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MINERAL INDUSTRY QUARTERLY REPORT

DECEMBER 1992

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MINERAL INDUSTRY QUARTERLY REPORT

DECEMBER 1992



Energy, Mines and
Resources Canada

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Ressources Canada

Canada

THE ENERGY OF OUR RESOURCES - THE POWER OF OUR IDEAS

L'ÉNERGIE DE NOS RESSOURCES - NOTRE FORCE CRÉATRICE

ISSN 1188-9004



PREFACE

This publication is prepared by the Mineral Policy Sector of Energy, Mines and Resources Canada. Data appearing in this publication are compiled from many sources using the best information available to us. This report is intended to provide the reader with a digest of general information on the status of the mineral industry in Canada. It should not be considered an authority for exact quotation or an expression of the official views of the Government of Canada.

Your comments on the format and contents of this report are welcome. Specific comments can be directed to:

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INTRODUCTION

With increasingly tough competition in the world's mineral industry, there is a growing concern that Canada may no longer be perceived to be counted among the prime areas for mineral investment and that the best opportunities may lie in the development of known mineral deposits of foreign countries. In regard to this concern, a government/industry task force was established, following the September 1991 Mines Ministers' Conference in Halifax, to review and assess Canada's international competitiveness for mineral investment. Thirteen background papers were prepared, along with a final report which summarized the findings and views of the Task Force. These documents were tabled for consideration at the September 1992 Mines Ministers' Conference held in Whitehorse.

The Task Force's summary report, entitled "The Canadian Mineral Industry in a Competitive World," identified three areas of particular concern that could potentially have a negative impact on Canada's long-term competitiveness for mineral investment: environmental assessment, permitting and regulation; land access and security of mineral tenure; and mineral taxation. The "Executive Summary" of the report provides an excellent overview of these issues, as well as other aspects of the Canadian mineral industry. This issue of the Mineral Industry Quarterly Report features a reprint of the Executive Summary from the report, as well as reprints of Chapter 2 (Competitive Situation of the Canadian Mining Industry) and the List of Background Studies.

Copies of the report and background studies can be obtained by contacting:

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The Statistical Tables section of this issue includes a number of tables that provide data on capital and repair expenditures by the various sectors of the mineral industry (Tables 9 through 16). The data are based on Statistics Canada's annual survey of public and private sector investment. In regard to the metal mining industries, for example, the preliminary estimates for 1991 indicated that capital investment fell from \$1780 million in 1990 to \$1290 million in 1991 (-27.5%). Revised investment intentions for 1992 indicated a further decrease of 10.4% to \$1156 million. (Capital spending includes expenditures for machinery and equipment, as well as construction expenditures for on-property exploration, on-property development and structures.)

Nonmetal mining also showed a decline in capital expenditures, from \$672 million in 1990 to \$593 million in 1991 (-11.8%), and down to \$549 million in 1992 (-7.4%). Similarly, the combined capital spending by mineral manufacturing industries (primary metals,

nonmetallic mineral products, and the metal-fabricating industries) declined from \$3773 million in 1990 to \$3065 million in 1991 (-18.8%). The revised investment intentions for 1992 indicated a further decline to \$2041 million (-34.4%).

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METALLURGICAL WORKS IN CANADA, PRIMARY IRON AND STEEL, 1992

This report lists in detail the facilities, productive capacities, products, and other data of companies that comprised the primary iron and steel industry in Canada as of January 1, 1992. It also includes separate sections pertaining to the steel pipe and tube industry as well as the iron powder and ferrite industry.

Copies of *Metallurgical Works in Canada, Primary Iron and Steel, 1992* can be purchased from the Canada Communication Group—Publishing, telephone (819) 956-4802, and associated bookstores for C\$19.95.

CANADIAN IRON ORE INDUSTRY STATISTICS, 1991 AND 1990

This report is a continuation of the "Canadian Iron Ore Industry Statistics" series that was developed for the *Mineral Information Bulletin* published from 1955 through 1970. The statistical data, when used in conjunction with the "Iron Ore" chapter of the *Canadian Minerals Yearbook*, present a comprehensive review of the iron ore industry for 1991 and 1990.

This publication is available free of charge. To obtain copies contact:

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MINERAL INDUSTRY INFORMATION CONTACT POINT

In order to provide our clients with timely access to information describing the mineral industry, MPS has established a contact point through which requests for specific statistical information on the mineral industry can be channelled. Once a request has been received it will be immediately directed to the officer most able to address that request.

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Remember that we have not yet established a system to distribute information electronically. However, your interest will be recorded, and will be used in making future publication decisions.

Highlights of Recent Mineral Industry Publications by Statistics Canada

Statistics Canada has recently released two publications of interest to the mineral industry. Highlights of these publications follow.

GENERAL REVIEW OF THE MINERAL INDUSTRIES - 1990 CATALOGUE 26-201

In 1990, the total value of mineral production by all establishments in Canada, regardless of their industrial classification, was \$40 778 million (including metallic minerals, nonmetallic minerals, structural materials and mineral fuels).

The total value of production by establishments classified to the mining industry was \$34 668 million in 1990, an increase of 3.9% over the 1989 level of \$33 555 million.

This publication consists of comprehensive final statistics describing the mining industry, including production and value of minerals by kind, by province; average prices of leading minerals and principal statistics by main group and by province.

METAL MINES - 1990 CATALOGUE 26-223

The total value of production by establishments classified to the metal mines industry dropped to \$11 714 million in 1990, down from \$12 902 million in 1989. All metal mine industries except for gold mines recorded a decrease in the value of production from 1989.

The total value of metallic mineral production by all establishments in Canada, regardless of their industrial classification, was \$12 500 million, a decrease of 10.6% from the 1989 level of \$13 982.

This publication covers gold mines, uranium mines, iron mines and miscellaneous metal mines. It presents data on establishments, payroll, materials, supplies and contract services, production and shipments.

To order a Statistics Canada publication (including those given above), you may telephone 1-613-951-7277 or use facsimile number 1-613-951-1584. For toll-free, in Canada only, telephone 1-800-267-6677. When ordering by telephone or facsimile, a written confirmation is not required.

1991 PRODUCTION DATA ON CANSIM

Statistics Canada has recently announced the availability of preliminary 1991 data for the Canadian mining industry. The total value of mineral production in Canada by all establishments that are classified to the nonfuel mining industry was \$12 468.3 million in 1991, a decrease of 13.2% from 1990. Significant price decreases for copper, nickel and zinc accounted for a major portion of this decline.

The total value of production by the metal mining group fell by 14.8% to \$9977.6 million, while nonmetal mining declined by only 0.7% to \$1790.2 million. In the industrial minerals sector, the value of production fell to \$2490.7 million, a decrease of 5.8%, reflecting a general decline in the construction industry in 1991.

Final statistics will be published later in 1993. The above data are currently available to users of the CANSIM system. Further information regarding the nonfuel mineral industries may be obtained by contacting:

Mrs. Teri Newman
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Facsimile: (613) 992-5565

Environmental Updates

As a regular feature in the *Mineral Industry Quarterly Report*, the Resource Management Division, MPS, proposes to include a synopsis of developments in environmental protection and regulation of interest to the mineral industry. Please direct your contributions, ideas, and opinions to Sally Hamilton (telephone: (613) 995-9065) or Jackie Scott (telephone: (613) 992-0000) or facsimile: (613) 992-5244.

- The Department of Environment (DOE) is beginning work to amend the Metal Mining Liquid Effluent Regulations (MMLER), which were promulgated in 1977 under the Fisheries Act and are administered by the DOE. Canada's Green Plan states that "...pollution prevention regulations contained in the Fisheries Act are being updated and strengthened, beginning with the Pulp and Paper Regulations and the Metal Mining and Liquid Effluent Regulations."

The mining industry has indicated that any amendments to the MMLER should be based on solid scientific evidence demonstrating a need for change; available, economic technology; and that there should be a regulation making process which is predictable and involves all stakeholders in consultations early in the process. Mineral Policy Sector (MPS) was successful in convincing the Department of Fisheries and Oceans (DFO) and DOE to establish an interdepartmental steering committee for MMLER amendments and to address the process of regulation making. On September 9, 1992, DOE held an information session for federal departments interested in the MMLER and DOE tabled a tentative plan for amending the MMLER.

MPS has also obtained confirmation that the guiding principles for this exercise will be solid science, available technology, no overlap with the provinces, and an open process involving early consultations with stakeholders (such as industry, provinces and environmental groups), thus addressing the concerns of the industry.

- The *Canadian Environmental Assessment Act* - regulations are being drafted so that the new Act, which received Royal Assent on June 23, 1992, can be proclaimed. The Exclusion List will list those projects which do not cause significant adverse environmental effects: projects appearing on this list will be excluded from further environmental screening under CEAA. The Federal Environmental Assessment Review Office (FEARO) has determined that the CEAA Exclusion List, unlike the EARP Exclusion List, can include projects which have no significant adverse effects **after mitigation with known technology**. This clarification of the criteria for exclusion broadens the scope of the list.

REVIEWS

The Task Force's summary report, entitled "The Canadian Mineral Industry in a Competitive World," identified three areas of particular concern that could potentially have a negative impact on Canada's long-term competitiveness for mineral investment: environmental assessment, permitting and regulation; land access and security of mineral tenure; and mineral taxation. The "Executive Summary" of the report provides an excellent overview of these issues, as well as other aspects of the Canadian mineral industry. This issue of the Mineral Industry Quarterly Report features a reprint of the Executive Summary from the report, as well as reprints of Chapter 2 (Competitive Situation of the Canadian Mining Industry) and the List of Background Studies.

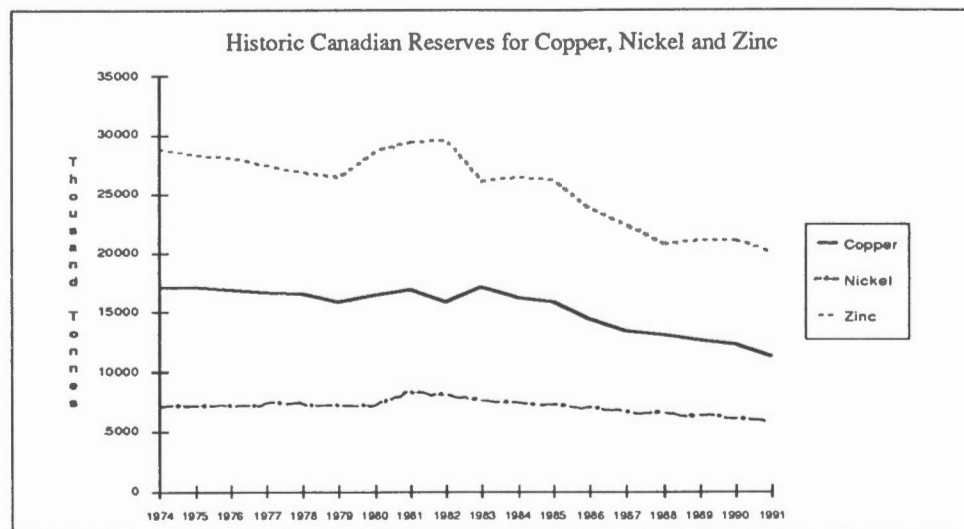
The Challenge Ahead

In order to review and assess Canada's international competitiveness for attracting mineral investment, a government/industry Task Force was formed following the September, 1991 Mines Ministers meeting in Halifax. This Executive Summary highlights the findings of the report prepared by the Task Force.

The Task Force identified several urgent issues to be addressed:

- *to contain the recent deterioration in Canada's cost competitiveness in key commodity areas, including copper and nickel.*
- *to halt and reverse the decline in Canada's base-metal ore reserves.*
- *to develop new ideas, technologies, policies and programs to stimulate more effective primary exploration for new world class ore deposits.*
- *to reverse the apparently ongoing shift of interest by mineral investors, including Canadian multinational mining corporations, away from Canada and toward countries of Latin America, Asia Pacific and other resource rich regions of the developing world.*
- *in general, to create a public policy and regulatory framework more conducive to sustaining industry viability and stimulating investment in mineral exploration and development in Canada.*

Canada's mining industry is facing its toughest challenge in many years. Base-metal reserves have been declining since the early 1980s. Many mines are scheduled to close in the remaining years of this decade. These reserves will not likely be replaced in the near-term future since mineral exploration in Canada has declined in the past several years. Aggressive marketing by developing nations has persuaded many Canadian companies to concentrate on international mineral development opportunities.



As a result, Canada's mineral sector could actually shrink. This would cause significant impacts on both the Canadian economy and the many regional economies that depend on mining for their health and prosperity. Mining and processing account for 17.1 percent of Canada's total exports, 2.7 percent of employment and 4.4 percent of gross domestic product. Mining in Canada contributes a higher percentage towards gross domestic product than in Germany, Japan and the United States.

These trends raise serious questions. Is the mining industry facing long-term decline? Is it no longer competitive? Has the Canadian investment/business climate reached a point where we can no longer attract the investment needed to sustain this important sector?

It is vitally important that Canadian governments and the mining industry understand what impacts these and other structural changes in the global mineral economy are having on the economic fundamentals and international competitiveness of the Canadian minerals and metals sector.

The Task Force report places Canada in a "competitiveness context" and addresses our cost position as a producer of a number of minerals, our geological endowment and our reserve base.

The report also discusses the exploration and development investment activities being pursued by Canadian companies outside of Canada.

Some of the initiatives being undertaken by other countries to attract mineral investment such as relaxed capital repatriation rules, increased tax incentives, and improved tenure rules are outlined.

Finally, the issues seen to be affecting Canada's competitive position most significantly are highlighted. These include: macro economic policies; mineral taxation; environmental regulation; land access and tenure; and, our human resource capabilities.

At issue is what can be done to minimize impediments that could divert mineral investment to other countries.

The report is supported by a series of background reports which examine, in depth, issues that come to play on Canada's competitive position.

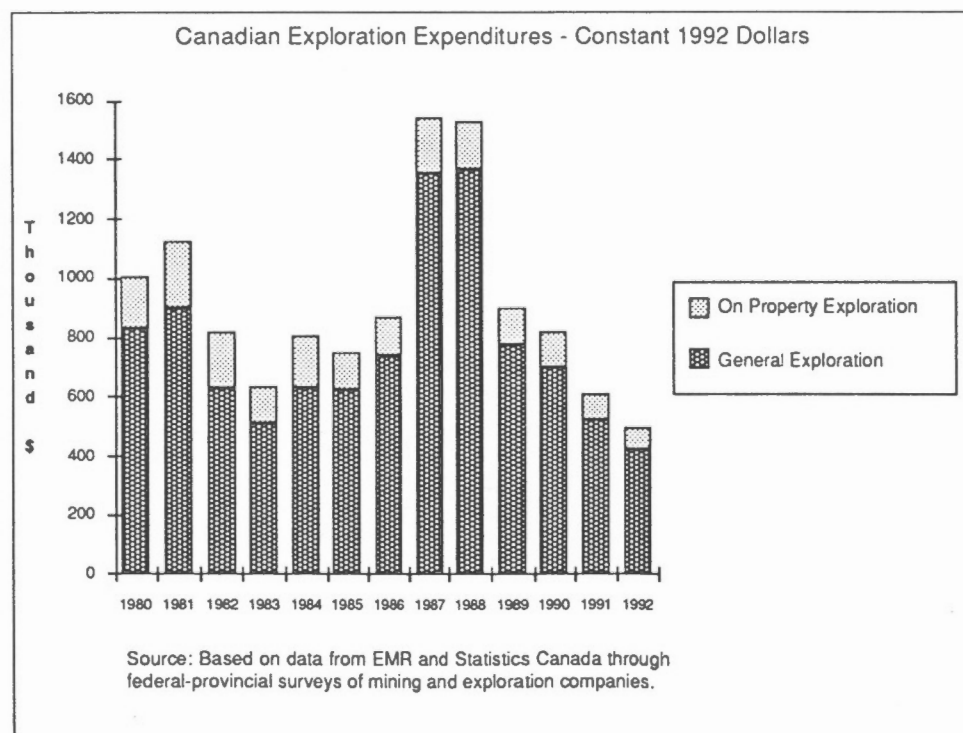
The Competitive Predicament

Canada's base-metal reserves have been in decline for almost a decade. Concerns were expressed, even in the mid-1980s heyday of "flow-through" share financing, that exploration activities were not sufficient to sustain the industry over the longer term.

What is new today is the perception that Canada may no longer be among the prime areas for mineral investment. The best opportunities may lie in the development of known mineral deposits of foreign countries.

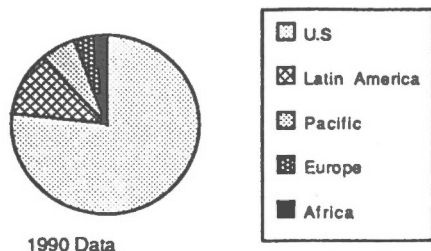
There is a wide perception that the legislative and policy changes introduced in a number of mineral-rich countries, particularly Latin America, have a significant impact on investment flows in the mining industry. By relaxing previous restrictions on foreign investment in resource development, these countries have unleashed a pent-up demand for unusually high-quality mine development opportunities.

However, the effect should not be overstated. Exploration expenditures are down everywhere, partially due to low metal prices. For Canadian mining companies, only 20 percent of their exploration budget is targeted for foreign countries. This percentage is expected to increase, and this suggests that Canadians must look at the various factors that explain the decline in domestic exploration.



EXECUTIVE SUMMARY

Canadian mining companies continue to hold a significant proportion of their out-of-Canada properties in the U.S.



In recent years many governments have implemented, or are currently considering, major revisions to their laws in order to attract investment to their mining industries.

For instance, some foreign investment laws have been liberalized to reduce or eliminate restrictions on foreign ownership and to place foreign investment on a more equal footing with local investors. More specifically, some governments have introduced legislation aimed at reducing taxes on foreign remittances or on foreigners reinvesting profits in the local economy.

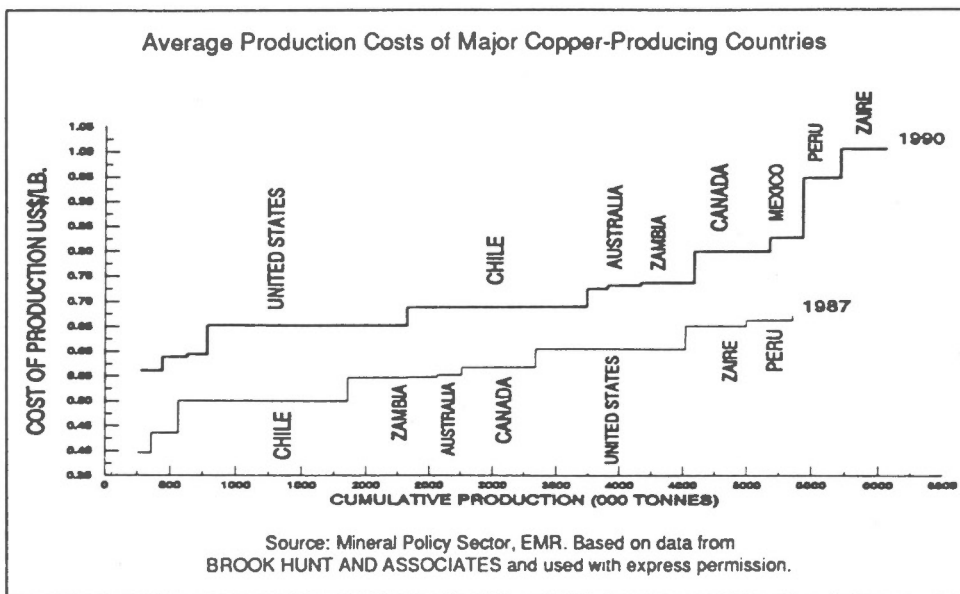
Other measures include relaxation of foreign currency exchange restrictions, implementation of debt-equity swap programs, increased privatization and allowing joint ventures between state-owned companies and private firms.

To attract foreign mineral investment, mining laws have also been revised and mining tax rates, import tariffs, freight rates, export duties and price controls have been reduced or simplified to promote mining activity. Areas of land hitherto off limits are being opened by governments for mineral exploration and development by foreign mining companies.

In talking about the general mineral investment climate, the most important factors include uncertainties about environmental assessment and permitting procedures and time frames, land use access and the resolution of aboriginal claims, which are increasingly being seen by the mining industry and investment community as having a negative influence on Canada's investment climate.

Another factor is the result of tax reforms of the 1980s which reduced the effectiveness of flow-through shares as a vehicle for financing mineral exploration and removed some of the tax features that were previously instituted to compensate for the risk in the industry.

Costs may also be a factor for some commodities. The Task Force examined global data on the international competitiveness of Canada for the production of various commodities. While for many of these our relative cost position has changed little in recent years, there are some important metals, such as copper, where Canada has moved up the cost (or supply) curve.



More worrisome is the fact that many of the new mine development opportunities on the immediate horizon are not, on the whole, highly attractive in economic terms under current cost-price conditions.

EXECUTIVE SUMMARY

Canada is today among the five leading mineral producing nations of the world.

Canada leads the world in the production of uranium and zinc; is second in nickel, potash, gypsum, asbestos, sulphur and titanium concentrates; and, is among the top five ranking countries in the production of aluminum, lead, copper, precious metals, salt, molybdenum, cadmium and cobalt.

Canada's potential for the discovery of new mineral deposits is arguably as great as that of any country in the world.

Canada has a vast landmass underlaid by diverse geological terranes. Although parts of Canada have been well explored, much of the country has been subject to only the most cursory examination.

The overwhelming majority of known mineral deposits in Canada either outcropped or were beneath a thin veneer of glacial overburden. The application of well-tested geological models will still lead to the discovery of buried deposits even in the most thoroughly explored areas. Innovative concepts and technologies can generate new exploration plays and reassess well explored areas.

There remains a need to inform the international investment community of Canada's exploration potential.

Canadians must also be educated about the importance of the mineral sector and the contribution it makes to our economy.

In short, the combination of new opportunities abroad and less attractive economic conditions has quickly dissipated the confident mood which prevailed just a few years ago.

Given the long lead times characteristic of mining, there will be relatively few new mine openings in Canada during the next several years. However, there is no reason why, over the longer term, Canada cannot maintain its pre-eminence, as a mineral producer, if it takes steps now to reverse current trends.

The Task Force believes that it is important for Canadians to understand the fundamental strengths of its mining industry:

- Canada possesses a rich mineral endowment much of which has not been explored using modern exploration techniques. Even today, over 20 percent of global expenditures on non-ferrous exploration are spent in Canada.
- Canada's exploration and mining industries are world leaders in the development and application of innovative methods for discovering and developing mineral deposits and for extracting and recovering the contained minerals.
- Mining is a technology-intensive, high wage industry with the potential to support the aspirations of Canadians for a high quality of life and offers challenging career opportunities.

Policies for the future must be based on the fundamental premise that mining can play a strong continuing role as a dynamic and competitive sector. It is vital to Canada that it do so.

Policy Priorities

When the Task Force began its work, it was hopeful that a good understanding of the forces affecting the industry's recent performance would be reached, and that the requirements to ensure its future strength would be determined.

Accordingly, the Task Force considered a number of factors impinging on the sector's competitiveness, such as macroeconomic policies, taxation, costs and productivity, and exploration incentives in Canada and abroad.

However, it was recognized that competitiveness is a relative concept and that reliable comparative data on all of the relevant factors are not readily available. In some areas, the Task Force believes that more work is required and has made several recommendations for future study.

Improving the quality of environmental and land use policies is key to the continued competitiveness of the mining industry. We need to set clear objectives and priorities for improving the environment and land access; strive for greater harmonization among jurisdictions; and, improve the timeliness and efficiency of environmental assessment processes.

We cannot be "Number One" in competitiveness and "Number One" in environmental quality unless we are also "Number One" in the quality of our policies and regulations.

Efforts by both government and industry to better understand and manage the environment have been prominent for several years. As part of their commitment to the environment, many companies within the industry have developed environmental codes of practice.

In 1990, The Mining Association of Canada endorsed a Guide for Environmental Practice. Companies are "committed to the concept of sustainable development which requires balancing good stewardship in the protection of human health and the natural environment with the need for economic growth."

The federal government has passed the Canadian Environmental Assessment Act. It is intended to clarify the confusion created around the previous Environmental Assessment Review Guidelines order. Other provinces are also reviewing their environmental review process from an institutional and regulatory point of view.

Three areas of public policy requiring immediate attention from Mines Ministers and their colleagues are: environment; land use; and, taxation.

- The environmental review process and compliance standards create four separate areas of concern to industry: uncertainty and unpredictability in the regulatory framework; the possibility of excessive delays and costs; excessive regulations and jurisdictional overlap; and, the costs of up-front reclamation funds.
- Land access restrictions and uncertainties over security of tenure are creating a great deal of concern for the mining industry.
- Recent changes to the Canadian tax system, making it more neutral across industrial sectors, have eroded Canada's previous most favourable standing among competing jurisdictions. Current concerns include: the comparatively high effective income and mining tax burden; increases in nonprofit taxes and levies; and, incentives for primary mineral exploration.

Another area of concern that has been identified by the Task Force is our human resource capability. There is a perception that Canada's education and training performance is not keeping pace with advancing world standards. The mining industry and related academic and professional groups need to do more to improve training opportunities, to open their doors to an increasingly diverse population, and to improve the attractiveness of mining as a career.

Environmental Assessment, Permitting and Regulation

Canada's position in the global economy will depend on how well it can innovate to raise productivity and compete more successfully for investment. This will require a commitment to excellence from the mining industry in all phases of its operations.

However, in striving to improve its competitiveness, the mining sector must also respond to the demands of Canadians to meet even higher standards of environmental performance.

The current environmental assessment and permitting processes, along with increasing compliance standards imposed by all levels of government, have created: an atmosphere of instability and unpredictability in the process; some cases of excessive delays and costs; increased regulation that may not always be supported by well-documented scientific evidence; and high costs associated with up-front reclamation funding requirements.

These perceived shortcomings of the Canadian approach to environmental matters are cited as contributing to the recent shifting of mineral investment abroad.

While some steps have already been taken—both by governments and some industry members—to alleviate the concerns expressed, the Task Force believes that urgent and sustained action by all parties is needed to create a process that can resolve the concerns raised with respect to facilitating enhanced mineral activity without jeopardizing environmental objectives.

At the same time, however, the Task Force also believes that the exact nature and magnitude of the problem needs to be better identified.

Land Access and Security of Tenure

Key aspects of land access and security of tenure concerns include:

- *increasing amounts of land being closed to mineral exploration and development;*
- *the process for evaluation and designation of parks and protected areas;*
- *land use management philosophies;*
- *unresolved native land claims;*
- *and, the potential impact of native self-government.*

Land access restrictions and security of tenure concerns are generating added risks for mineral investors, thereby affecting Canada's attractiveness for investment.

Economic reserves of minerals are widely dispersed. The chance of discovering a viable deposit is very small. The industry needs access to large areas of land for exploration in order to discover ore reserves necessary to make mining sustainable in the future. Significant erosions of the land base will hinder the capability of the industry to replace declining reserves.

The need to protect representative ecological and biologically diverse and sensitive areas is recognized and widely accepted. At the same time the economic benefits of the mineral resource must be accounted for. The two need not be mutually exclusive. However, the process for designation of protected areas, and the industry's ability to provide meaningful input to that process, requires significant improvement.

Current protected areas policies are largely oriented to single use purposes. The possibilities for multiple or sequential uses should be considered more fully in a protected areas program. Planning should also consider the economic impact of land withdrawals and restrictions.

Uncertainties over native land claims and self-government also appear to be affecting the mineral investment climate. There is significant consensus among Task Force members that there needs to be continuing dialogue with native organizations to ensure that management regimes put into place under self government are workable.

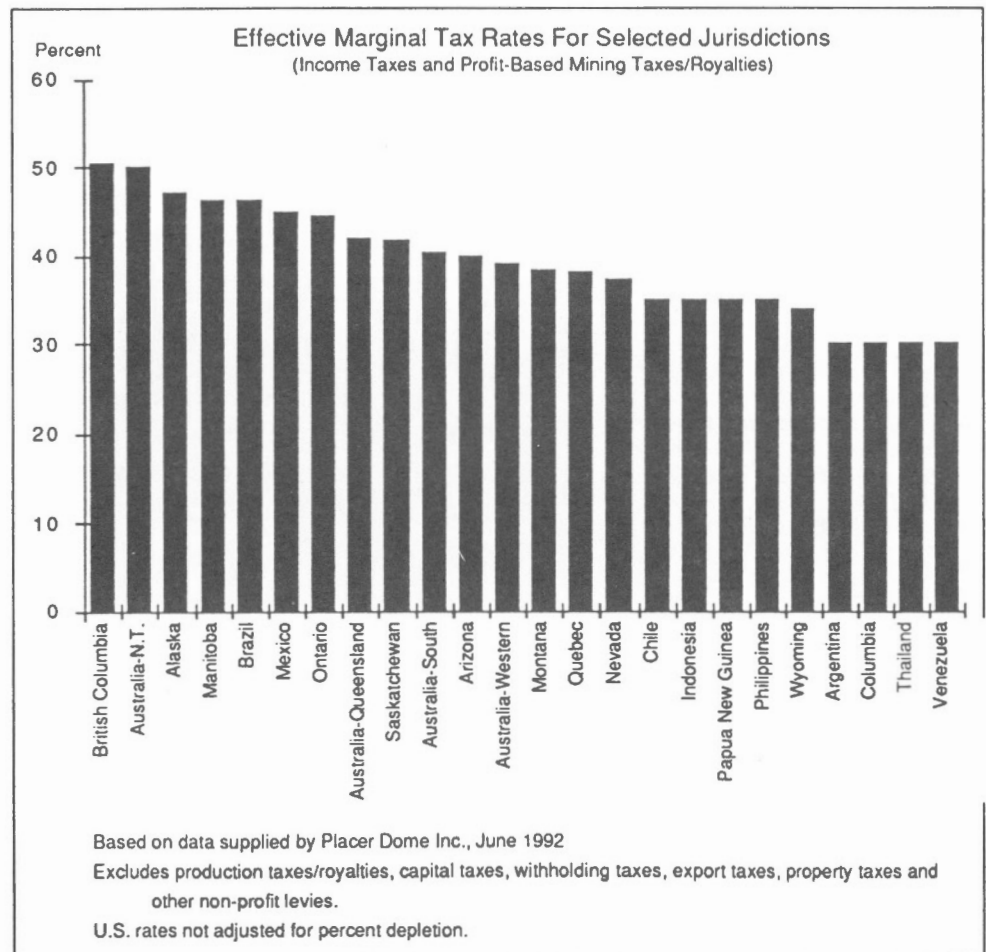
Mineral Taxation

Effective marginal tax rates are used to compare the tax burden of various jurisdictions. These rates are marginal statutory rates adjusted for items that can be expressed as a rate. For example, the Canadian Resource Allowance is effectively a 25 percent reduction in the tax rate.

Effective marginal tax rates do not reflect the time value of accelerated write-offs, tax holidays, tax credits and tax deferrals, or of nonprofit taxes and levies. These would have to be measured by more complex present value analyses using generic models.

Effective marginal tax rate calculations are useful to give a general understanding of the relative tax burden in each jurisdiction when these limitations are understood.

The income tax reforms in Canada in 1972 and 1987 resulted in a loss of several significant incentives, especially the three-year tax exemption for new mines and the automatic and earned depletion allowances. At the same time, other major mineral-producing countries have either kept their incentives, or have created a more attractive tax system for the mining industry.



Canadian effective marginal tax rates for 1985 and 1992 were compared with those of Chile, Mexico, Australia, Brazil, South Africa and the United States. The Canadian tax burdens generally moved from the most favourable to less favourable, with the exception of South Africa. Chile, the U.S. and Australia improved their relative tax burdens substantially. Only Quebec, ranked third, remained reasonably competitive.

There is a perception that the burden of nonprofit taxes has increased more in Canada than in foreign jurisdictions, thereby affecting Canada's competitiveness for attracting international investment in exploration and development capital. Further study is needed in this area.

A number of other tax issues were identified as having competitive implications. These include: the income tax treatment of payments into government-mandated mine reclamation funds; the available for use rule, which applies to capital cost allowances; and, the inclusion of intangible exploration and development costs in computing the Large Corporations Tax. The task force concludes that these items should also be looked at in any comprehensive review of Canada's mineral taxation regime.

Three contentious tax issues are widely perceived to be adversely affecting Canada's international competitiveness for mineral capital and therefore should be addressed. These are:

i) **Comparatively High Adjusted Marginal Tax Burden**

Analysis of marginal income tax and mining tax rates in 1985 and 1992 for four Canadian provinces shows that the tax burden on mining projects in Canada has increased substantially as a result of tax reform.

ii) **Nonprofit taxes and levies**

Nonprofit taxes and levies, such as capital taxes, payroll levies and fuel taxes, have increased steadily in Canada over the last decade. These taxes are not based on income or profit, but use other measures as bases. While there is a role for this type of taxation, it can become a burden in recessionary years because these taxes are not sensitive to varying economic conditions.

iii) **Sufficiency of Incentives for Primary Mineral Exploration**

Canada still offers tax write-offs and flow through provisions for exploration. But the Task Force concludes that investigations should be carried out to determine whether there might be a need to use the tax system to encourage more effective primary or grass-roots exploration for new world class ore deposits.

Interim Conclusions and Next Steps

The Task Force had expected to be able to report to the Mines Ministers this year on these major contentious areas of public policy in a comprehensive manner, including bringing forth ideas and options to remedy them. However, this has proven to be an impractical if not an impossible goal given their enormous complexity and the fact that conditions and circumstances are rapidly evolving on many fronts. It is therefore recommended that the Task Force be given more time to complete the essential research and analysis of these and other areas with a view to reporting them in 1993; Environment, Land Access, and Taxation.

The Task Force also concludes that governments should be more vigilant about the effects of their fiscal policies and environmental and land use policies on the economic and financial performance of Canadian mining projects and companies, and ultimately on the competitiveness of the domestic investment climate for mineral exploration and development.

Finally, the Task Force concludes that the two senior levels of government should be more proactive in meeting the challenges of competing foreign mineral jurisdictions by being more aggressive about marketing Canada internationally as an attractive place for the mineral investor to do business. Investigations should be undertaken to determine if there is significant scope for international activity in this area.

Chapter 2

COMPETITIVE SITUATION OF THE CANADIAN MINING INDUSTRY

2.1 Introduction

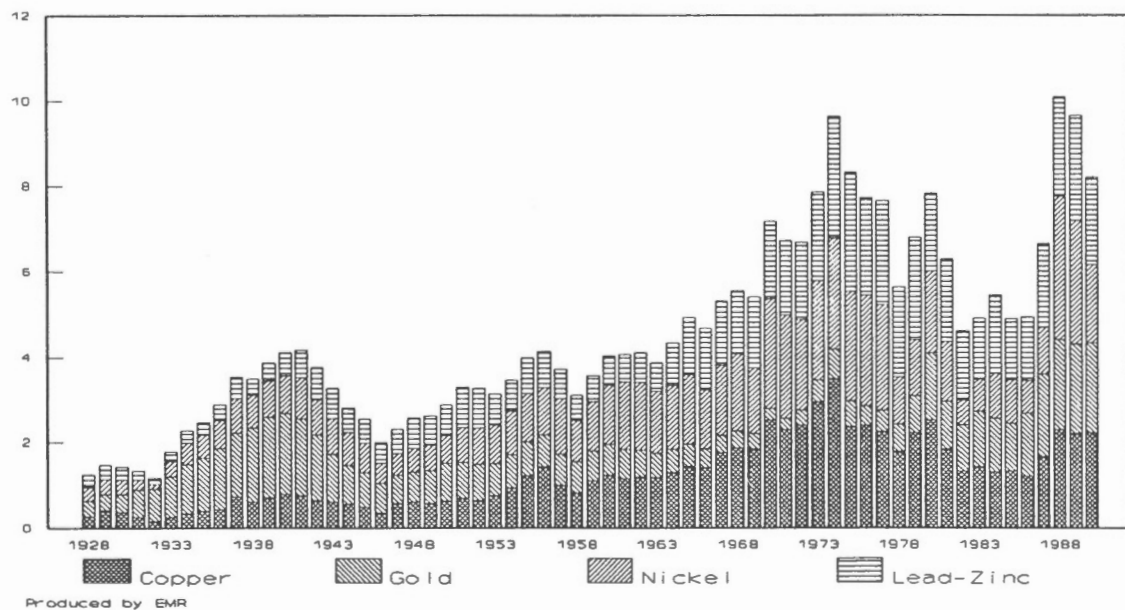
This chapter examines the competitiveness of several sectors of the Canadian minerals industry. In an industry where products are largely homogeneous, and where prices are set on international markets, competitiveness is mainly a function of the ability to produce at low cost, and to gain, maintain or increase market share.

2.2 Canada as a World Metal Producer

The value of Canada's output of copper, gold, nickel, zinc and lead has increased from approximately \$1.5 billion in 1928 to \$8 billion in 1990, in constant dollar terms (Figure 2.1). Between 1928 and 1990, the real value of Canadian mine production of

Figure 2.1
VALUE OF CANADIAN MINE PRODUCTION - BY METAL
Copper, Gold, Nickel, Zinc-Lead, 1928-1990

(\$U.S. 1991 Billions)

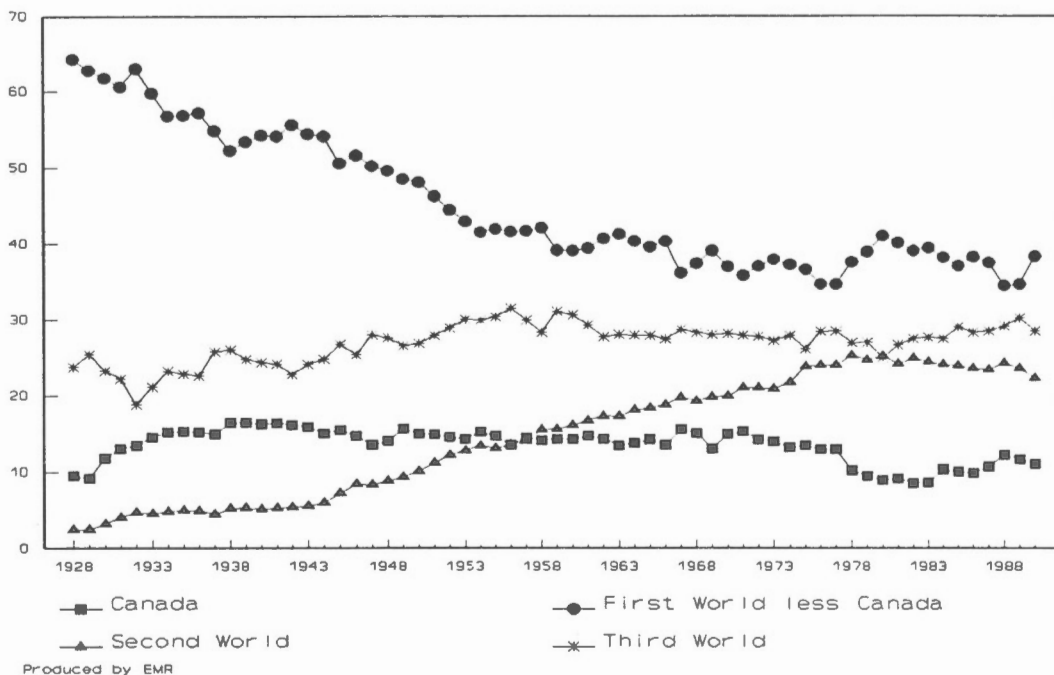


SOURCES: Metallgesellschaft, Metallstatistik, American Bureau of Metal Statistics, International Zinc-Lead Study Group, International Nickel Study Group, World Bureau of Metal Statistics, and Gold Fields Mineral Services Ltd.

these five commodities, accounting for over 75 percent of Canada's total metal production, increased by over 550 percent. In 1990, gold accounted for 25 percent of total output of these commodities, copper 26 percent, nickel 24 percent and zinc-lead 24 percent.

Canada has traditionally accounted for between 10 and 16 percent (in dollar terms) of world output of copper, gold, nickel and zinc-lead. Although Canada's share fell somewhat during the 1970s, it increased throughout most of the 1980s, in spite of a gradual decline in the first world's share of the value of world metal production. In 1990, Canada accounted for 11 percent of the combined value of world mine production of copper, gold, nickel and zinc-lead (Figure 2.2).

Figure 2.2
REGIONAL DISTRIBUTION OF WORLD MINE PRODUCTION
Copper, Gold, Nickel, Zinc-Lead, 1928-1990
(percent)



SOURCES: Metallgesellschaft, Metallstatistik, American Bureau of Metal Statistics, International Zinc-Lead Study Group, International Nickel Study Group, World Bureau of Metal Statistics, and Gold Fields Mineral Services Ltd.

2.3 Cost Competitiveness of Principal Metals

Canada's dominant position as a world producer of metals is a function of the low operating cost of its mines, in large part due to the high levels of productivity achieved.

The Canadian minerals industry achieved significant increases in productivity with the restructuring that began during the recession of the early 1980s. All stages of the industry showed strong improvements in productivity, but the most pronounced was in Stage I where, between 1982 and 1990 inclusive, output-per-employee improved by nearly 120 percent. Crucial to these productivity improvements were the adoption of new technologies and mining methods, most of which were developed in Canada.

Production costs for nickel, copper, and zinc in Canada are on average competitive with those of other countries. Canadian producers have traditionally maintained their competitiveness by adopting new mining methods, employing advanced technology and implementing cost saving measures. However, average costs for an industry do not adequately reflect the range of costs for producing a specific commodity. High cost producers are always vulnerable, but particularly during cyclical downturns such as the current recession. When metals prices are depressed, mine closures are accelerated and new deposits are not brought into production. In Canada, the current recession has witnessed the closure of 18 base-metal mines and 39 gold mines during the period 1989-91. Given the current low metal prices, several mines in Canada remain vulnerable to closure and doubtless more will close before the recession ends. This severe discipline that the Canadian industry must periodically face, along with stringent international competition, allows only the most competitive and profitable to remain in the industry over the long run.

Figures 2.3-2.5 compare the average costs of production in US\$/lb. of the major copper, zinc and nickel producing countries for 1987 and 1990. For each commodity, countries with the lowest cost production are towards the left of the charts, those with highest cost towards the right. Going from left to right, the output of each producing country is added to cumulative Western World production, in ascending order of each country's average costs of production. (Although the former Soviet Union is a major metal producer, costs are unavailable.)

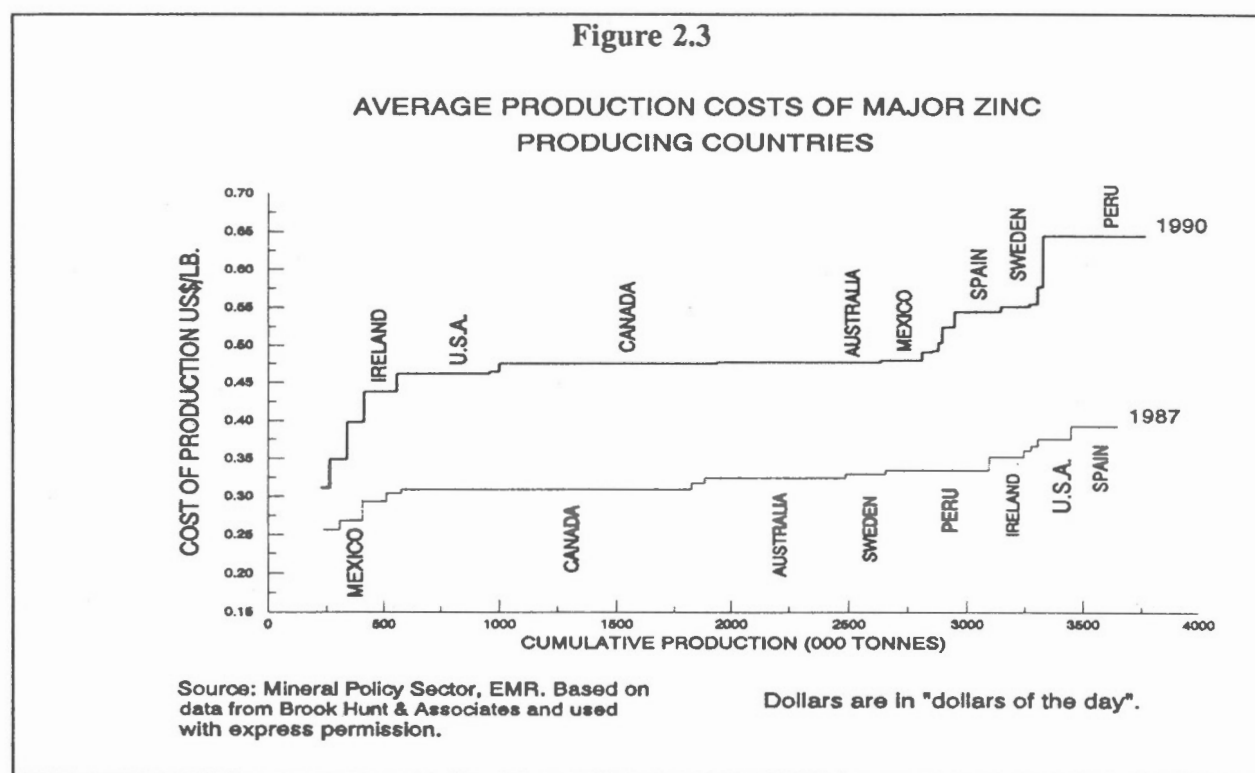
Figure 2.6 follows the same basic style as figures 2.3-2.5, but instead of showing average cost of production on a country basis, it presents the average unit cost of production for Canadian primary gold mines.

2.3.1 Zinc

Canada is the world's largest producer of zinc concentrate, with about 22 percent of the Western World supply in 1990. Although the cost of zinc production increased in Canada, as it did in all producing countries from 1987 to 1990, Canada has remained toward the lower end of the cost curve, maintaining a strong competitive cost position (Figure 2.3).

Increased costs in Canada have been caused largely by increased treatment charges, falling zinc grades, falling coproduct and by-product lead production and higher unit mining and milling costs. The significant proportion of older, more established mines and mills in Canada, that use more labour intensive activities or outmoded techniques, significantly contributes to higher average operating costs. Over the next decade, as older mines are exhausted and newer and more modern mines take their place, production costs may fall.

By comparison, Peru has become a very high cost producer due to the unrest in that country, and an overvalued currency. The United States gained competitive position during the period, due mainly to the startup of the unusually high grade Red Dog mine in 1990 which resulted in lower average operating costs.



2.3.2 Copper

Canada is the fourth largest producer of copper in the world after Chile, the United States and Russia. Canadian copper mine production is expected to fall in the medium

term as new capacity will be unable to match expected mine closures or the decline of capacity at existing operations.

The United States has become the lowest cost major producer as a result of major investments to increase efficiency (Bingham Canyon), the closure of uneconomic operations and the significant growth of low cost solvent extraction/electrowinning production capacity. Chile remains the second lowest cost major producer. While costs have increased in Chile in recent years, the addition of significant new low cost capacity in the next few years, including an expansion of the large Escondida mine, is expected to reverse this trend.

Canada is currently a relatively high cost copper producer, having moved from the middle to the right of the cost curve between 1987 and 1990 (**Figure 2.4**). This increase is the result of an escalation of wage rates and other operating costs. Because a large proportion of Canada's copper output is produced at mines which are nearing the end of their lives, operating costs are tending to increase. Canada's operating cost position can be expected to slowly improve as older mines cease production and large new low cost deposits such as Louvicourt in Quebec and, possibly, Windy Craggy in British Columbia come on stream.

2.3.3 Nickel

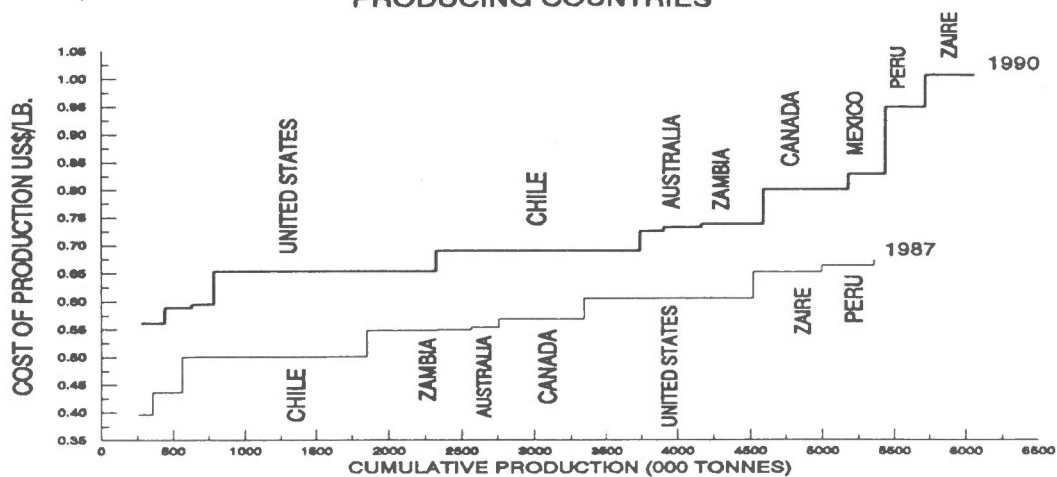
Canada is the world's second largest producer of nickel, after Russia, and accounts for about 20 percent of the world supply. Production costs in Canada rose in the 1980s, although the major increases occurred in the latter part of the decade. Canada changed from being the lowest cost nickel producer in 1987 to one of the higher cost producers in 1990 (**Figure 2.5**).

The escalation of Canadian costs was partially caused by a significant decrease in the grade of the ore mined. The record high nickel prices in the late 1980s encouraged Canadian producers to increase their output; however, the exhaustion of certain high grade orebodies, such as the Thompson Open Pit North, resulted in lower grade ore being mined. As well, labour rates increased dramatically in the late 1980s.

At present, Canadian companies are working actively to reduce unit costs. Higher grade deposits are scheduled to come on stream over the next few years and this will be a factor in increasing the cost competitiveness of Canadian producers.

Figure 2.4

AVERAGE PRODUCTION COSTS OF MAJOR COPPER
PRODUCING COUNTRIES

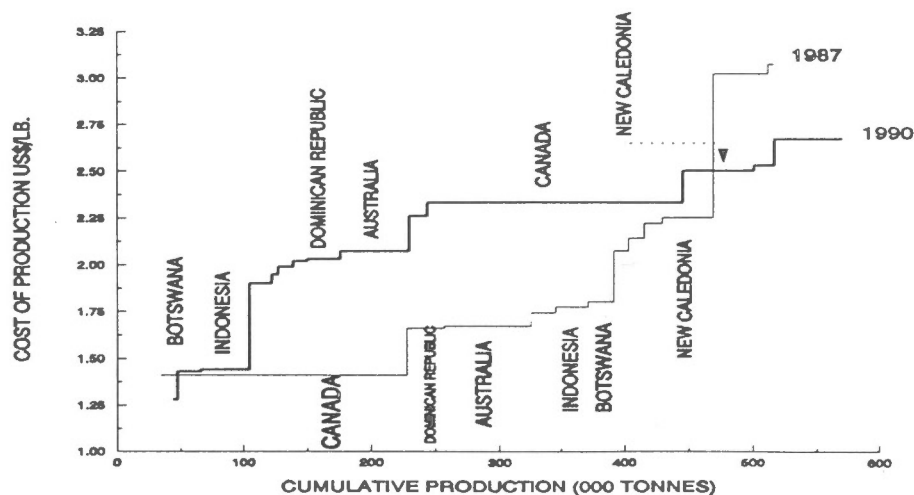


Source: Mineral Policy Sector, EMR. Based on data from Brook Hunt & Associates and used with express permission.

Dollars are in "dollars of the day".

Figure 2.5

AVERAGE PRODUCTION COSTS OF MAJOR NICKEL
PRODUCING COUNTRIES



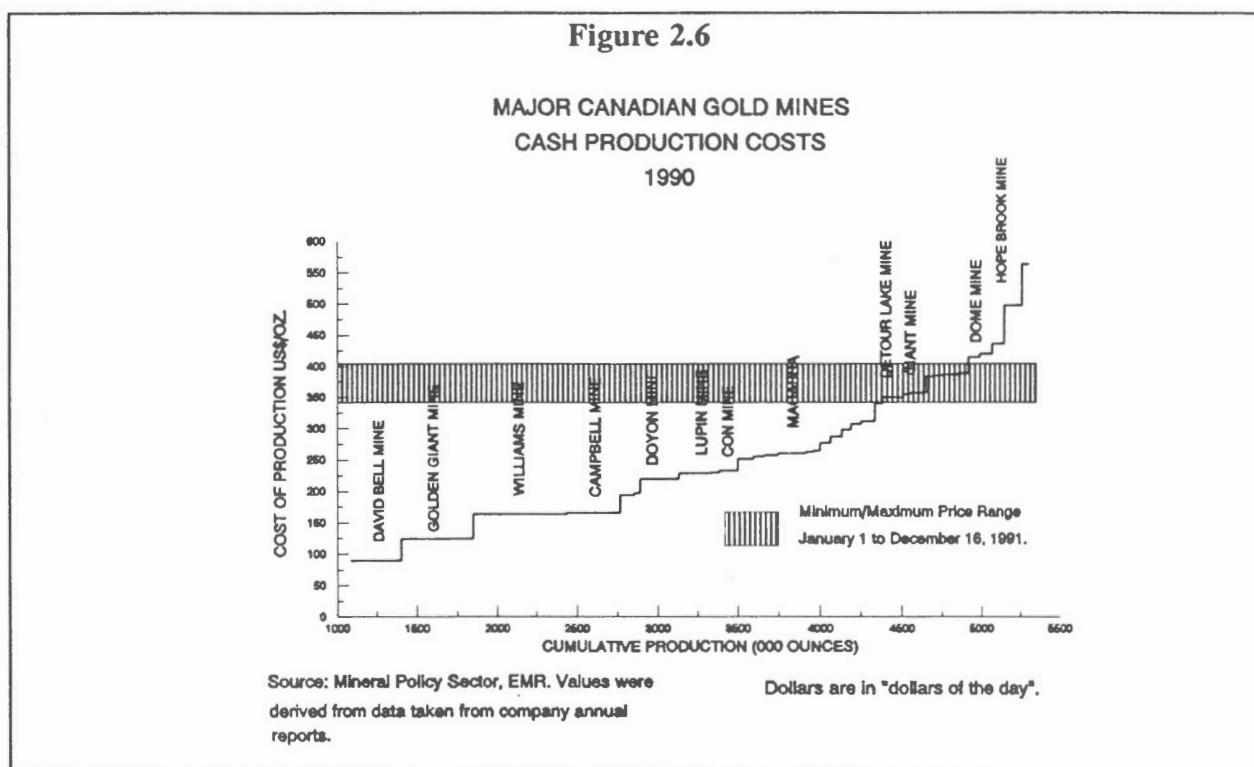
Source: Based on data from NICKDATA, INC. and used with express permission.

Dollars are in "dollars of the day".

2.3.4 Gold

The cash cost per ounce of the bulk of Canadian gold production appears to be low relative to price. **Figure 2.6** shows a cost league for Canadian gold mines for 1990, based on direct cash cost of production as reported in company annual reports. Canadian mines producing more than 30 000 ounces and accounting for about 80 percent of total Canadian production, in 1990, are shown.

The average direct cash cost of production for most producers is below recent gold prices. However, some mines at the top end of the cost curve are in a vulnerable position at current prices, and indeed some have already closed or have been put on suspension, due to technical or economic factors which have been aggravated by the low gold price.



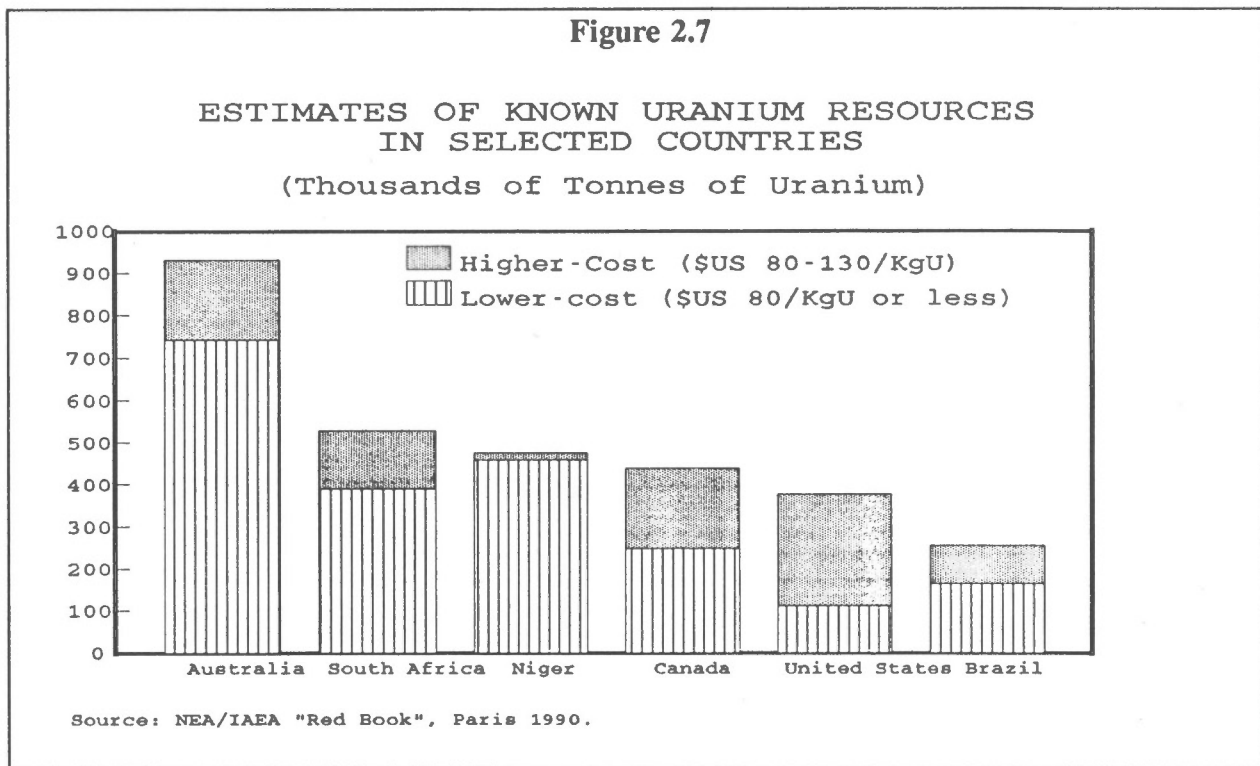
2.3.5 Uranium

2.3.5.1 Canadian Situation

In 1991, Canada ranked first in the world in both the production and export of uranium. However, the industry's output remained below capacity as producers continued to avoid the spot market and geared output to their existing contract commitments. In that year, the spot price averaged around US\$8.70 per pound U_3O_8 , while the average delivery

price under export contracts was approximately US\$21 per pound. Significantly higher uranium contract prices would be required to bring production up to full capacity at Canadian operations. With the phasing out of the Elliot Lake mines from 1990 through 1996, output will be increasingly dominated by the more competitive Saskatchewan mines.

As indicated in **Figure 2.7**, Canada ranks fourth in the level of lower-cost uranium resources. However, operating costs are only one determinant of a country's production. Other factors include the nature of the market and political considerations.



2.3.5.2 The Uranium Market

Decreased prices have brought about a major restructuring of the industry in recent years. Uranium mines now fall into three major categories: mines that are economically viable because they possess extremely high grade ore (Saskatchewan and Australia) or can utilize *in situ* leaching technology (United States), mines that are maintained for security of supply reasons (France), and mines that exist due to high coproduct/by-product credits (copper in Australia, gold in South Africa and phosphates in the United States).

The international market for uranium is not as price sensitive in the short-run as most other commodity markets. This stems from two factors: first, uranium accounts for a small portion of the cost of nuclear-generated electricity compared to the capital outlay associated with a nuclear reactor; second, security of supply has been deemed important, with the result that multi-year contracts tend to be the norm. For example, in 1991 less than two percent of the uranium produced in Canada was sold on the spot market. The pricing terms available in the market are inadequate to support current operations and even the low-cost Saskatchewan producers are adversely affected.

2.3.5.3 Political Considerations

Political factors also play an unusually prominent role in the international uranium market. While Australia possesses 30 per cent of the world's known uranium resources, much of it low-cost, it accounts for only 10 per cent of the world's uranium output; production has been limited to existing mines by federal government policy. In contrast, the French government maintains several relatively high-cost mines in production domestically and in former colonies to guarantee a constant supply of uranium. Approximately 75 per cent of France's electricity comes from nuclear power. As a result, economic viability does not necessarily dictate a mine's development or closure.

2.3.6. Iron Ore

2.3.6.1 Canadian Situation

Canada's iron ore industry is well established and is an important source of wealth for the country. In 1991, four iron ore companies were in operation in Canada. Three of these, Quebec Cartier Mining Company, Iron Ore Company of Canada and Wabush Mines are located in the Labrador Trough area in Northern Quebec and Labrador, while the fourth, the Algoma Ore Division, is located in Ontario. Their mines supply a variety of products to the steel industry namely, untreated ore, ore concentrates (fine material or "fines"), pellets and sinter.

The three export-oriented Labrador Trough companies have excellent infrastructure with access to ocean ports via Sept-Iles. These mines have been in operation for many years and their initial capital costs have been depreciated. Recently, capital expenditures have focused on improving product quality and increasing productivity.

2.3.6.2 International Markets and Competitiveness

Canada is the world's seventh largest producer and fourth largest exporter of iron ore. It is also the second largest exporter of pellets behind Brazil. Approximately 80 percent of Canada's output is exported. Canada's major competitors on the world market are Brazil, Australia and Sweden. Western Europe, the United States, Japan and South Korea are Canada's major export markets. While Western Europe, collectively, takes

over 60 percent of our exports, the United States is Canada's largest single customer, accounting for approximately a quarter of our exports. As a result, the Canadian producers are very sensitive to competition from American mines in the North American market and to competition from countries that ship to the European market.

In the North American market, trade is mostly in iron ore pellets. Canadian operating costs to produce pellets, on average, are slightly higher than those in the United States. Operating costs in North America were generally lower in 1989 than in 1986 (the only years for which cost data are presently available) because of increased productivity and the introduction of cost cutting measures. Canadian and American producers reduced their operating costs during this period by about five percent.

Although there is a market for both pellets and concentrates, sales of concentrates dominate exports to Europe. Competition is intense between Brazil, Australia, and Canada in the ore concentrate market, while Brazil and Sweden are the main competitors in the market for pellets. Canada's ability to compete in the European market, despite higher operating costs, stems from two factors: 1) Canadian producers, given their closer proximity to the European market, have lower freight costs than their Brazilian and Australian competitors; 2) the low phosphorus and alkali content of Canadian ore makes it a required component for blending with higher phosphorus ores from certain lower cost producers. While Sweden is a low cost producer in the European market due to lower freight costs, its limited production capacity prevents it from dominating the market.

The Asian-Pacific market, which accounts for roughly 10 percent of Canada's exports, is limited to ore concentrates. Despite higher operating costs in Canada, Japan and South Korea still import Canadian ore because of its low phosphorus and alkali content and to maintain a diversity of suppliers. To offset the price difference between Canadian producers and their competitors, Japan and South Korea absorb half the difference in the freight costs between the Canada-Japan and the Australia-Japan routes.

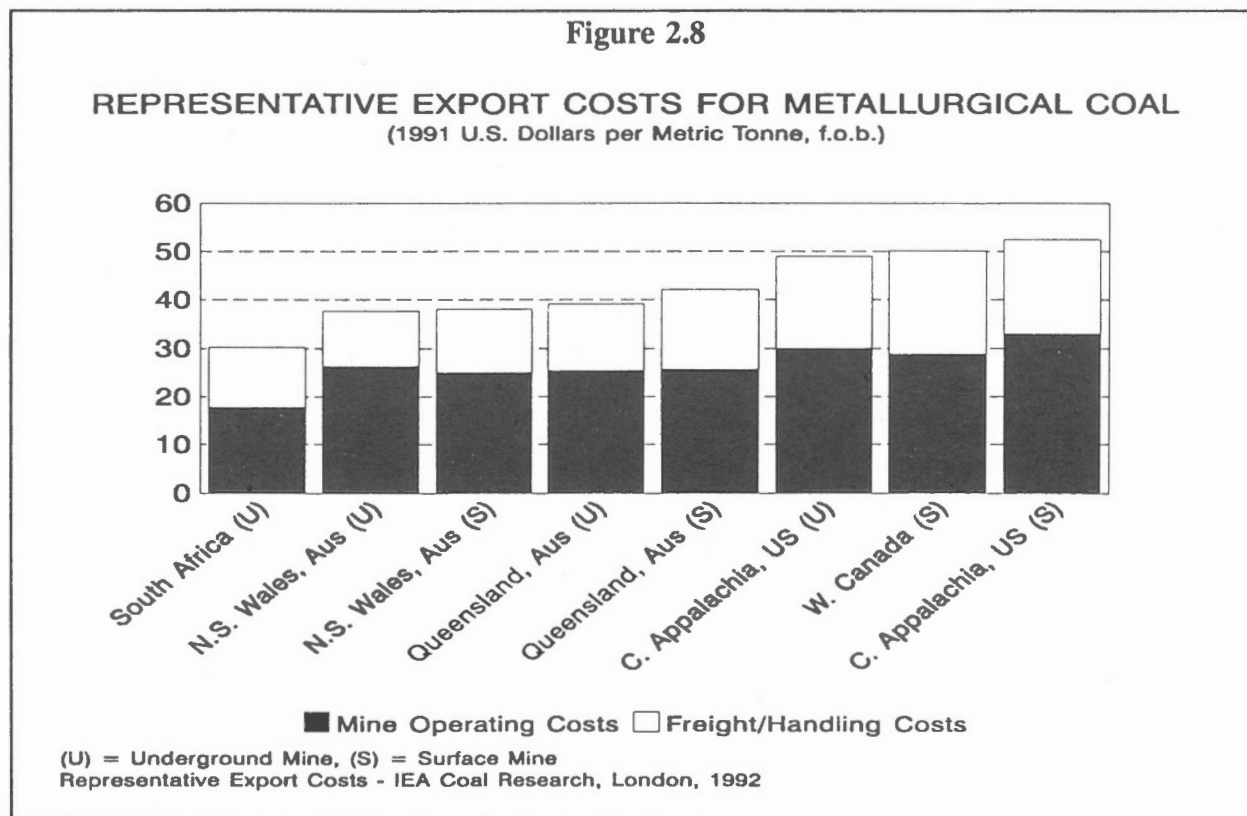
2.4 Cost Competitiveness of Principal Nonmetallic Minerals

2.4.1 Coal

Canada is a leading coal exporter. At current production levels, Canada has proven recoverable reserves for approximately 100 years. Approximately 95 percent of Canada's coal exports originate in western Canada. According to 1991 International Energy Agency (IEA) representative operating cost data, western Canadian metallurgical coal producers are high cost operators (**Figure 2.8**). Only the coal mines of Central Appalachia in the United States have higher operating costs. Canadian thermal coal exporters are internationally more competitive, being able to compete with U.S. and Colombian mines and some Australian operations (**Figure 2.9**). Canadian thermal producers, however, are unable to compete with South African or Indonesian

counterparts. Canada's competitive position is hindered by difficult geological and climatic conditions.

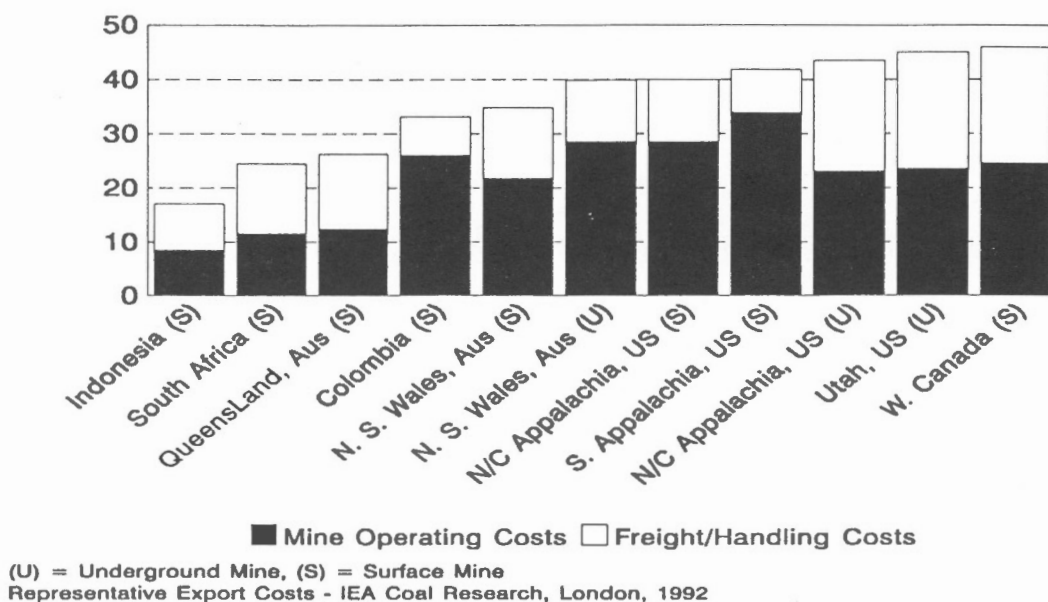
In the international market, western coal producers must cope with high freight charges due to geographical location, being some 1100 km from tidal ports. According to IEA figures, only the thermal coal producers of Utah must cope with higher freight and handling costs. IEA figures indicate that approximately 42 percent of the f.o.b. Vancouver cost of western Canadian coal is freight and handling.



Western Canadian exporters are faced with a combination of high (metallurgical coal) or average (thermal coal) operating costs and high freight and handling costs resulting in a higher than average f.o.b. port cost. Based on IEA data, Canada has the highest thermal coal f.o.b. port cost and the second highest metallurgical coal f.o.b. port cost of major coal exporting countries. In the past, this cost disadvantage was partially offset by three factors: quality of the product; reputation of being a reliable supplier; and, the Japanese steel industry's preference for a diversity of suppliers. However, with falling prices, margins have come under increasing pressure with the result that the Canadian coal industry is currently facing a severe challenge to its survival. For example, in late 1991, a study undertaken for the provincial Ministry of Mines concluded that five out of eight British Columbian mines were in financial difficulty.

Figure 2.9

REPRESENTATIVE EXPORT COSTS FOR THERMAL COAL
(1991 U.S. Dollars per Metric Tonne, f.o.b.)



2.4.2 Potash²

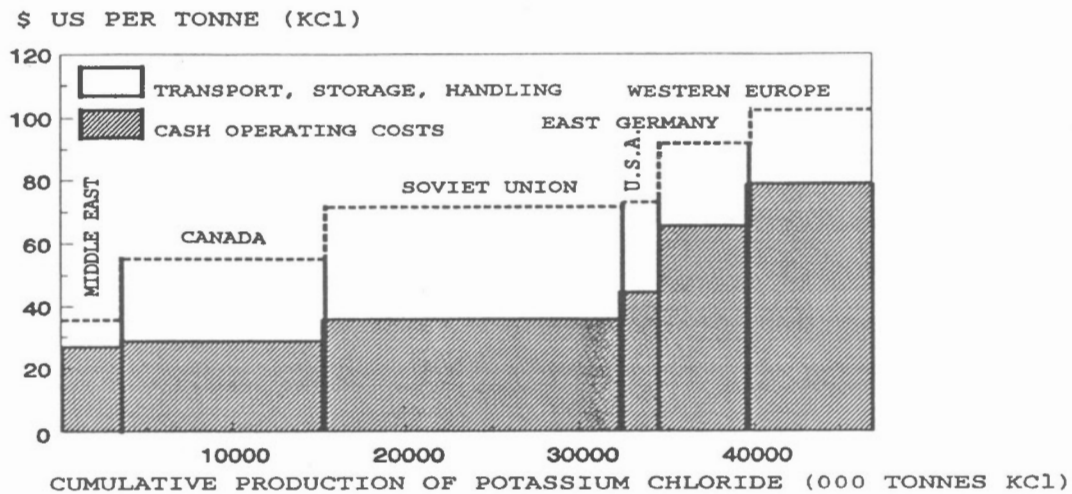
As shown in Figure 2.10, Canada is the world's second lowest operating cost producer of potassium chloride after the Middle East. Next to the former Soviet Union, Canada ranks second in world production and is the world's largest exporter, accounting for approximately 40 percent of total world trade in potash. Canada has become the recognized swing supplier, due to its dominant position within the market. In an effort to maintain price stability, Canadian producers have been running at an average capacity utilization rate of 60 percent over the last few years.

Canada's international competitive position stems from huge high grade deposits located in Saskatchewan (25 to 27 percent K_2O) and New Brunswick (24 to 28 percent K_2O). By contrast, European potash deposits grade between 10 and 20 percent K_2O and those of the former Soviet Union average below 15 percent K_2O . Saskatchewan accounts for approximately 86 percent of Canada's total production with the remaining 14 percent originating in New Brunswick. Canada's potash reserves amount to almost 75 percent of estimated world reserves.

² We have followed the industry's convention of referring to production costs in terms of KCl and potash grades in terms of K_2O .

Figure 2.10

POTASSIUM CHLORIDE PRODUCTION COSTS 1989



The attractive geological characteristics of Saskatchewan deposits more than offset the high freight costs incurred by producers. Only the United States and the former Soviet Union have higher transportation, storage and handling costs, while the Middle East has the lowest. In relative terms, approximately half of the total f.o.b. port cost (Vancouver) of Saskatchewan potash is transportation, storage and handling, a proportion matched only in the former Soviet Union. Transportation, storage and handling costs for other countries fall in a range between 23 percent (Western Europe) and 39 percent (United States).

In an effort to limit marketing, distribution and shipping costs, all Saskatchewan operators participate in Canpotex, an export sales agency owned and operated by the producers. Canpotex is by far the largest supplier to the offshore potash markets in Asia, Latin America, Oceania, and Africa, supplying about 40 percent of the total demand in these areas.

In contrast to Saskatchewan, New Brunswick has more geologically complex deposits, higher operating costs and lower transportation costs. However, the total f.o.b. port costs of potash from the two provinces are comparable.

2.5 Other Factors Affecting Competitiveness

2.5.1 Macroeconomic Conditions

For some years, the mining industry has criticized the federal government's tight monetary policy which has caused a substantial differential in short term interest rates between Canada and the United States, and placed upward pressure on the Canadian dollar. It is claimed that the strengthening of the dollar between 1987 and 1991 wiped out much of the hard-won cost and productivity gains made during the restructuring of Canada's minerals industry in the early 1980s. Further, the high level of short term interest rates in the 1989-90 period was seen as especially onerous. The effect of a combination of high exchange and interest rates was further exacerbated in 1990 by lower commodity prices.

The interest rate differential was pronounced over the latter part of the 1980s but began to widen significantly in the first quarter of 1989 and was at its greatest, some 5.5 percentage points, in mid-1990. Consistent with the increasing differential in interest rates, the Canadian dollar rose dramatically relative to the U.S. dollar during 1989 and 1990, from a 1988 average of 81 cents to approximately 89 cents in November 1991.

The appreciation of the Canadian dollar had significant effects on Canada's export performance in general. A representative example is that of domestic copper and zinc production. In copper production, operating costs (measured in U.S. dollars) rose from 57 to 80 cents per pound between 1987 and 1990; the appreciation of the Canadian dollar was responsible for about 10.8 cents of that increase. For zinc producers, operating costs rose by 5.5 cents as a result of exchange rate movements between 1987 and 1989, while total operating costs increased from 30.9 cents to 51.9 cents per pound in the same period.

2.5.2 Human Resources

The Canadian mining industry is becoming increasingly concerned about the quality of its workforce. With its high level of technological sophistication, the industry needs to attract and keep qualified people at both the professional and technical levels.

These concerns are reinforced by recent findings of Statistics Canada and The Mining Association of Canada (MAC). In a 1989 survey, Statistics Canada determined that literacy was lowest in primary industries (which include mining) with only half the workers being able to meet everyday reading demands. MAC, in its recent consultations with the minerals and metals sector on the federal government's Prosperity Initiative, identified the need for improvement in the quality of education in the areas of mathematics and science.

While some large companies have well defined training programs, not all companies offer apprenticeship programs and those that do appear to cut back in response to economic cycles. Some observers question the wisdom of training an aging workforce.

Also, because of the remote locations of many mines, their ultimate closures, and the conditions under which employees at many small mining communities live, it is almost inevitable that trained employees will continue to be lost to other industries, especially those in more favourable geographical locations.

Another problem faced by the industry is obtaining an adequate supply of new workers with education in mining engineering and science. This supply is quite volatile as career opportunities in the minerals industry are strongly affected by its "boom-and-bust" nature.

These and other challenges are being studied by federal and provincial governments, and the industry. The work is being guided by a steering committee that includes MAC, the Canadian Institute of Mining, Metallurgy and Petroleum (CIM), and the United Steelworkers of America (USWA), along with educational institutions and both levels of government, including the Department of Energy, Mines and Resources. The study should be completed by the end of 1992.

2.6 Conclusions

In the production of its principal metals - copper, zinc, nickel and gold - existing Canadian companies remain relatively competitive, both from a production cost point of view, as well as from a share of world production point of view. The development and adoption of new technology, productivity improvements and general cost cutting measures, as well as the discovery of new high-grade deposits, have in the past kept the Canadian industry competitive. On average, Canada's current mining costs remain competitive. But, on an individual basis, copper and nickel are moving up the cost curve relative to certain competitors. The mining industry has shown a capacity to adapt to changing circumstances; however high cost producers are always vulnerable, especially during recessions. Eighteen base-metal mines and 39 gold mines closed during the period 1989-91, and unless there are changes in the economic climate, there will likely be more casualties before this recession ends.

On the nonmetallic minerals side, Canada is a leading exporter of potash and coal. With potash, Canada is the world's second-lowest cost producer, due to large high grade deposits in Saskatchewan and New Brunswick. With thermal coal, western Canadian producers have mine-site operating costs comparable to those of the United States and Australia, but higher than those of South Africa and Indonesia. Western Canadian metallurgical coal producers, however, are high cost operators with only the mines of Central Appalachia being less competitive. Both thermal and metallurgical coal miners

must contend with high freight charges, due to geographical location far from ocean ports. On an f.o.b. port basis, western Canadian coal exporters have higher than average costs.

The strengthening of the dollar since 1986 has been costly for Canadian mineral exporters and put them at a competitive disadvantage relative to their foreign competitors. However, short term interest rates have been falling and in June 1992 the prime rate was at its lowest rate since 1973. The slump in interest rates has been accompanied by a decrease in the value of the dollar of more than 5 cents. As a result of these movements, the industry is now benefiting from higher revenues, based on U.S. dollar denominated commodities, and lower interest expenses.

Improved competitiveness for Canada's minerals industry over the longer term will require a more adaptable, well educated and highly skilled labour force. As discussed in Chapter 1, Canadian mining industry wages are high relative to other sectors of the economy. Improved quality of labour inputs will help the mining industry to live with its relatively high wage rates.

APPENDIX

LIST OF BACKGROUND STUDIES ON THE CANADIAN MINERAL INVESTMENT CLIMATE

(Please see the Introduction for information on how to obtain copies of these reports.)

- 1 The Importance of Mining to Canada
- 2 Canadian Mineral Industry Competitive Position:
 Trends and Short Term Outlook
- 3 Trends in Prices and Production: Non-Ferrous Metals
- 4 Canadian and Worldwide Mineral Activities of Domestic and Foreign
 Multinational Mining Companies: Recent Trends
- 5 Canadian Mining Presence in Latin America and the Caribbean
- 6 Worldwide Mineral Properties of the Canadian Mining Industry
- 7 Mineral Exploration Trends: Canada and the World
- 8 Financing Mineral Investment in the Developing World:
 Debt Equity Swaps
- 9 The Commonwealth of Independent States (CIS):
 An Emerging Competitor for Mineral Capital
- 10 What the Developing World is Doing to Attract Mineral Investment:
 Recent Changes Discussed at the September 1991 UN/CIM Seminar on
 Mining Taxation
- 11 MPS International Communique Items 1988-92
- 12 Changing Global Competitiveness for Mineral Capital:
 Regional and Country-Specific Analyses
- 13 Canada's Mineral Taxation System Compared

December 1992

STATISTICAL TABLES

TABLE 1. CANADA, PRODUCTION OF LEADING MINERALS

		1991			1992			Percentage Changes		
		June	July	Total 7 Months	June	July	Total 7 Months	July 1992 July 1991	July 1992 June 1992	7 Months 1992 1991
(000 tonnes except where noted)										
METALS										
Copper		60.3 ^r	61.3 ^r	456.9	65.5	55.6	446.0	-9.3	-15.2	-2.4
Gold	kg	15 305.6 ^r	15 653.1 ^r	102 066.9	13 895.5 ^r	13 854.7 ^r	92 246.3 ^r	-11.5	-0.3	-9.6
Iron ore		3 345.4 ^r	3 950.2 ^r	17 685.9	3 126.5	3 192.7	16 224.4	-19.2	2.1	-8.3
Lead		22.8	29.6	113.6	23.6	25.8	161.0	-12.8	9.7	41.7
Molybdenum	t	1 064.0	1 275.7	7 697.5	711.3	634.8	4 922.3	-50.2	-10.8	-36.1
Nickel		17.1	6.4	114.3	19.0	3.0	114.9	-53.1	-84.2	0.5
Silver	t	92.3	108.7	748.4	97.6	92.7	675.4	-14.8	-5.0	-9.8
Uranium ¹	t	689.8 ^r	161.0 ^r	4 175.3 ^r	1 049.0 ^r	403.9 ^r	5 013.1 ^r	150.8	-61.5	20.1
Zinc		83.8	95.0	518.2	84.3	97.3	636.0	2.4	15.4	22.7
NONMETALS										
Asbestos		57.4 ^r	55.5 ^r	367.8	51.4	44.4	345.0	-20.0	-13.7	-6.2
Clay products	\$000	13 968.6	15 810.3 ^r	69 679.3	14 213.1	14 035.0	66 228.5	-11.2	-1.3	-5.0
Gypsum		707.6	663.0	4 145.7	683.6 ^r	762.1 ^r	4 451.6 ^r	14.9	11.5	7.4
Potash K ₂ O		478.1	378.3	4 204.9	519.8	512.3	4 322.0	35.4	-1.4	2.8
Cement		1 115.7 ^r	1 024.2	5 099.6	1 068.8 ^r	916.9 ^r	4 586.5 ^r	-10.5	-14.2	-10.1
Lime		194.7	187.7 ^r	1 349.4	201.3	187.7	1 369.4	-	-6.8	1.5
Salt		1 209.3 ^r	1 016.5 ^r	6 242.5	940.9	928.7	5 660.4	-8.6	-1.3	-9.3
FUELS										
Coal		5 720.4 ^r	5 179.6	40 776.9	4 919.9	4 903.6	39 869.8	-5.3	-0.3	-2.2
Natural gas	million m ³	9 850.0 ^r	9 521.0 ^r	75 088.0	10 569.0 ^r	10 988.0	80 778.0	15.4	4.0	7.6
Crude oil and equivalent	000 m ³	7 849.0 ^r	8 221.0 ^r	55 845.0	8 035.0 ^r	8 632.0	57 767.0	5.0	7.4	3.4

Sources: Energy, Mines and Resources Canada; Statistics Canada.

- Nil; ^r Revised.¹ Tonnes uranium (1 tonne U = 1.2999 short tons U₃O₈).

Note: Percentage changes are calculated on the basis of actual production figures as opposed to the rounded figures as shown.

TABLE 1A. CANADA, PRODUCTION OF LEADING MINERALS

		1991			1992			Percentage Changes		
		August	September	Total 9 Months	August	September	Total 9 Months	September 1992 September 1991	September 1992 August 1992	9 Months 1992 1991
(000 tonnes except where noted)										
METALS										
Copper		61.9 ^r	62.0 ^r	580.8	65.5 ^r	63.5	575.1	2.5	-3.0	-1.0
Gold	kg	15 853.7 ^r	15 157.2 ^r	133 077.8	14 080.0 ^r	13 857.2	120 183.5	-8.6	-1.6	-9.7
Iron ore		3 065.8 ^r	3 135.6	23 887.3	3 765.1	2 971.8	22 961.2	-5.2	-21.1	-3.9
Lead		25.7 ^r	26.4	165.7	33.2	33.0	227.2	25.0	-0.5	37.1
Molybdenum	t	816.1	934.9 ^r	9 448.4	709.9	831.7	6 463.9	-11.0	17.2	-31.6
Nickel		11.9	16.0	142.2	12.9	18.7	146.4	17.1	45.1	3.0
Silver	t	98.1	119.5	966.0	93.2 ^r	91.8	860.4	-23.1	-1.5	-10.9
Uranium ¹	t	588.1 ^r	946.8 ^r	5 710.2 ^r	974.5	1 110.4	7 098.0	17.3	14.0	24.3
Zinc		147.3 ^r	125.1 ^r	790.6	140.8	121.7	898.5	-2.7	-13.6	13.6
NONMETALS										
Asbestos		59.7 ^r	61.7 ^r	489.1	46.4	46.7	438.1	-24.3	0.8	-10.4
Clay products	\$000	15 198.7	14 975.3 ^r	99 853.3	11 681.2	12 884.2	90 793.9	-14.0	10.3	-9.1
Gypsum		759.0	793.5	5 698.2	697.1 ^r	684.3	5 833.0	-13.8	-1.8	2.4
Potash K ₂ O		608.4	582.6	5 395.9	1 026.6	586.5	5 935.1	0.7	-42.9	10.0
Cement		1 067.0	1 062.2	7 228.8	941.4	1 000.7	6 528.6	-5.8	6.3	-9.7
Lime		197.6	195.0	1 742.0	203.3	208.5	1 781.2	6.9	2.5	2.2
Salt		939.8 ^r	1 086.5 ^r	8 268.8	992.1	1 053.6	7 706.1	-3.0	6.2	-6.8
FUELS										
Coal		6 047.0 ^r	5 642.4	52 466.3	..	..	..	..	..	..
Natural gas	million m ³	9 421.0 ^r	9 609.0 ^r	94 118.0	..	..	..	..	..	..
Crude oil and equivalent	000 m ³	8 279.0 ^r	7 866.0 ^r	71 990.0	..	..	..	..	..	..

Sources: Energy, Mines and Resources Canada; Statistics Canada.

.. Not available; ^r Revised.¹ Tonnes uranium (1 tonne U = 1.2999 short tons U₃O₈).

Note: Percentage changes are calculated on the basis of actual production figures as opposed to the rounded figures as shown.

TABLE 2. METAL PRICES, 1992

	August	September	October
COPPER			
Electrolytic, U.S. producer f.o.b. refinery, cents (US)	115.740	111.095	103.754
Electrolytic, COMEX, 1st pos. plus 5¢, cents (US)	112.295	107.390	100.086
Electrolytic, LME Grade A settlement, cents (US)	114.379	109.503	102.018
LEAD			
U.S. producer, cents (US)	37.000	37.000	35.500
Montreal, cents (C)	44.000	44.000	44.000
LME cash, cents (US)	29.661	28.147	24.354
SILVER			
Handy & Harmon, cents per troy oz (US)	379.667	376.333	373.659
Handy & Harmon, cents per troy oz (C)	452.162	422.359	465.205
ZINC			
LME SHG cash, cents (US)	61.707	62.003	52.780
North American SHG, cents (US)	64.951	65.372	55.950
TIN			
New York, dealers, cents (US)	313.556	306.250	278.444
Metals Week, composite, cents (US)	441.884	434.200	398.153
GOLD			
London, p.m., US\$ per troy oz	343.058	345.430	344.380
NICKEL			
New York, dealers, cathode, US\$	3.288	3.115	2.853
LME cash, US\$	3.297	3.138	2.860
ANTIMONY			
New York, dealers, cents (US)	78.000	78.000	78.000
PLATINUM			
London PM fix, US\$ per troy oz	359.693	362.143	358.068
CADMIUM			
New York, dealers, US\$	0.800	0.800	0.776
ALUMINUM			
LME cash, cents (C)	70.499	64.632	66.286
LME cash, cents (US)	59.196	57.589	53.242
COBALT			
Shot/cathode/250 kg, US\$	25.000	25.000	25.000
U.S. spot cathode, US\$	18.900	17.500	14.625
TUNGSTEN			
U.S. spot ore, US\$/MTU	52.911	52.911	51.257
MOLYBDENUM			
Metals Week dealer oxide, US\$	2.344	2.272	2.131
URANIUM			
Nuexco, US\$, U ₃ O ₈	7.750	7.750	8.225

Sources: Metals Week; The Northern Miner.

Average U.S. Exchange Rate for August = 1.1909, September = 1.2223, October = 1.2450.

Notes: Prices are per pound unless otherwise stated.

TABLE 3. CANADA, REAL GROSS DOMESTIC PRODUCT AT FACTOR COST BY INDUSTRY, IN 1986 PRICES, QUARTERLY (SEASONALLY ADJUSTED AT ANNUAL RATES)

Industry Sector	1991 2nd Quarter	1991 3rd Quarter	1991 4th Quarter	1992 1st Quarter	1992 2nd Quarter	% Change 2nd Quarter 1992 1st Quarter 1992	% Change 2nd Quarter 1992 2nd Quarter 1991
	(\$ million)						
TOTAL ECONOMY	498 514.8	499 246.8	499 281.0	500 136.7	501 344.0	0.2	0.6
Business Sector							
Agriculture	11 276.7	11 279.2	11 287.9	11 197.6	11 115.5	-0.7	-1.4
Fishing and trapping	980.5	982.0	935.9	917.2	936.5	2.1	-4.5
Forestry	2 451.4	2 428.5	2 498.0	2 502.5	2 588.0	3.4	5.6
Mines, quarries and oil wells	19 923.9	19 943.9	20 005.2	20 062.8	20 134.7	0.4	1.1
Mining industries	6 267.4	6 336.9	6 290.9	6 204.1	5 894.0	-5.0	-6.0
Gold mines	1 693.0	1 619.9	1 548.9	1 511.1	1 444.3	-4.4	-14.7
Other metal mines	2 213.0	2 399.0	2 335.3	2 305.7	2 341.2	1.5	5.8
Iron mines	511.6	486.2	502.2	498.6	506.6	1.6	-1.0
Asbestos mines	94.4	101.2	104.4	90.0	84.4	-6.2	-10.6
Nonmetal mines - Other	544.9	527.5	546.0	554.8	508.7	-8.3	-6.6
Salt mines	167.8	153.0	157.0	149.8	148.2	-1.1	-11.7
Coal mines	1 042.6	1 050.1	1 097.2	1 094.1	860.5	-21.4	-17.5
Crude petroleum and natural gas	11 753.9	11 744.1	12 013.0	12 254.4	12 583.6	2.7	7.1
Quarry and sand pit industries	634.5	637.4	602.3	567.7	588.1	3.6	-7.3
Services related to mineral extraction	1 268.1	1 225.5	1 099.0	1 036.6	1 069.1	3.1	-15.7
Manufacturing	85 214.0	85 876.1	84 717.1	84 301.8	84 560.3	0.3	-0.8
Construction industry	30 766.4	31 363.7	31 532.3	30 853.9	29 948.3	-2.9	-2.7
Transportation and storage	21 409.4	21 370.8	21 401.3	21 641.2	21 764.0	0.6	1.7
Communications	18 915.2	18 946.0	19 251.1	19 318.0	19 467.6	0.8	2.9
Other utilities	15 715.4	15 974.2	16 012.8	16 058.2	16 050.7	-0.0	2.1
Wholesale trade	27 530.0	28 243.4	28 377.3	28 570.2	28 978.6	1.4	5.3
Retail trade	29 886.2	29 811.3	29 766.9	29 920.3	29 945.9	0.1	0.2
Finance, insurance and real estate	81 064.5	80 822.8	81 793.5	82 518.8	83 082.6	0.7	2.5
Community, business and personal services	61 543.6	60 869.4	59 828.1	59 998.3	60 529.8	0.9	-1.6
Non-Business Sector							
Government service industries	33 902.1	33 402.0	33 911.6	34 144.3	34 030.7	-0.3	0.4
Community and personal services	53 415.1	53 453.3	53 556.6	53 766.0	53 838.6	0.1	0.8
Other non-business industries and services	4 520.4	4 480.2	4 405.4	4 365.6	4 372.2	0.2	-3.3

Source: Statistics Canada.

Note: Numbers may not add to totals due to rounding.

TABLE 4. CANADA, REAL GROSS DOMESTIC PRODUCT AT FACTOR COST BY INDUSTRIES INVOLVED IN MINERAL MANUFACTURING, IN 1986 PRICES, QUARTERLY (SEASONALLY ADJUSTED AT ANNUAL RATES)

Industry	1991 2nd Quarter	1991 3rd Quarter	1991 4th Quarter	1992 1st Quarter	1992 2nd Quarter	% Change 2nd Quarter 1992 1st Quarter 1992	% Change 2nd Quarter 1992 2nd Quarter 1991
(\$ million)							
PRIMARY METAL INDUSTRIES	6 402.4	6 771.3	6 752.3	6 474.9	6 400.6	-1.1	-0.0
Primary steel industries	2 461.9	2 742.2	2 759.8	2 608.7	2 588.8	-0.8	5.2
Steel, pipe and tube industries	520.4	527.1	538.1	406.6	342.6	-15.7	-34.2
Iron foundries	294.4	284.8	282.4	289.2	301.2	4.1	2.3
Smelting and refining	2 309.1	2 368.3	2 339.8	2 324.2	2 310.2	-0.6	0.0
Aluminum rolling, casting and extruding	455.6	462.0	437.1	463.6	470.9	1.6	3.4
Copper rolling, casting and extruding	56.0	61.1	56.3	54.0	58.4	8.1	4.3
Other metal rolling, casting, etc.	305.1	325.6	338.7	328.6	328.6	0.0	7.7
FABRICATED METAL PRODUCTS INDUSTRIES	5 701.6	5 655.4	5 403.1	5 304.0	5 344.2	0.8	-6.3
Power boiler and heat exchanger industry	234.7	216.0	204.8	239.6	237.5	-0.9	1.2
Fabricated structural metal industry	873.0	861.0	825.7	787.7	794.9	0.9	-8.9
Ornamental and architectural metal products industry	655.9	667.9	640.1	604.9	600.1	-0.8	-8.5
Stamped, pressed and coated metals	1 240.2	1 246.3	1 167.9	1 151.3	1 168.9	1.5	-5.7
Wire and wire products industries	453.9	479.4	472.7	462.5	465.7	0.7	2.6
Hardware, tool and cutlery industries	774.3	762.0	743.5	747.0	756.6	1.3	-2.3
Heating equipment industry	167.2	174.1	173.3	170.4	182.8	7.3	9.3
Machine shops industry	685.7	640.7	580.7	572.7	563.9	-1.5	-17.8
Other metal fabricating industries	616.8	608.0	594.3	567.9	573.9	1.1	-7.0
NONMETALLIC MINERAL PRODUCTS INDUSTRIES	2 637.5	2 642.3	2 552.9	2 392.4	2 477.6	3.6	-6.1
Clay products industry	121.9	136.0	127.9	113.8	119.9	5.4	-1.6
Cement industry	374.0	365.0	349.1	316.1	331.8	5.0	-11.3
Concrete products industries	367.7	349.8	327.2	310.2	330.6	6.6	-10.1
Ready-mix concrete industry	409.3	413.3	394.7	358.6	377.5	5.3	-7.8
Glass and glass products industries	550.4	561.5	540.6	526.8	543.6	3.2	-1.2
Miscellaneous nonmetallic mineral products	814.2	816.6	813.4	766.9	774.1	0.9	-4.9

Source: Statistics Canada.

Note: Numbers may not add to totals due to rounding.

TABLE 5. CANADA, NUMBER OF WAGE EARNERS EMPLOYED IN THE NONFUEL MINERALS INDUSTRY (SURFACE, UNDERGROUND AND MILL), 1984-90

	1984	1985	1986	1987	1988	1989	1990
METALS							
Surface	9 724	10 093	9 674	9 557	9 637	9 358	8 608
Underground	16 668	14 798	13 982	13 747	14 968	16 116	14 454
Mill	12 789	11 727	11 285	11 025	11 535	11 977	10 833
Total	39 181	36 618	34 941	34 329	36 140	37 451	33 895
INDUSTRIALS							
Surface	4 948	4 921	5 396	5 771	5 908	5 744	5 387
Underground	2 487	2 337	2 112	2 234	2 173	2 251	2 309
Mill	5 573	5 277	4 868	4 984	4 888	4 981	5 006
Total	13 008	12 535	12 376	12 989	12 969	12 976	12 702
TOTAL MINERALS INDUSTRY							
Surface	14 672	15 014	15 070	15 328	15 545	15 102	13 995
Underground	19 155	17 135	16 094	15 981	17 141	18 367	16 763
Mill	18 362	17 004	16 153	16 009	16 423	16 958	15 839
Total	52 189	49 153	47 317	47 318	49 109	50 427	46 597

Sources: Energy, Mines and Resources Canada; Statistics Canada.
 Note: Totals may not add due to rounding.

TABLE 6. CANADA, MINE AND MILL WORKERS, BY SEX, EMPLOYED IN THE NONFUEL MINING INDUSTRY, 1990

1920-1930, 1930

	Mine Workers				Mill Workers		Total	
	Underground		Surface					
	Male	Female	Male	Female	Male	Female	Male	Female
METALLIC MINERALS								
Nickel-copper-zinc ¹	6 401	20	3 780	111	3 266	127	13 447	258
Gold	5 401	43	1 602	59	2 414	72	9 417	174
Iron ore	34	1	1 145	49	3 022	133	4 201	183
Uranium	1 515	7	697	11	780	56	2 992	74
Silver-lead-zinc	939	3	685	30	629	18	2 253	51
Miscellaneous metal mines ²	90	—	431	8	300	16	821	24
Total	14 380	74	8 340	268	10 411	422	33 131	764
INDUSTRIAL MINERALS								
Potash	1 373	10	65	3	1 333	26	2 771	39
Stone	—	—	1 922	28	317	3	2 239	31
Asbestos	221	7	538	—	1 241	73	2 000	80
Sand and gravel	—	—	1 358	40	298	—	1 656	40
Miscellaneous nonmetals ³	517	—	363	6	888	30	1 768	36
Peat	—	—	652	16	694	24	1 346	40
Gypsum	180	1	395	1	78	1	653	3
Total	2 291	18	5 293	94	4 849	157	12 433	269
Mining total ⁴	16 671	92	13 633	362	15 260	579	45 564	1 033

Sources: Energy, Mines and Resources Canada; Statistics Canada.

¹ Includes copper-zinc and nickel-copper mines. ² Includes molybdenum mines. ³ Includes salt mines. ⁴ Coal no longer included. Beginning in 1986, the count of employees for coal, broken down by surface, underground and mill workers by sex, is no longer available.

— Nil.

TABLE 7. CANADA, LABOUR COSTS FOR METAL MINES IN RELATION TO TONNES MINED, 1988-90

	Number of Wage Earners	Total Wages	Average Annual Wage	Tonnage of Ore Mined	Average Annual Tonnes Mined per Wage Earner	Wage Cost per Tonne Mined
		(\$000)	(\$)	(kilotonnes)		(\$)
1988						
Uranium	3 476	159 469	45 877	6 337	1 823	25.16
Gold	7 021	303 270	43 195	18 746	2 670	16.18
Silver-lead-zinc	1 954	83 297	42 629	12 758	6 529	6.53
Nickel-copper-zinc ¹	10 395	444 952	42 804	127 119	12 229	3.50
Miscellaneous metals ²	530	17 595	33 198	47 747	27 824	1.19
Iron ore	1 229	56 953	46 341	102 392	83 313	0.56
Total	24 605	1 065 535	43 306	282 098	11 465	3.78
1989						
Uranium	3 128	149 763	47 878	6 405	2 048	23.38
Gold	7 446	356 905	47 933	20 335	2 731	17.55
Silver-lead-zinc	2 152	93 697	43 539	12 784	5 941	7.33
Nickel-copper-zinc ¹	10 934	491 909	44 989	126 169	11 539	3.90
Miscellaneous metals ²	597	25 599	42 879	18 135	30 377	1.41
Iron ore	1 217	62 907	51 690	99 962	82 138	0.63
Total	25 474	1 180 780	46 352	283 790	11 140	4.16
1990						
Uranium	2 230	118 272	53 037	5 888	2 640	20.90
Gold	7 105	371 387	52 271	22 802	3 209	16.29
Silver-lead-zinc	1 657	73 202	44 177	11 677	7 047	6.27
Nickel-copper-zinc ¹	10 312	497 875	48 281	129 701	12 578	3.84
Miscellaneous metals ²	529	24 398	46 121	18 359	34 705	1.33
Iron ore	1 229	67 101	54 598	92 146	74 976	0.73
Total	23 062	1 152 235	49 962	280 573	12 166	4.11

Sources: Energy, Mines and Resources Canada; Statistics Canada.

¹ Includes copper-zinc and nickel-copper mines. ² Includes molybdenum mines.

TABLE 8. CANADA, PERSON-HOURS PAID FOR PRODUCTION AND RELATED WORKERS, AND TONNES OF ORE MINED AND ROCK QUARRIED IN METAL MINES AND OTHER MINERAL OPERATIONS, 1984-90

	Unit	1984	1985	1986	1987	1988	1989	1990
METAL MINES¹								
Ore mined	Mt	246.4	245.0	256.3	266.2	282.1	283.8	280.6
Person-hours paid ²	million	78.2	77.1	73.6	74.9	79.1	81.8	74.6
Person-hours paid per tonne mined	number	0.32	0.31	0.29	0.28	0.28	0.29	0.27
Tonnes mined per person-hour paid	t	3.15	3.18	3.48	3.55	3.57	3.47	3.76
OTHER MINERAL OPERATIONS³								
Ore mined and rock quarried	Mt	132.3	138.2	127.4	134.7 ^r	152.5 ^r	147.7	143.4
Person-hours paid ²	million	34.0	31.3	28.9	29.9	30.4	31.4 ^r	30.7
Person-hours paid per tonne mined	number	0.26	0.23	0.23	0.22 ^r	0.20 ^r	0.21 ^r	0.21
Tonnes mined per person-hour paid	t	3.89	4.42	4.41	4.50 ^r	5.01 ^r	4.70 ^r	4.67

Sources: Energy, Mines and Resources Canada; Statistics Canada.

¹ Excludes placer mining. ² Person-hours paid for production and related workers only. ³ Includes asbestos, potash, gypsum and coal.

^r Revised.

TABLE 9. CANADA, EXPLORATION, DEVELOPMENT AND CAPITAL EXPENDITURES IN THE MINING INDUSTRY¹ BY PROVINCE AND TERRITORY, 1990-92

		Capital						Repair			Total Capital and Repair
		Construction				Machinery and Equipment	Total Capital	Construc- tion	Machinery and Equipment	Total Repair	
		On- Property Explora- tion	On- Property Develop- ment	Structures	Sub- total						
(\$ million)											
Newfoundland	1990	x	40.0	x	54.4	46.0	100.4	18.9	141.7	160.6	261.0
	1991 ^p	—	45.0	2.5	47.5	58.7	106.2	8.1	142.0	150.1	256.3
	1992 ⁱ	—	x	x	35.9	39.3	75.2	9.0	147.0	156.0	231.2
Prince Edward Island	1990	—	—	—	—	—	—	—	—	—	—
	1991 ^p	—	—	—	—	—	—	—	—	—	—
	1992 ⁱ	—	—	—	—	—	—	—	—	—	—
Nova Scotia	1990	x	x	14.4	28.8	40.5	69.3	2.0	55.2	57.2	126.5
	1991 ^p	x	37.2	x	61.6	48.7	110.3	3.1	39.8	42.9	153.2
	1992 ⁱ	x	x	10.5	16.5	38.4	54.9	3.2	32.2	35.4	90.3
New Brunswick	1990	2.0	18.3	5.7	26.0	34.1	60.1	5.2	62.9	68.1	128.2
	1991 ^p	x	x	1.8	18.7	27.1	45.8	4.4	65.3	69.7	115.5
	1992 ⁱ	x	19.7	x	30.0	30.0	60.0	11.7	87.3	99.0	159.0
Quebec	1990	38.5	244.3	69.6	352.4	92.5	444.9	33.0	250.4	283.4	728.3
	1991 ^p	26.8	195.5	19.7	242.0	117.2	359.2	42.8	253.1	295.9	655.1
	1992 ⁱ	18.5	174.9	29.4	222.8	96.1	318.9	41.0	243.0	284.0	602.9
Ontario	1990	30.8	419.2	99.8	549.8	202.8	752.6	65.7	476.3	542.0	1 294.6
	1991 ^p	19.5	196.0	46.1	261.6	166.3	427.9	52.3	372.9	425.2	853.1
	1992 ⁱ	15.2	203.3	37.0	255.5	160.6	416.1	48.9	360.3	409.2	825.3
Manitoba	1990	13.4	84.1	36.2	133.7	20.6	154.3	4.7	90.9	95.6	249.9
	1991 ^p	x	47.1	x	62.7	36.0	98.7	2.5	49.8	52.3	151.0
	1992 ⁱ	x	x	x	80.2	48.6	128.8	2.6	51.7	54.3	183.1
Saskatchewan	1990	6.4	83.8	35.2	125.4	40.8	166.2	13.0	143.8	156.8	323.0
	1991 ^p	11.9	74.2	33.3	119.4	51.5	170.9	13.2	123.1	136.3	307.2
	1992 ⁱ	13.2	75.7	14.9	103.8	58.4	162.2	13.1	132.5	145.6	307.8
Alberta	1990	2.9	21.7	1.3	25.9	56.3	82.2	0.3	143.6	143.9	226.1
	1991 ^p	0.9	23.4	0.9	25.2	22.6	47.8	0.3	119.5	119.8	167.6
	1992 ⁱ	0.7	8.8	2.4	11.9	31.1	43.0	0.5	117.3	117.8	160.8
British Columbia	1990	11.6	263.0	64.9	339.5	92.3	431.8	36.9	445.2	482.1	913.9
	1991 ^p	4.9	232.9	36.2	274.0	85.2	359.2	28.2	449.1	477.3	836.5
	1992 ⁱ	7.1	186.0	45.7	238.8	114.5	353.3	29.2	445.2	474.4	827.7

TABLE 9 (cont'd)

		Capital						Repair			Total Capital and Repair
		Construction				Machinery and Equipment	Total Capital	Construc- tion	Machinery and Equipment	Total Repair	
		On- Property Explora- tion	On- Property Develop- ment	Structures	Sub- total						
		(\$ million)									
Yukon	1990	1.3	x	x	42.0	11.5	53.5	2.3	14.1	16.4	69.9
	1991 ^P	x	x	88.5	112.2	1.4	113.6	0.4	22.3	22.7	136.3
	1992 ^I	—	x	x	34.8	3.5	38.3	0.9	27.1	28.0	66.3
Northwest Territories	1990	3.9	41.5	43.8	89.2	46.6	135.8	6.8	49.4	56.2	192.0
	1991 ^P	x	x	3.3	30.4	12.2	42.6	3.3	40.1	43.4	86.0
	1992 ^I	1.8	x	x	34.6	20.2	54.8	3.5	40.4	43.9	98.7
Canada	1990	111.2	1 251.9	404.0	1 767.1	684.0	2 451.1	188.8	1 873.6	2 062.4	4 513.5
	1991 ^P	83.9	914.3	256.8	1 255.0	626.9	1 881.9	158.7	1 676.7	1 835.4	3 717.3
	1992 ^I	77.3	800.8	186.5	1 064.6	640.7	1 705.3	163.7	1 683.9	1 847.6	3 552.9

Sources: Statistics Canada; Energy, Mines and Resources Canada.

¹ Excludes crude oil and natural gas industries.^P Preliminary; ^I Intentions; — Nil; x Confidential, included in total.

Note: Totals may not add due to rounding.

TABLE 10. CANADA, EXPLORATION , DEVELOPMENT AND CAPITAL EXPENDITURES IN THE MINING INDUSTRY¹ BY TYPE OF MINING, 1990-92

		Capital						Repair			Total Capital and Repair	
		Construction				Machinery and Equipment	Total Capital	Construction	Machinery and Equipment	Total Repair		
		On-Property Exploration	On-Property Development	Structures	Sub-total							
		(\$ million)										
METAL MINES												
Copper-gold-silver	1990	25.8	114.2	67.7	207.7	61.0	268.7	18.9	284.2	303.1	571.8	
	1991P	19.9	83.6	38.4	141.9	68.2	210.1	20.3	253.1	273.4	483.5	
	1992I	24.6	85.6	51.1	161.3	86.8	248.1	20.1	255.3	275.4	523.5	
Gold	1990	41.8	313.2	109.8	464.8	125.3	590.1	44.9	220.9	265.8	855.9	
	1991P	25.6	151.2	21.2	198.0	81.6	279.6	39.7	189.9	229.6	509.2	
	1992I	19.7	153.3	17.6	190.6	89.1	279.7	37.8	185.8	223.6	503.3	
Iron	1990	x	x	33.4	125.7	61.6	187.3	16.5	213.4	229.9	417.2	
	1991P	x	112.1	x	118.3	116.7	235.0	14.6	218.1	232.7	467.7	
	1992I	x	x	13.2	89.9	48.6	138.5	15.5	219.0	234.5	373.0	
Silver-lead-zinc	1990	17.7	64.1	26.6	108.4	32.7	141.1	9.9	81.8	91.7	232.8	
	1991P	x	x	x	163.7	19.7	183.4	6.9	97.2	104.1	287.5	
	1992I	2.3	x	43.0	82.1	29.7	111.8	14.2	124.3	138.5	250.3	
Uranium	1990	x	x	31.7	133.3	5.1	138.4	6.3	121.7	128.0	266.4	
	1991P	x	x	x	53.7	12.6	66.3	5.6	80.9	86.5	152.8	
	1992I	x	51.5	x	69.3	20.3	89.6	4.2	74.4	78.6	168.2	
Other metal mining ²	1990	14.4	233.5	71.1	319.0	135.0	454.0	44.5	217.4	261.9	715.9	
	1991P	x	166.8	x	201.6	113.6	315.2	34.6	152.7	187.3	502.5	
	1992I	12.6	142.0	22.1	176.7	111.8	288.5	32.8	142.5	175.3	463.8	
Total metal mining	1990	101.8	916.7	340.3	1 358.8	420.6	1 779.4	141.0	1 139.2	1 280.2	3 059.6	
	1991P	71.9	590.3	214.8	877.0	412.5	1 289.5	121.7	991.9	1 113.6	2 403.1	
	1992I	62.9	545.9	160.8	769.6	386.3	1 155.9	124.7	1 001.2	1 125.9	2 281.9	
NONMETAL MINES												
Asbestos	1990	x	x	1.9	63.1	1.2	64.3	2.7	37.2	39.9	104.2	
	1991P	x	x	x	29.1	3.1	32.2	4.5	44.5	49.0	81.2	
	1992I	x	x	x	57.4	1.0	58.4	5.1	46.5	51.6	110.0	

TABLE 10 (cont'd)

		Capital						Repair			Total Capital and Repair						
		Construction				Machinery and Equipment	Total Capital	Construc- tion	Machinery and Equipment	Total Repair							
		On- Property Explora- tion	On- Property Develop- ment	Structures	Sub- total												
(\$ million)																	
NONMETAL MINES (cont'd)																	
Coal	1990	3.5	176.3	24.9	204.7	125.1	329.8	24.0	451.8	475.8	805.6						
	1991 ^p	2.6	230.2	29.8	262.6	98.1	360.7	13.1	389.7	402.8	763.5						
	1992 ⁱ	2.8	154.7	12.5	170.0	126.0	296.0	13.2	379.9	393.1	689.1						
Other nonmetal mining ³	1990	x	x	37.0	140.6	137.0	277.6	21.1	245.4	266.5	544.1						
	1991 ^p	x	x	x	86.5	113.1	199.6	19.3	250.6	269.9	469.5						
	1992 ⁱ	x	x	x	67.1	127.4	194.5	20.7	256.3	277.0	471.5						
Total nonmetal mining	1990	9.4	335.1	63.8	408.3	263.3	671.6	47.8	734.4	782.2	1 453.8						
	1991 ^p	12.1	324.0	42.0	378.1	214.3	592.4	37.0	684.8	721.8	1 314.2						
	1992 ⁱ	14.4	254.9	24.9	294.2	254.3	548.5	39.1	682.7	721.8	1 270.3						
Total mining	1990	111.2	1 251.9	404.0	1 767.1	684.0	2 451.1	188.8	1 873.6	2 062.4	4 513.5						
	1991 ^p	83.9	914.3	256.8	1 255.0	626.9	1 881.9	158.7	1 676.7	1 835.4	3 717.3						
	1992 ⁱ	77.3	800.8	186.5	1 064.6	640.7	1 705.3	163.7	1 683.9	1 847.6	3 552.9						

Sources: Statistics Canada; Energy, Mines and Resources Canada.

1 Excludes expenditures in the petroleum and natural gas industries. 2 Includes nickel-copper mines, silver-cobalt mines and other metal mines. 3 Includes gypsum mines, salt mines, potash mines, quarries, sand and gravel pits and other nonmetal mines.

^p Preliminary; ⁱ Intentions; x Confidential, included in total.

Note: Totals may not add due to rounding.

TABLE 11. CANADA, CAPITAL AND REPAIR EXPENDITURES BY SELECTED INDUSTRIAL SECTOR, 1990-92

		Capital Expenditures			Repair Expenditures			Capital and Repair Expenditures		
		Construction	Machinery and Equipment	Total	Construction	Machinery and Equipment	Total	Construction	Machinery and Equipment	Total
		(\$ million)								
Agriculture and Fishing	1990	957.7	1 895.1	2 852.8	501.1	1 677.5	2 178.6	1 458.8	3 572.6	5 031.4
	1991 ^p	913.1	1 701.4	2 614.5	474.6	1 654.6	2 129.2	1 387.7	3 356.0	4 743.7
	1992 ⁱ	888.1	1 692.8	2 580.9	486.7	1 699.8	2 186.5	1 374.8	3 392.6	4 767.4
Construction	1990	356.8	1 707.4	2 064.2	72.2	1 203.6	1 275.8	429.0	2 911.0	3 340.0
	1991 ^p	299.7	1 553.2	1 852.9	65.9	1 096.3	1 162.2	365.6	2 649.5	3 015.1
	1992 ⁱ	296.6	1 537.2	1 833.8	69.7	1 148.0	1 217.7	366.3	2 685.2	3 051.5
Forestry	1990	119.2	134.8	254.0	84.6	247.0	331.6	203.8	381.8	585.6
	1991 ^p	70.2	49.7	119.9	74.1	196.6	270.7	144.3	246.3	390.6
	1992 ⁱ	104.0	55.9	159.9	76.6	199.0	275.6	180.6	254.9	435.5
Housing	1990	36 973.1	—	36 973.1	4 038.9	—	4 038.9	41 012.0	—	41 012.0
	1991 ^p	32 832.1	—	32 832.1	3 944.0	—	3 944.0	36 776.1	—	36 776.1
	1992 ⁱ	34 208.3	—	34 208.3	3 949.0	—	3 949.0	38 157.3	—	38 157.3
Manufacturing	1990	4 169.5	15 692.6	19 862.1	1 318.1	8 329.0	9 647.1	5 487.6	24 021.6	29 509.2
	1991 ^p	3 448.4	13 507.6	16 956.0	1 238.7	7 758.1	8 996.8	4 687.1	21 265.7	25 952.8
	1992 ⁱ	2 253.1	13 990.6	16 243.7	1 224.2	7 932.2	9 156.4	3 477.3	21 922.8	25 400.1
Mining ¹	1990	6 702.9	956.7	7 659.6	517.8	2 697.9	3 215.7	7 220.7	3 654.6	10 875.3
	1991 ^p	6 679.2	1 003.2	7 682.4	499.4	2 473.6	2 973.0	7 178.6	3 476.8	10 655.4
	1992 ⁱ	5 469.7	924.5	6 394.2	503.7	2 485.4	2 989.1	5 973.4	3 409.9	9 383.3
Trade	1990	1 166.5	2 166.7	3 333.2	325.1	519.7	844.8	1 491.6	2 686.4	4 178.0
	1991 ^p	1 064.8	2 138.4	3 203.2	307.5	495.5	803.0	1 372.3	2 633.9	4 006.2
	1992 ⁱ	957.2	2 015.5	2 972.7	314.8	506.8	821.6	1 272.0	2 522.3	3 794.3
Utilities	1990	11 215.5	11 208.1	22 423.6	2 504.7	6 320.4	8 825.1	13 720.2	17 528.5	31 248.7
	1991 ^p	12 859.9	11 332.3	24 192.2	2 596.1	6 017.1	8 613.2	15 456.0	17 349.4	32 805.4
	1992 ⁱ	12 838.1	12 480.0	25 318.1	2 833.0	6 102.4	8 935.4	15 671.1	18 582.4	34 253.5
Other ²	1990	25 498.5	15 288.6	40 787.1	5 844.1	2 612.9	8 457.0	31 342.6	17 901.5	49 244.1
	1991 ^p	22 902.0	14 280.1	37 182.1	5 854.3	2 499.9	8 354.2	28 756.3	16 780.0	45 536.3
	1992 ⁱ	21 301.0	15 455.2	36 756.2	5 879.3	2 563.0	8 442.3	27 180.3	18 018.2	45 198.5
Total	1990	87 159.7	49 050.0	136 209.7	15 206.6	23 608.0	38 814.6	102 366.3	72 658.0	175 024.3
	1991 ^p	81 069.4	45 565.9	126 635.3	15 054.6	22 191.7	37 246.3	96 124.0	67 757.6	163 881.6
	1992 ⁱ	78 316.1	48 151.7	126 467.8	15 337.0	22 636.6	37 973.6	93 653.1	70 788.3	164 441.4
Mining as a percentage of total	1990	7.7	2.0	5.6	3.4	11.4	8.3	7.1	5.0	6.2
	1991 ^p	8.2	2.2	6.1	3.3	11.1	8.0	7.5	5.1	6.5
	1992 ⁱ	7.0	1.9	5.1	3.3	11.0	7.9	6.4	4.8	5.7

Source: Statistics Canada.

— Nil; i Intentions; p Preliminary.

¹ Includes mines, quarries and oil wells. ² Includes finance, real estate, insurance, commercial services, institutions and government departments.

Note: Totals may not add due to rounding.

TABLE 12. CANADA, CAPITAL AND REPAIR EXPENDITURES IN MINING¹ BY GEOGRAPHICAL REGION, 1990-92

		Capital Expenditures			Repair Expenditures			Capital and Repair Expenditures		
		Construction	Machinery and Equipment	Total	Construction	Machinery and Equipment	Total	Construction	Machinery and Equipment	Total
		(\$ million)								
Atlantic Region	1990	304.7	120.7	425.4	26.1	259.9	286.0	330.8	380.6	711.4
	1991 ^p	720.4	134.7	855.1	15.5	247.0	262.5	735.9	381.7	1 117.6
	1992 ⁱ	631.2	107.7	6.0	23.9	266.5	290.4	655.1	374.2	1 029.3
Quebec	1990	352.5	92.6	445.1	33.0	250.3	283.3	385.5	342.9	728.4
	1991 ^p	245.0	117.0	362.0	42.9	253.0	295.9	287.9	370.0	657.9
	1992 ⁱ	227.8	96.0	323.8	40.9	243.0	283.9	268.7	339.0	607.7
Ontario	1990	568.5	203.6	772.1	66.1	476.7	542.8	634.6	680.3	1 314.9
	1991 ^p	286.6	166.5	453.1	52.7	373.2	425.9	339.3	539.7	879.0
	1992 ⁱ	267.1	161.0	428.1	49.4	360.4	409.8	316.5	521.4	837.9
Prairie Region	1990	4 438.9	386.8	4 825.7	301.5	1 185.1	1 486.6	4 740.4	1 571.9	6 312.3
	1991 ^p	4 400.5	473.6	4 874.1	300.3	1 056.1	1 356.4	4 700.8	1 529.7	6 230.5
	1992 ⁱ	3 756.3	416.0	4 172.3	295.5	1 073.6	1 369.1	4 051.8	1 489.6	5 541.4
British Columbia	1990	821.3	92.8	914.1	81.0	461.0	542.0	902.3	553.8	1 456.1
	1991 ^p	850.8	88.3	939.1	83.6	477.4	561.0	934.4	565.7	1 500.1
	1992 ⁱ	483.5	115.9	599.4	88.9	469.7	558.6	572.4	585.6	1 158.0
Yukon and Northwest Territories	1990	217.0	60.2	277.2	10.1	64.9	75.0	227.1	125.1	352.2
	1991 ^p	175.9	23.1	199.0	4.4	66.9	71.3	180.3	90.0	270.3
	1992 ⁱ	103.8	27.9	131.7	5.1	72.2	77.3	108.9	100.1	209.0
Total	1990	6 702.9	956.7	7 659.6	517.8	2 697.9	3 215.7	7 220.7	3 654.6	10 875.3
	1991 ^p	6 679.2	1 003.2	7 682.4	499.4	2 473.6	2 973.0	7 178.6	3 476.8	10 655.4
	1992 ⁱ	5 469.7	924.5	6 394.2	503.7	2 485.4	2 989.1	5 973.4	3 409.9	9 383.3

Source: Statistics Canada.

ⁱ Intentions; ^p Preliminary.¹ Includes mines, quarries and oil wells.

Note: Totals may not add due to rounding.

TABLE 13. CANADA, CAPITAL AND REPAIR EXPENDITURES IN MINING¹ AND MINERAL MANUFACTURING INDUSTRIES,² 1990-92

	1990			1991P			1992I		
	Capital	Repair	Total	Capital	Repair	Total	Capital	Repair	Total
(\$ million)									
MINING INDUSTRY									
Metal mines									
Copper-gold-silver	268.7	303.0	571.7	210.1	273.3	483.4	248.2	275.3	523.5
Gold	590.2	265.9	856.1	279.6	229.6	509.2	279.6	223.7	503.3
Iron	187.3	229.8	417.1	235.0	232.8	467.8	138.5	234.5	373.0
Silver-lead-zinc	141.0	91.5	232.5	183.4	104.1	287.5	111.8	138.5	250.3
Other metal mines	592.4	389.7	982.1	381.5	273.7	655.2	378.0	253.8	631.8
Total	1 779.6	1 279.9	3 059.5	1 289.6	1 113.5	2 403.1	1 156.1	1 125.8	2 281.9
Nonmetal mines									
Asbestos	64.2	39.9	104.1	32.2	49.1	81.3	58.4	51.6	110.0
Other nonmetal mines ³	607.7	742.1	1 349.8	560.4	672.8	1 233.2	490.4	669.9	1 160.3
Total	671.9	782.0	1 453.9	592.6	721.9	1 314.5	548.8	721.5	1 270.3
Mineral fuels									
Petroleum and gas ⁴	5 208.1	1 153.8	6 361.9	5 800.1	1 137.7	6 937.8	4 689.3	1 141.8	5 831.1
Total mining industries	7 659.6	3 215.7	10 875.3	7 682.3	2 973.1	10 655.4	6 394.2	2 989.1	9 383.3
MINERAL MANUFACTURING									
Primary metal industries									
Aluminum rolling, casting and extruding	81.5	60.7	142.2	51.8	64.8	116.6	87.1 ^e	65.6	152.7 ^e
Copper and copper alloy, rolling, casting and extruding	1.8	6.8	8.6	6.9	6.3	13.2	9.0 ^e	6.2	15.2 ^e
Iron and steel mills	647.4	1 050.3	1 697.7	616.1	914.8	1 530.9	398.5 ^e	975.8	1 374.3 ^e
Iron foundries	36.4	57.4	93.8	42.7	70.0	112.7	15.8 ^e	69.8	85.6 ^e
Metal rolling, casting and extruding	25.5	20.3	45.8	24.9	28.5	53.4	22.4 ^e	34.3	56.7 ^e
Smelting and refining	2 063.5	684.8	2 748.3	1 712.6	625.4	2 338.0	790.9 ^e	636.9	1 427.8 ^e
Steel pipe and tube mills	47.2	88.7	135.9	49.3	113.2	162.5	41.7 ^e	112.8	154.5 ^e
Total	2 903.3	1 969.0	4 872.3	2 504.3	1 823.0	4 327.3	1 365.2	1 901.4	3 266.6
Nonmetallic mineral products									
Abrasives	9.4	17.3	26.7	5.3	12.7	18.0	7.9 ^e	12.2	20.1 ^e
Cement	123.8	133.0	256.8	89.2	95.2	184.4	50.0 ^e	95.5	145.5 ^e
Clay products	x	x	29.8	4.7	9.8	14.5	28.2 ^e	9.8	38.0 ^e
Concrete products	38.1	35.6	73.7	29.8	37.2	67.0	25.8 ^e	40.0	65.8 ^e
Glass and glass products	190.6	29.2	219.8	47.9	29.6	77.5	70.3 ^e	30.5	100.8 ^e
Lime	22.6	7.0	29.6	x	x	x	x	x	26.3 ^e
Ready-mix concrete	51.6	84.6	136.2	46.2	80.2	126.4	45.9 ^e	76.2	122.1 ^e
Stone products	x	x	3.2	x	x	x	x	x	0.9 ^e
Other nonmetallic mineral products	90.7	67.9	158.6	35.9	50.7	86.6	44.8 ^e	51.4	96.2 ^e
Total	540.9	393.5	934.4	283.6	325.0	608.6	289.7	326.1	615.8
Metal-fabricating industries									
Boiler and plate works	14.0	14.3	28.3	9.6	10.7	20.3	19.5 ^e	11.3	30.8 ^e
Fabricated structural metal	21.9	17.1	39.0	22.4	13.2	35.6	18.2 ^e	12.5	30.7 ^e
Hardware, tool and cutlery	34.2	25.7	59.9	26.9	31.7	58.6	44.7 ^e	34.6	79.3 ^e
Heating equipment	11.0	5.8	16.8	5.1	6.1	11.2	10.6 ^e	6.1	16.7 ^e
Machine ships	17.4	5.3	22.7	18.4	7.5	25.9	23.7 ^e	6.9	30.6 ^e
Metal stamping, pressing and coating	76.0	66.2	142.2	96.8	47.9	144.7	123.7 ^e	48.0	171.7 ^e
Miscellaneous metal fabricating	46.2	27.7	73.9	34.7	23.8	58.5	51.0 ^e	23.4	74.4 ^e
Ornamental and architectural metal	42.2	13.2	55.4	18.0	12.3	30.3	26.5 ^e	12.1	38.6 ^e
Wire and wire products	65.6	56.7	122.3	45.1	42.9	88.0	68.3 ^e	46.0	114.3 ^e
Total	328.5	232.0	560.5	277.0	196.1	473.1	386.3	200.9	587.2

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TABLE 13. (cont'd)

	1990			1991 ^P			1992 ^I		
	Capital	Repair	Total	Capital	Repair	Total	Capital	Repair	Total
• (\$ million)									
MINERAL MANUFACTURING (cont'd)									
Petroleum and coal products	x	x	22.3	x	x	20.5	x	x	25.9
Petroleum and coal products	x	x	1 487.3	x	x	1 523.1	x	x	1 273.9
Petroleum refineries									
Total	1 008.9	500.7	1 509.8	1 045.4	498.2	1 543.6	828.1	471.7	1 299.8
Total mineral manufacturing industries	4 781.6	3 095.2	7 876.8	4 110.3	2 842.3	6 952.6	2 869.3	2 900.1	5 769.4
Total mining and mineral manufacturing industries	12 441.2	6 310.9	18 752.1	11 792.6	5 815.4	17 608.0	9 263.5	5 889.2	15 152.7

Source: Statistics Canada.

• Estimate (breakdown estimated by EMR); ^I Intentions; ^P Preliminary; x Confidential.

¹ Does not include cement, lime and clay products (domestic clay) manufacturing, smelting and refining. ² All years have been revised to include the metal-fabricating industries. ³ Includes coal mines, gypsum, salt, potash and miscellaneous nonmetal mines and quarrying. ⁴ The total of capital expenditures shown under "petroleum and gas" is equal to the total capital expenditure under the columns entitled "petroleum and natural gas extraction," "natural gas processing plants" and "oil and gas drilling contractors" of Table 16.

Note: Totals may not add due to rounding.

TABLE 14. CANADA, CAPITAL AND REPAIR EXPENDITURES IN THE MINING INDUSTRY,¹ 1986-92

	1986	1987	1988	1989	1990	1991 ^p	1992 ⁱ
	(\$ million)						
METAL MINES							
Capital							
Construction	979.7	1 328.2	1 609.0	1 356.4	1 358.7	877.2	769.9
Machinery	319.4	372.9	566.5	578.6	420.9	412.5	386.2
Subtotal	1 299.1	1 701.1	2 175.5	1 935.0	1 779.6	1 289.7	1 156.1
Repair							
Construction	99.6	109.8	123.2	153.0	140.9	121.5	124.4
Machinery	811.3	880.8	1 033.6	1 062.1	1 139.0	991.9	1 001.4
Subtotal	910.9	990.6	1 156.8	1 215.1	1 279.9	1 113.4	1 125.8
Total capital and repair	2 210.0	2 691.7	3 332.3	3 150.1	3 059.5	2 403.1	2 281.9
NONMETAL MINES²							
Capital							
Construction	502.4	421.7	432.9	417.1	408.4	378.3	294.5
Machinery	256.6	251.6	263.4	270.1	263.5	214.3	254.3
Subtotal	759.0	673.3	696.3	687.2	671.9	592.6	548.8
Repair							
Construction	31.2	23.2	38.3	40.7	47.8	37.0	38.9
Machinery	565.4	608.8	634.6	682.4	734.2	684.9	682.6
Subtotal	596.6	632.0	672.9	723.1	782.0	721.9	721.5
Total capital and repair	1 355.6	1 305.3	1 369.2	1 410.3	1 453.9	1 314.5	1 270.3
MINERAL FUELS							
Capital							
Construction	5 142.4	4 096.0	5 134.4	4 444.9	4 935.8	5 423.7	4 405.3
Machinery	496.4	505.8	744.2	306.1	272.3	376.4	284.0
Subtotal	5 638.8	4 601.8	5 878.6	4 751.0	5 208.1	5 800.1	4 689.3
Repair							
Construction	316.5	307.0	241.8	235.2	329.1	340.9	340.4
Machinery	705.5	673.9	761.5	788.3	824.7	796.8	801.4
Subtotal	1 022.0	980.9	1 003.3	1 023.5	1 153.8	1 137.7	1 141.8
Total capital and repair	6 660.8	5 582.7	6 881.9	5 774.5	6 361.9	6 937.8	5 831.1
TOTAL MINING							
Capital							
Construction	6 624.5	5 845.9	7 176.3	6 218.4	6 702.9	6 679.2	5 469.7
Machinery	1 072.4	1 130.3	1 574.1	1 154.8	956.7	1 003.2	924.5
Subtotal	7 696.9	6 976.2	8 750.4	7 373.2	7 659.6	7 682.4	6 394.2
Repair							
Construction	447.3	440.0	403.3	428.9	517.8	499.4	503.7
Machinery	2 082.2	2 163.5	2 429.7	2 532.8	2 697.9	2 473.6	2 485.4
Subtotal	2 529.5	2 603.5	2 833.0	2 961.7	3 215.7	2 973.0	2 989.1
Total capital and repair	10 226.4	9 579.7	11 583.4	10 334.9	10 875.3	10 655.4	9 383.3

Source: Statistics Canada.

ⁱ Intentions; ^p Preliminary.¹ Does not include cement, lime and clay products (domestic clays) manufacturing, smelting and refining. ² Includes coal mines, asbestos, gypsum, salt, potash, miscellaneous nonmetals, quarrying and sand pits.

Note: Totals may not add due to rounding.

TABLE 15. CANADA, CAPITAL AND REPAIR EXPENDITURES IN THE MINERAL MANUFACTURING INDUSTRIES,¹ 1986-92

	1986	1987	1988	1989	1990	1991P	1992I
(\$ millions)							
PRIMARY METAL INDUSTRIES²							
Capital							
Construction	400.2	265.7	287.3	611.7	1 110.0	867.1	213.9
Machinery	1 333.6	1 223.2	1 242.8	1 729.4	1 793.3	1 637.2	1 151.3
Subtotal	1 733.8	1 488.9	1 530.1	2 341.1	2 903.3	2 504.3	1 365.2
Repair							
Construction	126.9	119.0	134.0	186.4	166.4	171.3	168.3
Machinery	1 279.0	1 409.4	1 616.8	1 721.3	1 802.8	1 651.7	1 733.1
Subtotal	1 405.9	1 528.4	1 750.8	1 907.7	1 969.0	1 823.0	1 901.4
Total capital and repair	3 139.7	3 017.3	3 280.9	4 248.8	4 872.3	4 327.3	3 266.6
NONMETALLIC MINERAL PRODUCTS³							
Capital							
Construction	36.0	73.5	88.1	120.5	69.8	24.5	17.7
Machinery	295.1	282.6	352.5	447.6	471.1	259.1	272.0
Subtotal	331.1	356.1	440.6	568.1	540.9	283.6	289.7
Repair							
Construction	24.7	23.3	24.0	23.1	27.8	17.9	19.7
Machinery	285.7	277.5	313.9	339.1	365.7	307.1	306.4
Subtotal	310.4	300.8	337.9	362.2	393.5	325.0	326.1
Total capital and repair	641.5	656.9	778.5	930.3	934.4	608.6	615.8
METAL-FABRICATING INDUSTRIES							
Capital							
Construction	194.7	107.1	112.2	84.5	70.6	44.4	29.7
Machinery	525.4	356.3	355.2	340.6	257.9	232.6	356.6
Subtotal	720.1	463.4	467.4	425.1	328.5	277.0	386.3
Repair							
Construction	22.7	24.2	27.8	29.6	27.7	24.2	23.5
Machinery	209.1	194.7	197.1	201.1	204.3	171.9	177.4
Subtotal	231.8	218.9	224.9	230.7	232.0	196.1	200.9
Total capital and repair	951.9	682.3	692.3	655.8	560.5	473.1	587.2
PETROLEUM AND COAL PRODUCTS							
Capital							
Construction	272.3	464.9	437.9	626.0	665.3	781.0	615.3
Machinery	125.9	205.0	261.0	335.1	343.6	284.4	212.8
Subtotal	398.2	669.9	698.9	961.1	1 008.9	1 045.4	828.1
Repair							
Construction	212.0	252.8	255.6	274.3	335.3	358.9	338.6
Machinery	91.9	112.8	115.7	129.7	165.4	139.3	133.1
Subtotal	303.9	365.6	371.3	404.0	500.7	498.2	471.7
Total capital and repair	702.1	1 035.5	1 070.2	1 365.1	1 509.8	1 543.6	1 299.8
TOTAL MINERAL MANUFACTURING INDUSTRIES							
Capital							
Construction	903.2	911.2	925.5	1 442.7	1 915.7	1 717.0	876.6
Machinery	2 280.0	2 067.1	2 211.5	2 852.7	2 865.9	2 393.3	1 992.7
Subtotal	3 183.2	2 978.3	3 137.0	4 295.4	4 781.6	4 110.3	2 869.3
Repair							
Construction	386.3	419.3	441.4	513.4	557.2	572.3	550.1
Machinery	1 865.7	1 994.4	2 243.5	2 391.2	2 538.0	2 270.0	2 350.0
Subtotal	2 252.0	2 413.7	2 684.9	2 904.6	3 095.2	2 842.3	2 900.1
Total capital and repair	5 435.2	5 392.0	5 821.9	7 200.0	7 876.8	6 952.6	5 769.4

Source: Statistics Canada.

¹ Intentions; P Preliminary.² All years have been revised to include the metal-fabricating industries. ³ Includes smelting and refining. ³ Includes cement, lime and clay products manufacturing.

Note: Totals may not add due to rounding.

TABLE 16. CANADA, CAPITAL EXPENDITURES IN THE PETROLEUM, NATURAL GAS AND ALLIED INDUSTRIES,¹ 1982-92

	Petroleum and Natural Gas Extraction	Transportation (Pipelines)	Marketing (Chiefly Outlets of Oil Companies)	Natural Gas Distribution	Petroleum and Coal Products Industries	Natural Gas Processing Plants	Oil and Gas Drilling Contractors	Total Capital Expenditures
	(\$ million)							
1982	6 743.4	1 994.3	320.5	517.6	1 224.5	522.8	173.5	11 496.6
1983	6 563.5	660.5	374.5	516.8	840.8	195.8	155.4	9 307.3
1984	6 946.4	795.4	422.9	604.1	432.4	340.0	43.8	9 585.0
1985	8 187.6	664.2	356.8	603.5	335.7	337.7	80.1	10 565.6
1986	5 401.1	586.9	344.9	573.9	398.2	207.8	29.9	7 542.7
1987	4 414.6	503.0	412.4	571.8	669.9	174.1	13.1	6 758.9
1988	5 589.9	828.9	478.4	602.8	698.9	271.8	16.9	8 487.6
1989	4 309.7	1 520.7	501.7	570.4	961.4	427.4	14.0	8 305.3
1990	4 750.8	1 817.2	380.2	666.9	1 008.9	445.3	12.1	9 081.4
1991 ^p	5 115.3	2 706.0	408.6	773.8	1 045.4	671.6	13.1	10 733.8
1992 ⁱ	4 529.9	2 976.7	443.8	854.0	828.1	445.2	13.0	10 090.7

Source: Statistics Canada.

ⁱ Intentions; ^p Preliminary.

¹ The petroleum and natural gas industries in this table include all companies engaged in whole or in part in oil and gas activities.

Note: Totals may not add due to rounding.

