining projects. These schemes are known for their neutrality as a constant tax rate applies to all receipts and allow deductions for all costs of production. Gains and losses are treated symmetrically, losses receiving a rebate at the tax rate. The tax would share the risk of exploration and development between the government and the mining company. However, the government does not share in all losses. The royalty is levied on a project basis at a rate of 40 per cent on net assessed receipts which are in excess of a threshold rate of return on project outlays. It has no guaranteed loss offset and expenditure on unsuccessful exploration outside the permit area cannot be deducted from project revenues. The royalty is not symmetrical in this respect, since the firms bear all the risk of unsuccessful projects and receive less than 100 per cent of the returns from successful projects. The royalty in effect, is a tax on success and efficiency. It reduces incentives to explore and develop mineral deposits to a greater extent than ad valorem royalties (AMIC 1991).

Excess transport charges

In addition to explicit royalties, some states also charge mining companies an excess transport component for certain minerals. State governments are able to apply discriminatory pricing policies on the provision of state-owned transport services because of their legislated monopoly powers. By restricting the competition which the government services face they are able to charge an excess component. In the case of mineral transport, for example, the utilisation of state monopoly railway is enforced by restrictions on the use of other transport options. If the preferred option is not rail then the excess infrastructure charge imposes additional costs on the mining operation. The Queensland government openly charges coal companies excess rail freight as a de facto royalty. There is also evidence that the NSW government imposes excess charges on coal producers for the provision of port coal loading services and rail freight.

Most Australian mine output is consigned by rail. While rail authorities continue to improve efficiency, this has not been reflected adequately in reduced rail freight rates. Excess rail charges impact heavily on cost competitiveness. Mineral traffic is not uniform across state and Commonwealth systems, but is concentrated in regular traffic from mine site to export wharf or to place of secondary processing. At some locations it is the only traffic. Freight contracts between mine operators and government-owned rail authorities vary from state to state and within states, but generally mine owners have been disadvantaged in negotiations because freight prices of the monopolies have been based on 'ability to pay' (perceived profitability or value of mineral cargo) rather than on the competitive price for the service (Tyler 1990).

Export duties

The Commonwealth government levies export duties on two mineral products, high quality coking coal and uranium. Export duties on coal were first introduced in 1975. Initially, the duty was payable on all export coal, the value of the duty depending upon the quality of the coal. Since its inception, the coal export duty has undergone a number of changes in both rates and coverage. These changes have the potential to increase uncertainty and may lower investment in the industry. The rationale behind the imposition of export duties was that they would ensure that part of the increased profits earned by the industry would be channelled to the community. The government

accordingly directed its policy at mines earning high profits and emphasised that the duties should not be passed on through higher export prices. The selective nature of the duty allows the government to impose the duty on export mines it considers can bear the burden of the tax.

Input tariffs

Government intervention also affects many of the inputs used by mining companies. One of the important policies affecting inputs is tariff protection. Tariffs assist the local manufacturers of a product by increasing the price of imported goods competing on the local market. When the product being assisted is used as an input into another industry the tariff penalises the user industry by raising its costs. There is a wide spread of tariffs levied on inputs into the mining sector such as on spare parts of mining machinery, capital equipment, etc. The tariff penalty varies according to the type of technology used in mine operations. Tariff rates on mining equipment used in open cut operations are substantially higher than those for underground mining equipment.

Excises on inputs

The most common of these are excises imposed on most petroleum fuels. These excises have a similar effect to tariffs in inflating the prices of materials used in the mining sector. Diesel is the major petroleum fuel used in mining. It is also subject to a relatively high excise which is set at a specific rate in cents per litre. However, diesel used in off-road machinery in the mining sector is eligible for a partial rebate, and in the end, the Government levies on mines a specific excise of 2.388 cents per litre.

Other major inputs into mining, subject to indirect taxation of 20 per cent wholesale sales tax are lubricating oils and greases. In contrast, non-lubricating oils and greases used for mining machinery and equipment are exempted. Australia's wholesale sales tax involves multiple, and in many cases, high rates on a relatively narrow base resulting in significant distortions to relative prices which, in turn, distort consumption and production decisions. Multiple rates are costly to administer and involve high compliance costs. Moreover, business inputs are not fully exempt, so that an element of indirect taxes remains on exported goods.

Recent amendments to the wholesale sales tax have significantly reduced the amount of sales tax directly paid by the minerals sector. However, despite the efforts to simplify the wholesale sales tax, it remains costly to comply with and highly complex. The industry still indirectly pays a substantial amount of sales tax which is passed on by suppliers in the form of higher prices for services, materials and equipment. Other taxes imposed on the mining industry includes company tax, fringe benefits tax, capital gains tax and payroll tax.

Export controls

The Commonwealth government's export control powers are relevant to mining. Significant controls apply to the quantity, price and destination of the export of uranium and other radioactive substances, and the export of copper scrap and copper alloy scrap is prohibited. Government approval is required on contracts negotiated for the export of alumina, bauxite, coal, iron ore, petroleum and petroleum products. An automatic 12-month export approval is issued for copper from primary sources, lead, manganese, nickel, zinc and salt. Automatic approval for the export of mineral sands is also provided.

Coastal shipping and electricity supply

Another important area of government regulation affecting mining operations is coastal shipping. Coastal shipping plays a major role in the minerals industry, particularly in downstream processing. Bulk minerals and energy products make up about 96 per cent of Australia's total coastal shipping task on a tonne per kilometre basis. Of the total, 28 per cent is accounted for by petroleum and petroleum products, 60 per cent by dry bulk minerals and the remaining 8 per cent by other minerals such as alumina and base metal concentrates (AMIC 1992).

Coastal shipping is restricted to licensed vessels which comply with Australian standards of staffing, accommodation and wage levels. This effectively eliminates competition from overseas vessels and limits shipping services to higher cost Australian vessels. The cabotage arrangements which prohibit foreign competition from participating in Australian coastal trades has contributed to the high costs. The import of foreign ships is also restricted. This is designed to assist the Australian shipbuilding industry at the expense of the other industries. These regulations increase the price of coastal shipping services and hence the cost of mineral ore to many domestic and foreign users. This could mean a reduction in the quantity of mineral ore demanded and exported.

Inefficiencies in the provision of port services are largely attributable to over servicing by tug operators and excessive crewing requirements on the tugs themselves. This arises because of port authority requirements to cater for the worst possible docking conditions (IAC 1988).

Competitiveness of the mineral sector is further reduced by the inefficiencies in electricity supply. The cost

of inefficient electricity supply is particularly severe in the energy-intensive minerals processing industry, like metals processing. The price of electricity is a major factor in decisions about locating metals and minerals processing facilities, particularly with aluminium smelting, where electricity accounts for about 30 per cent of operating costs (Crowley 1991).

The Australian electricity supply industry is characterized by a few suppliers (typical of state-owned authorities) and, hence, lack of competition. The public sector supplies about 93 per cent of Australian electricity, the rest coming from private companies, mainly for their own use. Private suppliers do not compete with public authorities and conditions of supply are governed mostly by state authorities. The Industry Commission's (1991) Inquiry into Energy Generation and Distribution in Australia has identified many inefficiencies in investment, production and pricing practices of state electricity authorities. Problems include over-investment in generating capacity, under-utilized plant capacity, over-staffing and operating losses, attributed to their insulation from competition and a consequent non-commercial orientation. Current reforms underway in the electricity industry however, have aimed at creating a more competitive market. Increasing the degree of competition between suppliers of electricity will encourage suppliers to minimise their production costs and permit users to buy from the cheapest source of supply.

Work practices

The labour market in Australia is characterized by a variety of inefficient work practices. These stem from an industrial relations system which leaves little scope for flexible methods and the pursuit of a common purpose. In the minerals sector, government regulation dictates the minimum conditions under which the sector can employ labour. There are a number of areas of work practices which have been cited as reducing the competitiveness of Australia's mining industries. Labour has been able to win concessions in periods of high employment. Some of these concessions are written into regulations or statutory orders while others are implemented as an unwritten rule. These tend to become entrenched and are then difficult to remove even when economic conditions are less favourable. This inflexibility has the potential to impede the ability of mining companies to respond to changing market situations (BIE 1990). In the coal mining industry, there are restrictions which prevent employers from making best use of their workforce. For example, for every two mine workers a tradesman must be employed to maintain their equipment. Restrictions such as this are considered to be less a legal requirement than an industrial imperative. Other restrictive practices in the coal mining industry include the changing of shifts at many underground mines that have to occur above ground, thus increasing the number of unproductive hours. It is reported that employers' ability to hire workers is restricted to a union list. Coal mining unions maintain a practice of holding 'aggregate' meetings that require 24 hour cessation of work. This practice contributes to unnecessary working days being lost (IC 1991).

Microeconomic Reform: Making the Minerals Sector Competitive

The process of microeconomic reform is aimed at improving the way in which the economy uses its productive resources. By placing a greater emphasis on the efficiency of markets through the removal of impediments to increased flexibility and competition, such reform can lead to improved productivity and a more efficient allocation of the country's resources. This adds up to higher overall living standards for the entire country. The potential gains are both substantial and widespread. They can take the form of lower input costs, increased employment opportunities, lower prices for both domestic and imported goods and services, and higher real incomes and business profits.

The mineral sector has remained one of the more strongly export-oriented sectors in the economy. The sector has had little assistance. It has also borne much of the cost of attempts to prevent or retard exposure of other areas of the economy to international forces. In a study of the mining and mineral processing sectors by ABARE (1988) and the IAC (1988), it was documented that the sectors receive low or negative effective rates of assistance. While the sectors receive some direct assistance, its positive effect appears to be outweighed by negative effects from assistance to other sectors. The sector has been a substantial loser from the microeconomic mistakes of the past and continues to campaign for reform. Most of the microeconomic inefficiencies could be traced directly to the development of non-competitive market structures which have allowed excessive prices to be charged and, in turn, cost levels to rise.

Exposure to competition is the most certain means of ensuring that production and distribution are efficient and that the benefits from efficiency are passed on to consumers. Hence, governments throughout Australia have embarked on a process of microeconomic reform aimed at removing the impediments imposed on the industry and improving its international competitiveness. The vital elements of this process include reductions in government assistance, labour market reform, and a

variety of deregulatory and labour reforms in the services sectors, particularly in the areas of transport, communications and electricity supply.

Reductions in government assistance

The economic costs associated with industry assistance in Australia and elsewhere are well documented. Static economic costs take the form of higher prices, restricted consumer choice, and the inefficient allocation of the country's productive resources. Dynamic costs, on the other hand, arise from inefficient production, management and technology practices at the firm level, rent-seeking and non-realisation of economies of scale.

Policies which add to domestic costs reduce the competitiveness of Australia's mineral exports on world markets. The range of taxes on business inputs in the mining industry distort production decisions and undermine the ability of exporters to compete. An efficient and competitive taxation regime is critical to the international competitiveness of the minerals industry. An efficient taxation regime involves minimal taxes on inputs into the production process.

The tariff reduction program announced by the government in its May 1988 Economic Statement represented an important step in reducing levels of assistance. The government's decision to remove the 2 per cent revenue duty against imports and to implement a program of tariff phase-down to a new two-tier general level for tariffs of 10 per cent and 15 per cent provides a relief for the minerals and other industries.

Of special interest to the mining sector is the action taken to remove duties on mineral processing equipment not made in Australia by extending the Item 45 Concession in the Customs Tariff. Items of mineral processing equipment added to the By-Law include aluminium casting machines, mining shovels, draglines, excavators, haul trucks, metal processing refining vessels and casting wheels. The removal of import duty from these items of equipment discourages inefficient production based on the available level of protection and assistance.

Compared with other sectors of the economy, the mining sector is heavily taxed. Not only is the sector subject to general company taxes, it also pays substantial royalties to state governments. As a continuation of the reform process, the government has implemented a few more measures which would benefit the mining industry. These include the broadening of wholesale sales tax exemptions, the provision of tax deductibility for capital expenses incurred in preparation of environmental impact statements and an introduction of a more favourable depreciation regime.

Labour market reform

Productivity growth and the ability of the minerals industry to adjust to changing economic conditions have been impaired by labour market conditions. Labour market reform is critical for international competitiveness. Centralised wage setting has often resulted in wage increases unrelated to labour productivity. Restrictive work practices also contributed to poor labour productivity. It is, therefore, clear that any significant improvement in labour productivity which might be achieved through award restructuring, improving work practices, and current moves away from centralised wage fixing to productivity-based agreements negotiated at the enterprise level (enterprise level bargaining) could have a profound impact on economic performance of the minerals and other industries. Indeed, a study by the Business Council of Australia (1989) has suggested that better industrial relations and work practices, and a more competitive environment could yield average increases in the productivity of labour and capital in the order of 25 per cent (Blandy 1991).

Deregulatory reforms in services

Many inputs to industry are provided by government-owned monopolies. Reforms in such industries as transport, communications, and electricity supply through deregulation, and other microeconomic reforms leading to improved productivity, increased competition and better pricing policies could lead to substantial potential gains.

Major inefficiencies have been identified in the areas of coastal shipping, the waterfront, port services and shipping delays. A study prepared for the Inter-State Commission's waterfront investigation found that removal of these inefficient practices could potentially reduce waterfront costs by 35 per cent (CTPA 1988). Finally, the Business Council of Australia (1988) has argued that productivity improvements in waterfront and port services may lead to reduced shipping delays and consequently relatively higher international freight rates.

There is also scope for similar gains to other industries in the service sector. Potential increases in performance and efficiency could be expected to reflect improved productivity arising from deregulatory actions and greater emphasis on user pays principles.

Gains from Microeconomic Reform

The economic gains from microeconomic reform can be substantial. To demonstrate this, the Industry Commission (1991) used a special version of the ORANI model of the economy, known as ORANI-MINE to estimate the impact of removing a number of inefficiencies identified in the previous section. ORANI-MINE is a multisectoral model

embodying both direct relationships between industries and final users of goods and services, and economy-wide constraints on the availability of resources and on spending and saving by Australian households and governments.

Mining is found to be a major beneficiary of removal of distortions elsewhere in the economy. If infrastructure and assistance reforms were implemented, mining output would likely increase by almost $5 billion in 1989-90 prices, with gross domestic product projected to increase by over $11 billion. The gains from the adoption of reforms in the areas of transport, electricity supply and assistance to agriculture and manufacturing, accrue from improved productivity, increased competition and better domestic pricing policies.

The mining sector receives the greatest benefit from the reforms. The mining sector output increased by more than 14 per cent while agriculture experienced a decline in output. Most of the increase in mining output could be attributed to the removal of agricultural and manufacturing assistance which raised minerals output by over 5 per cent. Few reforms impose direct costs on the sector, while it is generally well placed to take advantage of cheaper inputs costs and greater access to duty-free imported goods and services since it is less constrained than agriculture by available supplies of resources such as arable land. The reform on domestic pricing arrangements benefit the mining sector from the removal of the excess rail freight charges.

Conclusion

The mining sector is one of Australia's more efficient industries and, with agriculture, will continue to provide the bulk of Australia's export earnings in the foreseeable future. However, the competitiveness of the Australian minerals industry has been reduced by government policies and regulations designed to protect other less efficient sectors of the economy. It has also been adversely affected by inefficient public provision of essential services – energy, transport, ports and shipping – and by labour market distortions. It is not 'clever' to erect a whole array of impediments to one of the few industries in which Australia enjoys a clear advantage relative to many of our competitors. Microeconomic reform cannot be delayed. The removal of inefficiencies should receive high priority.

The outlook for world trade in mineral commodities is sound. The rapidly growing countries, particularly in the Asian region, are likely to become increasingly important. There is potential for large export markets emerging in western and eastern Europe as a result of economic reform and reductions in trade barriers. For Australia to participate and benefit from growing world trade, the minerals industry must maintain its competitive position. *Policy*

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