

Canada's Global Mining Presence

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THE GLOBAL MARKET FOR MINERAL EXPLORATION

During 1997, the worldwide market for precious-metal, base-metal and diamond exploration was expected to grow by 11% to \$7.0 billion (US\$5.1 billion), up from \$6.3 billion (US\$4.6 billion) in 1996.

Global trends in worldwide mineral exploration activity are based on data for the world's larger companies,¹ defined here as those with annual exploration budgets greater than \$4 million (US\$3 million). In 1997, there were 279 such companies, up from 223 in 1996 and only 154 in 1995. During 1997, the larger companies were expected to undertake programs worldwide worth \$5.5 billion (US\$4.0 billion), which represent about 80% of the global market for mineral exploration.

LARGER CANADIAN-BASED COMPANIES

In 1996, mining companies listed on Canadian stock exchanges raised over \$6 billion in equity financing.² As a result, the number of Canadian-based companies that planned to spend more than \$4 million on exploration around the world grew to 141 during 1997, up from 94 in 1996 and only 55 in 1995. Many of these larger companies have no substantial revenues from mineral production, and they rely entirely on the stock market to finance their exploration programs.

In 1997, the larger Canadian-based companies planned to spend \$1.9 billion on mineral exploration in both Canada and elsewhere around the world, up from \$1.4 billion in 1996. In contrast, the larger companies based in Australia, the source of the second-largest exploration programs in the world, planned to

spend about \$1.4 billion worldwide, about half of it at home. Canadian-based companies now control 35% and the dominant share, by far, of the exploration programs planned by all of the world's larger companies, up from 28% in 1996 (Figure 1). In 1997, the larger Canadian-based companies had worldwide exploration budgets with a mean of \$13.7 million and a median of \$6.4 million.

At the end of 1997, companies of all sizes listed on Canadian stock exchanges held interests in a portfolio of more than 8000 exploration or producing properties³ (Figure 2) located in more than 100 countries around the world. Most of this portfolio is at the exploration stage.

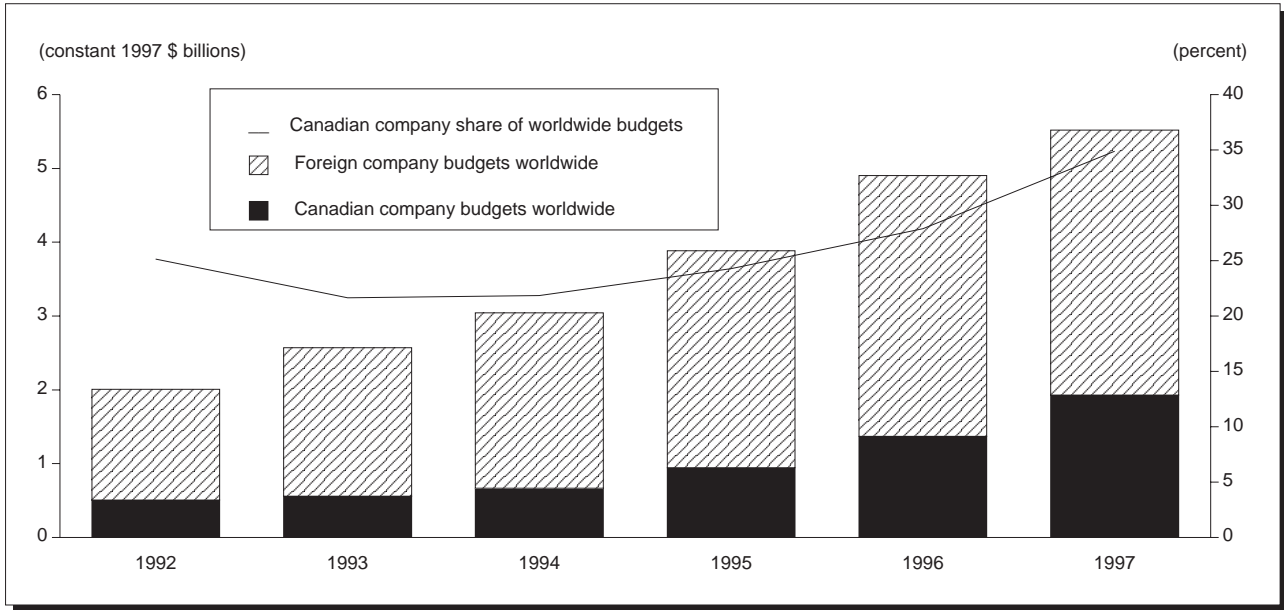
Canadian companies are continuing to assume increasing amounts of geological and country risk abroad. The ratio of exploration properties to the total number of exploration and producing properties held outside Canada has increased steadily since the early 1990s. In late 1992, that ratio was 0.82 for Latin America, 0.79 for Africa, 0.78 for Europe and the former Soviet Union (FSU), and 0.67 for Asia-Pacific. By late 1997, it had increased to 0.93 for both Latin America and Africa, to 0.88 for Asia-Pacific, and to 0.86 for Europe and the FSU. In comparison, the ratio of exploration properties to the total number of properties held in Canada has remained roughly constant at 0.96 over at least the past six years.

LARGER-COMPANY EXPLORATION MARKET IN CANADA

In 1997, the larger-company mineral exploration market in Canada was valued at almost \$600 million (Figure 3), or 11% of the \$5.5 billion larger-company market worldwide. The larger-company market in Canada accounts for about 70% of the total domestic mineral exploration market; the remaining 30% is held mainly by smaller companies. The activities of smaller companies are not addressed here.

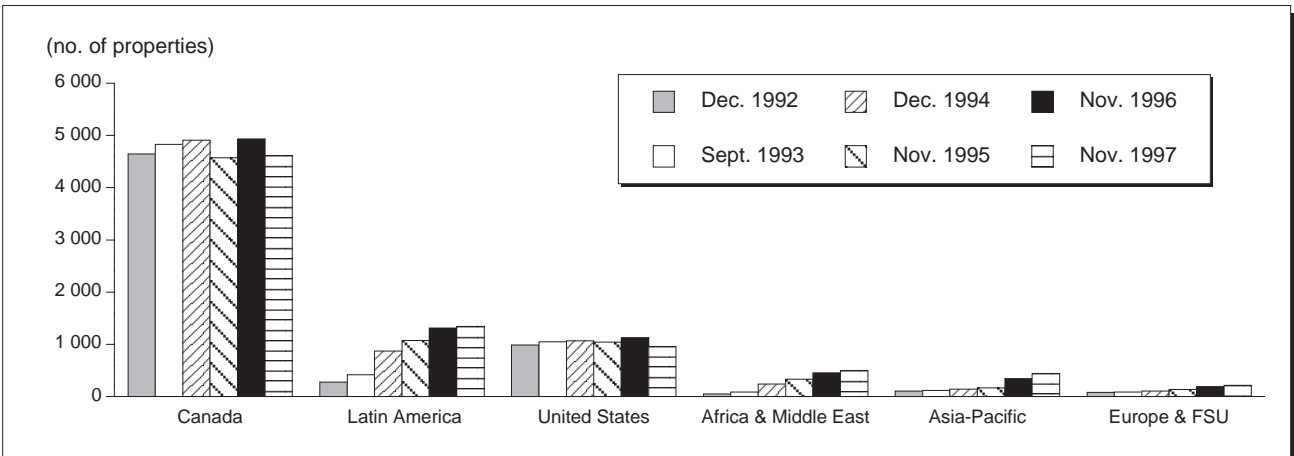
The budgets of the world's larger domestic-based and foreign-based companies allocated to exploration in Canada in 1997 were down by about \$45 million, or 7%, compared with those in 1996. Although the budgets of these companies for Canada have risen almost every year since 1991, the proportion of worldwide

Figure 1
Exploration Budgets of the World's Larger Companies, by Country of Origin, 1992-97
 Companies with Worldwide Budgets of at Least \$4 Million (US\$3 Million)
 For Precious-Metal, Base-Metal or Diamond Exploration



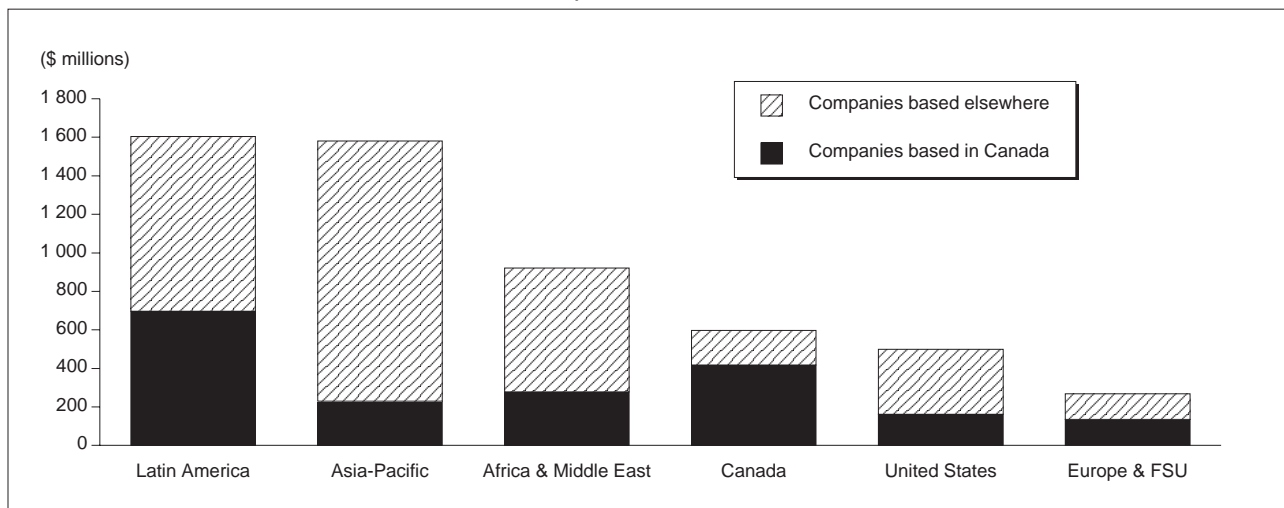
Source: Natural Resources Canada, based on *Corporate Exploration Strategies: A Worldwide Analysis*, Metals Economics Group, Halifax, Nova Scotia.
 Notes: Worldwide exploration budgets of companies that intended to spend less than \$4 million (US\$3 million) annually are excluded. Worldwide exploration budgets for other commodities such as uranium or industrial minerals are also excluded.

Figure 2
Canadian Mineral Property Portfolio Worldwide, by Region, 1992-97
 Companies of All Sizes Listed on Canadian Stock Exchanges



Source: Natural Resources Canada, based on *MIN-MET CANADA* database, ROBERTSON INFO-DATA Inc., Vancouver, British Columbia, and used under licence.

Figure 3
Exploration Budgets of the World's Larger Companies for Selected Regions of the World, 1997
 Companies with Worldwide Budgets of at Least \$4 Million (US\$3 Million)
 For Precious-Metal, Base-Metal or Diamond Exploration



Source: Natural Resources Canada, based on *Corporate Exploration Strategies: A Worldwide Analysis*, Metals Economics Group, Halifax, Nova Scotia.
 Notes: Worldwide exploration budgets of companies that intended to spend less than \$4 million (US\$3 million) annually are excluded. Worldwide exploration budgets for other commodities such as uranium or industrial minerals are also excluded.

budgets allocated to Canada has fallen gradually from 18% in 1992 (Figure 4) because of the mammoth increase in exploration activity that has occurred in Latin America, Asia and Africa since the early 1990s.

Canada remains, by far, the country where the larger Canadian-based companies spend the most on exploration (Figure 5). During 1997, these companies were expected to spend \$417 million in Canada, up by more than \$20 million, or 5%, from the \$395 million that they had budgeted in 1996. These Canadian companies control 70% of the larger-company market in Canada. The situation is identical in the United States and Australia where American- and Australian-based companies control the largest share of their respective domestic larger-company markets for mineral exploration.

In contrast, in 1992, Canadian-based companies controlled 80% of the larger-company exploration market in Canada. However, with increasing globalization, their share of the market has fallen gradually as foreign-based companies increased their activities in this country. The share of the exploration market controlled by the larger domestic firms has also declined in the United States and in Latin America. In Australia, on the other hand, Australian-based companies still control over 80% of their domestic market.

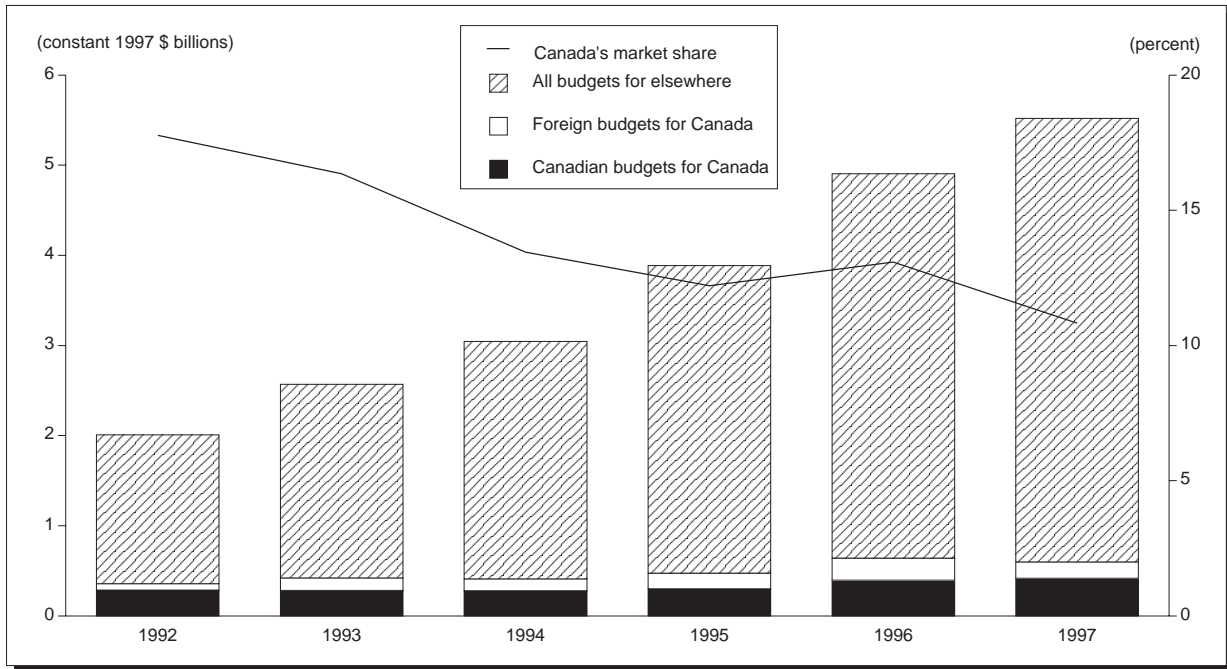
At the end of 1997, companies of all sizes listed on Canadian stock exchanges held more than 4600 mineral properties in Canada, about 7% less than in 1996, but about the same number as they held in the

early 1990s (Figure 2). In early 1997, there were more than 170 mineral projects in Canada at the deposit appraisal stage.⁴

Globalization of the mining industry is not only providing benefits to developing countries. During 1997, the larger foreign-based multi-nationals were expected to spend \$180 million on mineral exploration in Canada. Compared with 1996, the budgets of larger foreign-based companies for Canada decreased by about 25%. This is, in part, because Australian-based BHP Minerals Pty Ltd. has advanced its Ekati diamond project at Lac de Gras in the Northwest Territories to the mine-construction stage, and such investment is not counted as exploration. Nonetheless, the budgets of the larger foreign-based companies represent 30% of the exploration programs planned for Canada by all of the world's larger companies, including those based in Canada. In 1992, the budgets (adjusted for inflation) of the larger foreign-based companies for exploration in Canada were only \$70 million.

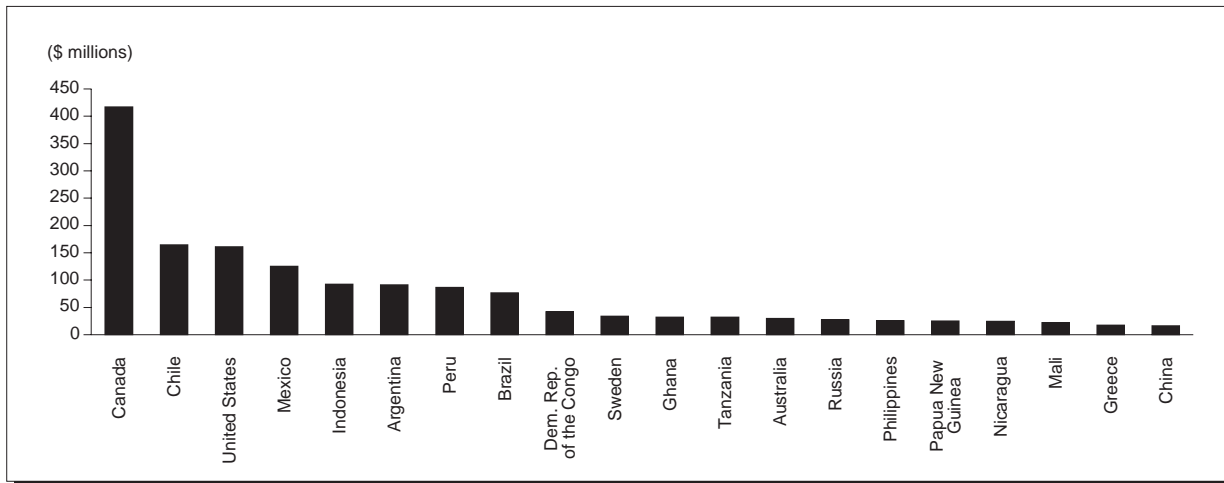
Other larger foreign-based companies active in Canada include WMC Limited, the Ashton Group, and Savage Resources Limited, all based in Australia; Echo Bay Mines Ltd., the Homestake Group, Royal Oak Mines Inc., Battle Mountain Gold Company, Phelps Dodge Corporation, Cyprus Amax Minerals Company, Newmont Gold Company, AMAX Gold, and Vista Gold Corp., all based in the United States; the Minorco Group and Outokumpu Metals and Resources Oy, both based in Europe; Nord Pacific, based in Bermuda; the Gencor Group and the

Figure 4
Exploration Budgets of the World's Larger Companies, by Destination, 1992-97
 Companies with Worldwide Budgets of at Least \$4 Million (US\$3 Million)
 For Precious-Metal, Base-Metal or Diamond Exploration



Source: Natural Resources Canada, based on *Corporate Exploration Strategies: A Worldwide Analysis*, Metals Economics Group, Halifax, Nova Scotia.
 Notes: Worldwide exploration budgets of companies that intended to spend less than \$4 million (US\$3 million) annually are excluded. Worldwide exploration budgets for other commodities such as uranium or industrial minerals are also excluded.

Figure 5
Exploration Budgets of the Larger Canadian-Based Companies, 1997 –
Countries Accounting for 80% of Budgets
 Companies with Worldwide Budgets of at Least \$4 Million (US\$3 Million)
 For Precious-Metal, Base-Metal or Diamond Exploration



Source: Natural Resources Canada, based on *Corporate Exploration Strategies: A Worldwide Analysis*, Metals Economics Group, Halifax, Nova Scotia.
 Notes: Worldwide exploration budgets of companies that intended to spend less than \$4 million (US\$3 million) annually are excluded. Worldwide exploration budgets for other commodities such as uranium or industrial minerals are also excluded.

De Beers Group, both based in Africa; First Dynasty Mines, based in Singapore; and Korea Zinc.

LARGER CANADIAN-BASED COMPANIES ABROAD

In 1997, the larger Canadian-based companies planned to spend \$1.5 billion on mineral exploration outside of Canada. Since 1992, their foreign exploration budgets (adjusted for inflation) have increased at an average annual compound rate of 47%, up from roughly \$220 million in 1992. The proportion of their total budgets allocated to foreign exploration programs rose to over 78% in 1997, up from 43% in 1992. Twenty countries spread around the globe account for 80% of the budgets of the larger Canadian-based companies (Figure 5).

At the end of 1997, companies of all sizes listed on Canadian stock exchanges held interests in a portfolio of more than 3400 mineral properties located abroad (Figure 2). Foreign properties now represent more than 40% of the total mineral property portfolio held by these companies, up from about 25% in 1992. Between 1992 and 1997, the average annual compound rate of growth in their holdings of foreign mineral properties was almost 18%.

Apart from the United States where companies of all sizes listed on Canadian stock exchanges have a sub-

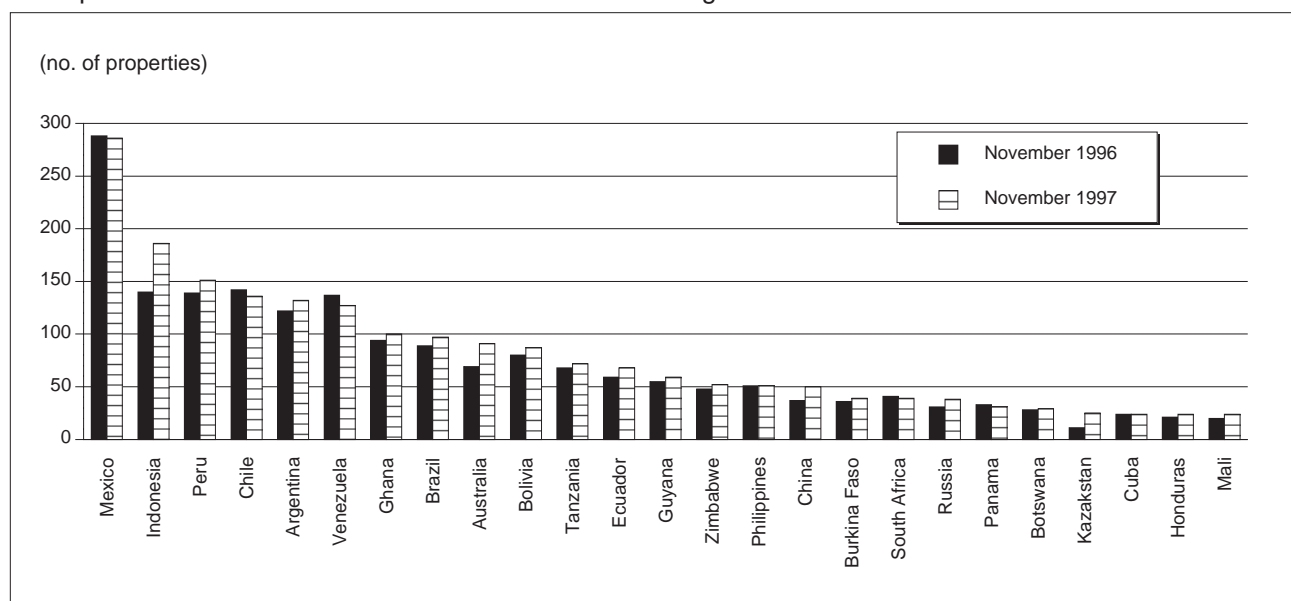
stantial mining presence, two dozen other nations, spread across the globe, account for 80% of the balance of their mineral property portfolio held abroad (Figure 6).

United States

In 1997, the larger-company mineral exploration market in the United States was valued at about \$500 million (Figure 3), or 9% of the \$5.5 billion larger-company market worldwide. The larger Canadian-based companies planned to spend about \$160 million in the United States, up from about \$145 million in 1996. They held over 30% of the larger-company market there, up from about 20% in 1992. Adjusted for inflation, the annual exploration budgets of the larger Canadian-based companies for the United States have grown at an average annual compound rate of about 13% since the early 1990s.

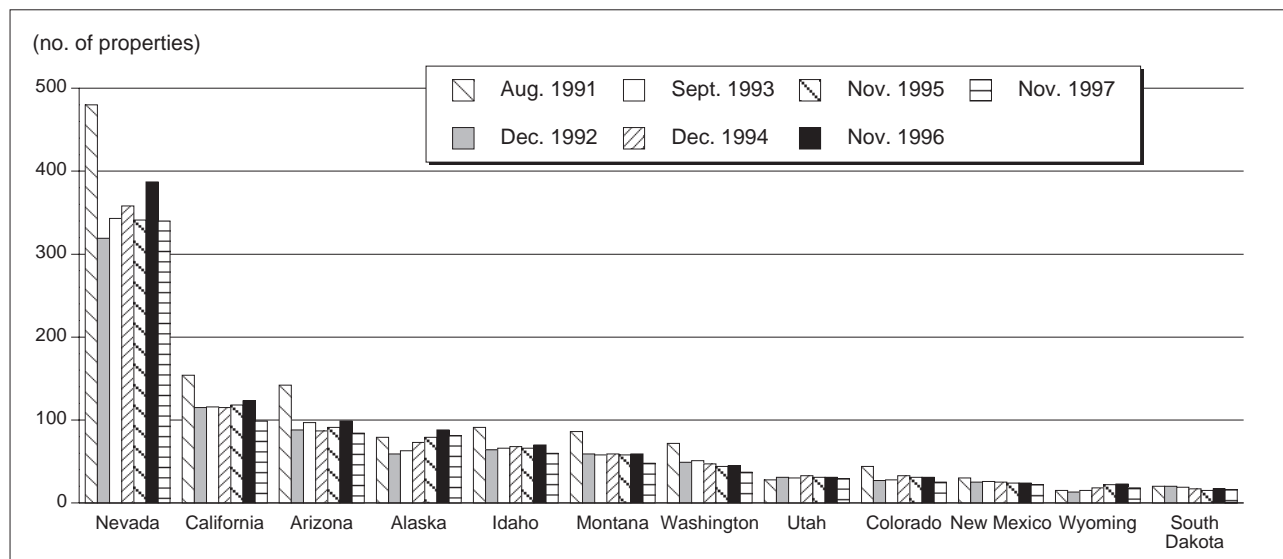
Between 1992 and 1997, companies of all sizes listed on Canadian stock exchanges held about 1000 mineral properties in the United States (Figure 2). At the end of 1997, there were some 400 such companies active in that country. These companies had projects in 34 states, but mainly in the western part of the country in Nevada, California, Arizona, Alaska, Idaho, Montana, Washington, Utah, Colorado, New Mexico, Wyoming, and South Dakota (Figure 7). Nevada alone accounted for over 300 properties, or more than one third of the Canadian portfolio in the United States.

Figure 6
Canadian Mineral Property Portfolio Abroad, 1996 and 1997 – Countries Accounting for 80% of Canadian Holdings Located Outside the United States in 1997
Companies of all Sizes Listed on Canadian Stock Exchanges



Source: Natural Resources Canada, based on MIN-MET CANADA database, ROBERTSON INFO-DATA Inc., Vancouver, British Columbia, and used under licence.

Figure 7
Canadian Mineral Property Portfolio in the United States, 1991-97 –
States Accounting for 90% of Canadian Holdings in 1997
 Companies of all Sizes Listed on Canadian Stock Exchanges



Source: Natural Resources Canada, based on *MIN-MET CANADA* database, ROBERTSON INFO-DATA Inc., Vancouver, British Columbia, and used under licence.

Although Canadian companies have expanded their activities considerably to Latin America, Africa and Asia since the early 1990s, the United States is likely to remain, for the foreseeable future, the foreign country where they hold their largest portfolio of mineral properties. At the end of 1997, the United States accounted for 28% of all properties held abroad by these companies.

Of all the Canadian-based companies, Placer Dome Inc., Barrick Gold Corporation and Cominco Ltd. planned the largest exploration programs in the United States during 1997. Together they were expected to spend over \$87 million. Placer Dome is focussing its deposit appraisal and feasibility study programs on the South Pipeline gold project located on the Battle Mountain-Eureka gold trend in Nevada, as well as on the Donlin Creek gold project in Alaska; the company is focussing its grassroots exploration programs on properties in Alaska, Arizona, Montana and Nevada, and its mine-site exploration programs on Cortez and Bald Mountain in Nevada and on Golden Sunlight in Montana. Cominco is focussing on properties in Alaska, Arizona, Idaho, Minnesota, Montana, South Carolina and Washington, while Barrick is concentrating on Goldstrike and on other properties located on the Carlin gold trend in Nevada.

Latin America and the Caribbean

In 1997, the larger-company mineral exploration market in Latin America and the Caribbean was valued at some \$1.6 billion (Figure 3), or roughly 30% of

the \$5.5 billion larger-company market worldwide. That region of the globe hosts the largest concentration of Canadian mineral exploration activity. During 1997, the larger Canadian-based companies planned to spend almost \$700 million in the region, an increase of more than \$200 million, or over 40%, compared with their budgets for 1996.

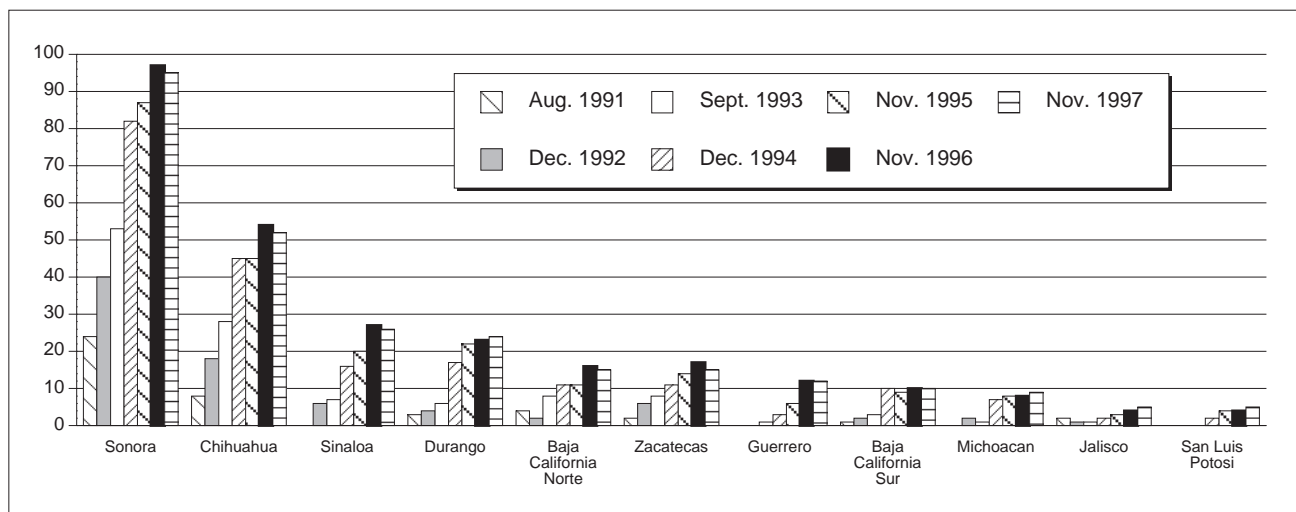
Adjusted for inflation, the exploration budgets of the larger Canadian-based companies for Latin America and the Caribbean have grown at an average annual compound rate of over 50% between 1992 and 1997. In 1997, these companies held about 45% of the larger-company market in the region, by far the largest share. In addition, they held the dominant share in Mexico, South America, Central America, and the Caribbean.

At the end of 1997, companies of all sizes listed on Canadian stock exchanges held interests in over 1300 mineral properties in the region. Since 1996, the total number of mineral properties held there by Canadian companies has exceeded the number held in the United States.

Mexico

In 1997, the larger-company mineral exploration market in Mexico was valued at over \$250 million, or roughly 5% of the \$5.5 billion larger-company market worldwide. Two dozen of the larger Canadian-based companies planned to spend a total of more than \$125 million in that country, equivalent to half the market.

Figure 8
Canadian Mineral Property Portfolio in Mexico, 1991-97 –
States Accounting for 95% of Canadian Holdings in 1997
 Companies of all Sizes Listed on Canadian Stock Exchanges



Source: Natural Resources Canada, based on *MIN-MET CANADA* database, ROBERTSON INFO-DATA Inc., Vancouver, British Columbia, and used under licence.

Mexico remains, by far, the country of Latin America where Canadian companies are the most active. During 1994, there was a significant increase in the average size of the mineral property portfolio held in that country by Canadian companies of all sizes listed on Canadian stock exchanges.⁵ At the end of 1994, these companies held interests in projects in at least half of Mexico's 31 states. At the end of 1997, there were 125 such companies in Mexico with projects in 19 states (Figure 8).

Farallon Resources Ltd. planned the largest Canadian exploration program in Mexico during 1997. That company planned to spend its entire budget of \$25 million on the Campo Morado gold-silver project located in the state of Guerrero.

South America

In 1997, the larger-company mineral exploration market in South America was valued at about \$1.2 billion, or over 20% of the \$5.5 billion larger-company market worldwide. More than 100 of the larger Canadian-based companies planned to spend \$480 million in total in the region, equivalent to more than 40% of the market. These companies held the dominant share in Argentina, Bolivia, Chile, Colombia, Peru and Uruguay.

Seven Canadian-based companies planned the largest exploration programs in four countries of South America: Essex Resource Corporation and Orvana Minerals Corp. in Bolivia; Bema Gold Corporation and Barrick in Chile; Bolivar Goldfields Ltd. and Latingold Ltd. in Colombia; and Rea Gold Corporation in Uruguay.

At the end of 1997, at least 280 companies of all sizes listed on Canadian stock exchanges held more than 900 mineral properties throughout South America. They held more than 150 properties in Peru, and more than 100 in each of Chile, Argentina and Venezuela (Figure 9).

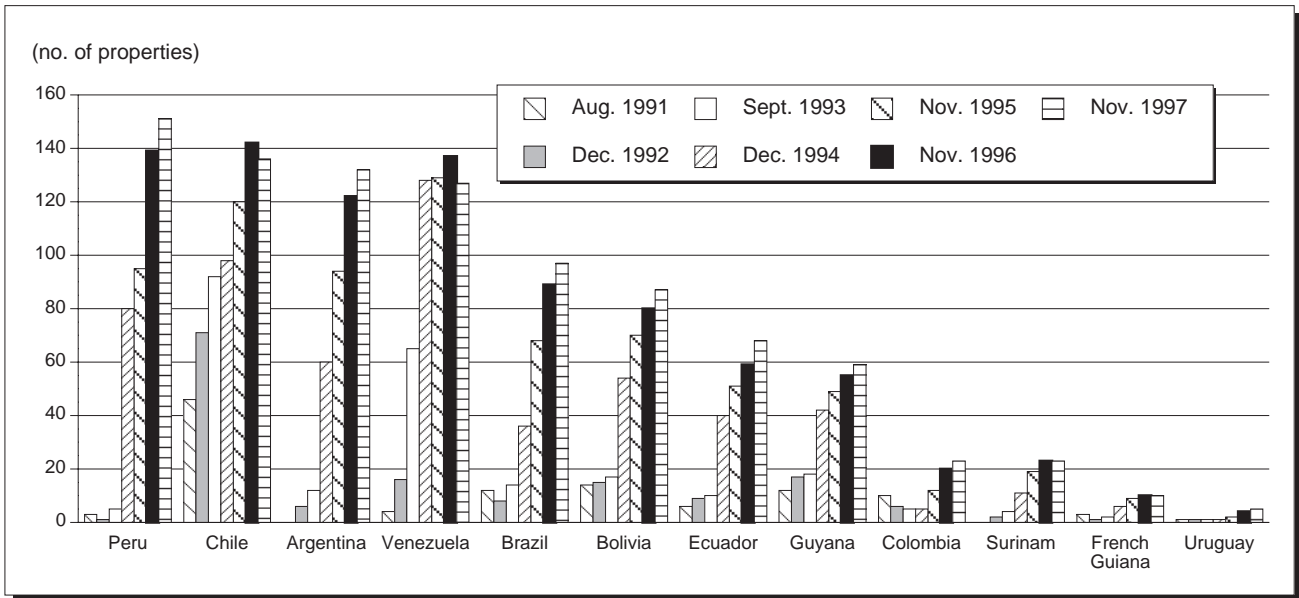
Central America

In 1997, the larger-company mineral exploration market in Central America was valued at about \$70 million, or 1% of the \$5.5 billion larger-company market worldwide. Two dozen of the larger Canadian-based companies planned to spend a total of \$58 million in the region, equivalent to roughly 90% of the market. They held the dominant share in Costa Rica, El Salvador, Guatemala, Honduras, Nicaragua and Panama.

In 1997, ten Canadian-based companies planned the largest programs in five countries of Central America: Placer Dome and Inmet Mining Corporation in Costa Rica; Kinross Gold Corporation in El Salvador; Tombstone Explorations Co. Ltd. in Guatemala; Breakwater Resources Ltd., Geomaque Explorations Ltd., and Greenstone Resources Ltd. in Honduras; and Tiomin Resources Inc., Teck Corporation, Madison Enterprises Corp. and Inmet in Panama.

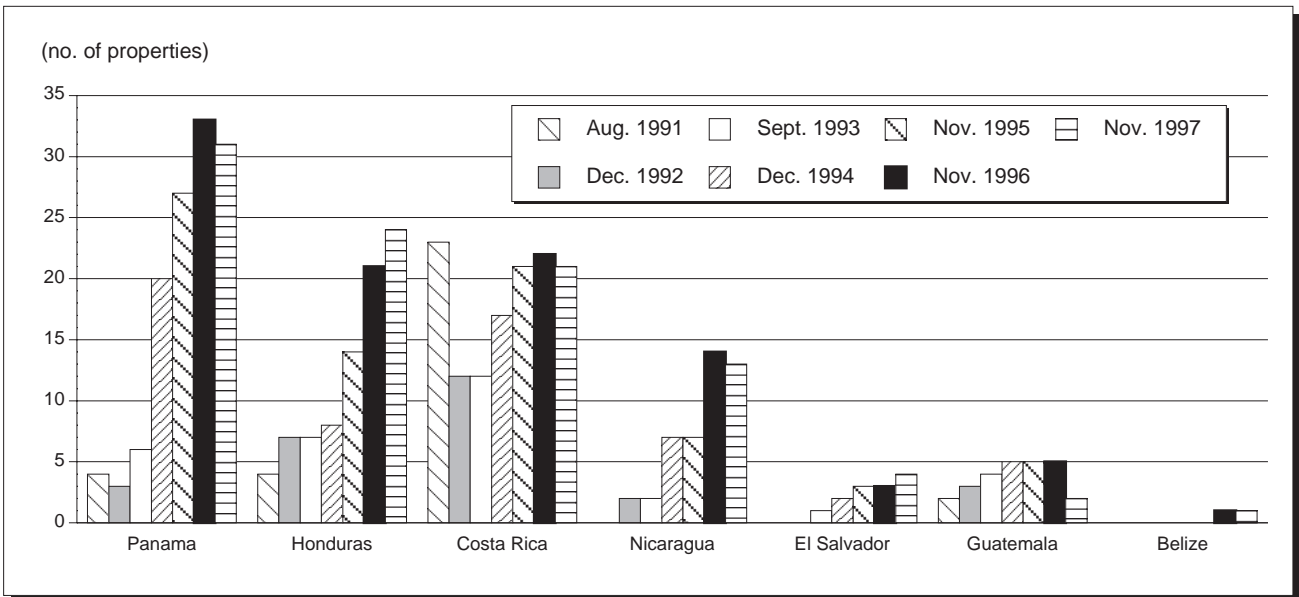
At the end of 1997, companies of all sizes listed on Canadian stock exchanges held almost 100 mineral properties throughout Central America. They held 20 or more in each of Panama, Honduras and Costa Rica (Figure 10).

Figure 9
Canadian Mineral Property Portfolio in South America, by Country, 1991-97
 Companies of all Sizes Listed on Canadian Stock Exchanges



Source: Natural Resources Canada, based on MIN-MET CANADA database, ROBERTSON INFO-DATA Inc., Vancouver, British Columbia, and used under licence.

Figure 10
Canadian Mineral Property Portfolio in Central America, by Country, 1991-97
 Companies of all Sizes Listed on Canadian Stock Exchanges



Source: Natural Resources Canada, based on MIN-MET CANADA database, ROBERTSON INFO-DATA Inc., Vancouver, British Columbia, and used under licence.

Caribbean

In 1997, the larger-company mineral exploration market in the Caribbean was valued at about \$25 million. The larger Canadian-based companies planned to spend about \$15 million there, equivalent to roughly 60% of the market. Canadian companies held the dominant share in Cuba and Haiti. MacDonald Mines Exploration Ltd., Holmer Gold Mines Limited and KWG Resources Inc. planned the largest exploration programs in these two countries.

At the end of 1997, companies of all sizes listed on Canadian stock exchanges held about 40 mineral properties in the Caribbean, about two thirds of them in Cuba (Figure 11).

Europe and the Former Soviet Union

In 1997, the larger-company mineral exploration market in Europe and the FSU was valued at about \$270 million (Figure 3), or roughly 5% of the \$5.5 billion larger-company market worldwide. The larger Canadian-based companies planned to spend \$135 million there, equivalent to half the market. At the end of 1997, 70 companies of all sizes listed on Canadian stock exchanges held over 200 mineral properties in the region.

Western Europe

In 1997, the larger-company mineral exploration market in western Europe was valued at over

\$100 million, or about 2% of the \$5.5 billion larger-company market worldwide. The larger Canadian-based companies planned to spend over \$55 million, equivalent to more than half the market. They held the dominant share in Finland, Greenland, Ireland and Sweden.

In 1997, four Canadian-based companies planned the largest programs for two countries of western Europe: Dia Met Minerals Ltd. and Aber Resources in Greenland, and Boliden Limited and William Resources Inc. in Sweden.

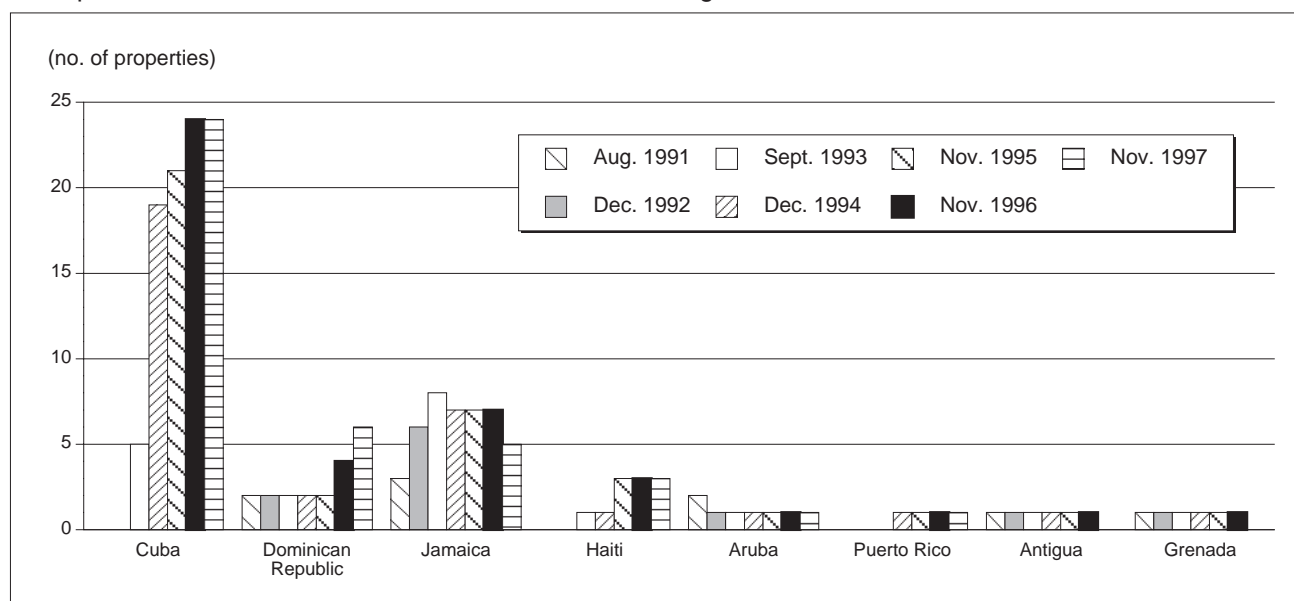
At the end of 1997, companies of all sizes listed on Canadian stock exchanges held almost 90 mineral properties in western Europe. They held more than 10 in each of Greenland and the United Kingdom (Figure 12).

Eastern Europe

In 1997, the larger-company mineral exploration market in eastern Europe was valued at \$40 million, or roughly 1% of the \$5.5 billion larger-company market worldwide. The larger Canadian-based companies planned almost all of the programs in the region.

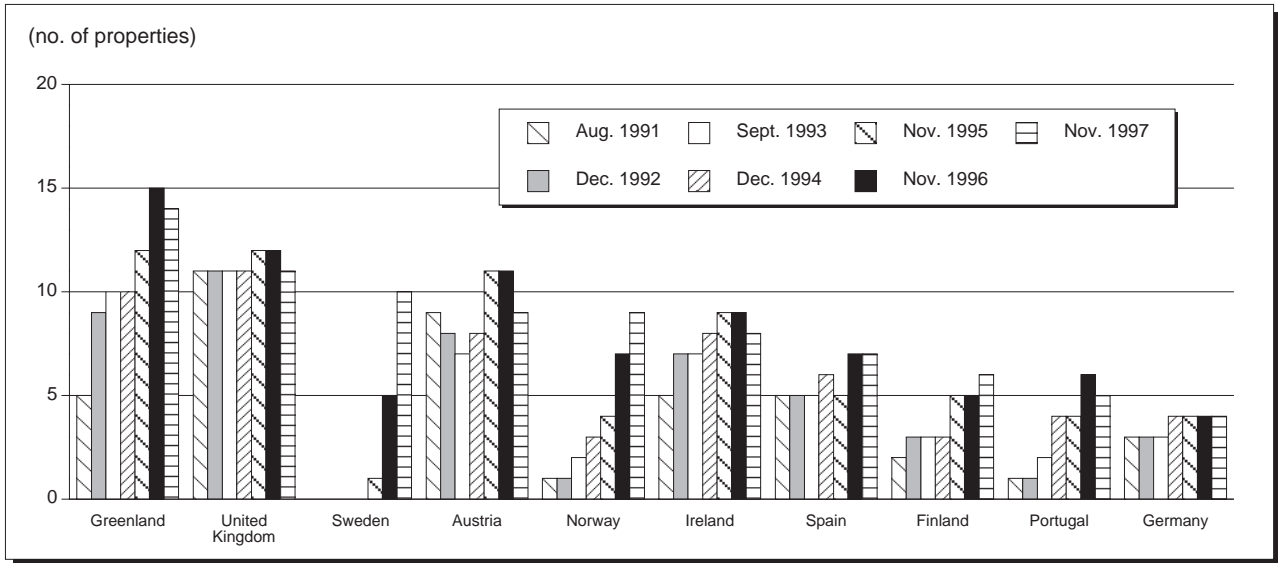
Five Canadian-based companies planned large programs in eastern Europe: TVX Gold Inc. in Greece; Argosy Mining Corp. in Slovakia; and Inco Limited, Cominco and Eldorado Gold Corporation in Turkey.

Figure 11
Canadian Mineral Property Portfolio in the Caribbean, by Country, 1991-97
Companies of all Sizes Listed on Canadian Stock Exchanges



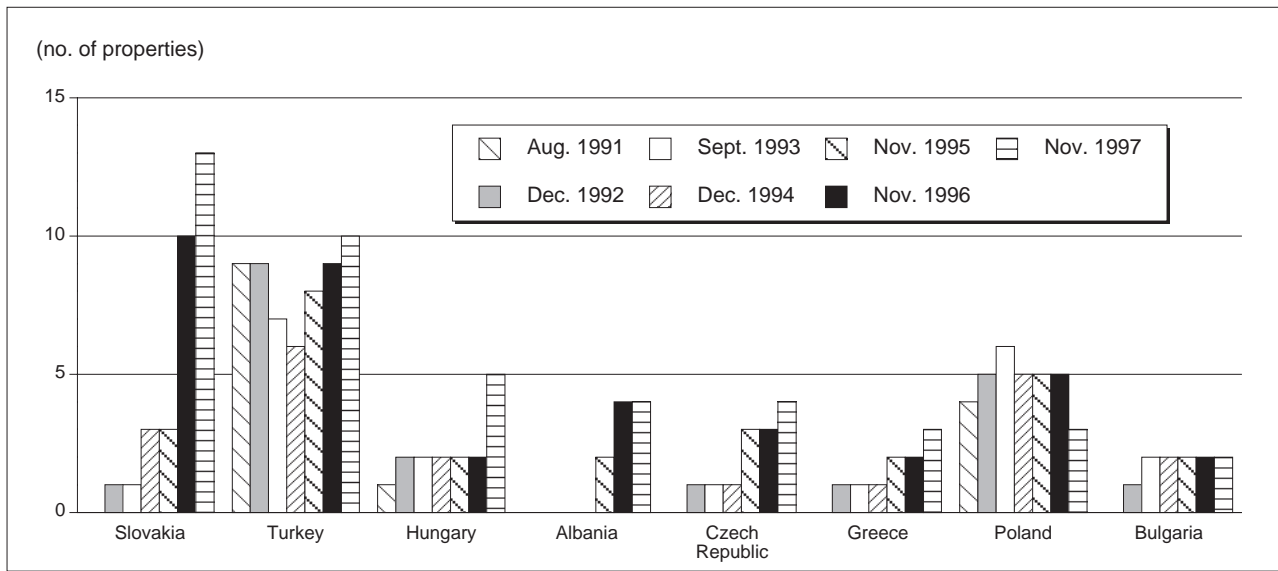
Source: Natural Resources Canada, based on MIN-MET CANADA database, ROBERTSON INFO-DATA Inc., Vancouver, British Columbia, and used under licence.

Figure 12
Canadian Mineral Property Portfolio in Western Europe, 1991-97 –
Countries Accounting for 95% of Canadian Holdings in 1997
 Companies of all Sizes Listed on Canadian Stock Exchanges



Source: Natural Resources Canada, based on MIN-MET CANADA database, ROBERTSON INFO-DATA Inc., Vancouver, British Columbia, and used under licence.

Figure 13
Canadian Mineral Property Portfolio in Eastern Europe, by Country, 1991-97
 Companies of all Sizes Listed on Canadian Stock Exchanges



Source: Natural Resources Canada, based on MIN-MET CANADA database, ROBERTSON INFO-DATA Inc., Vancouver, British Columbia, and used under licence.

At the end of 1997, companies of all sizes listed on Canadian stock exchanges held about 40 mineral properties in eastern Europe. In Slovakia alone, they held about one dozen (Figure 13).

Former Soviet Union

In 1997, the larger-company mineral exploration market in the FSU was valued at over \$100 million, or 2% of the \$5.5 billion larger-company market worldwide. The larger Canadian-based companies planned to spend almost \$40 million in these countries. They held the dominant share in Russia.

Since the early 1990s, there has been growing Canadian interest in participating in mineral opportunities in the FSU. At the end of 1997, there were almost 40 companies of all sizes listed on Canadian stock exchanges with interests in 65 mineral properties in seven countries of the FSU (Figure 14). The current strategy of most of these companies appears to be to target a single country.

Russia is by far the country of the FSU where Canadian companies are the most active. In 1997, the larger Canadian-based companies planned to spend almost \$30 million on exploration in that country. The number of properties held there by companies of all sizes listed on Canadian stock exchanges increased significantly starting in 1996 and now stands at almost 40. At the end of 1997, there were at least a dozen Canadian companies active in Russia. Gold and, to a lesser extent, diamonds are the main exploration targets of Canadian companies there.

Kazakstan also is becoming increasingly attractive to Canadian companies. During 1997, the portfolio of mineral properties held in that country by companies of all sizes listed on Canadian stock exchanges doubled to about two dozen.

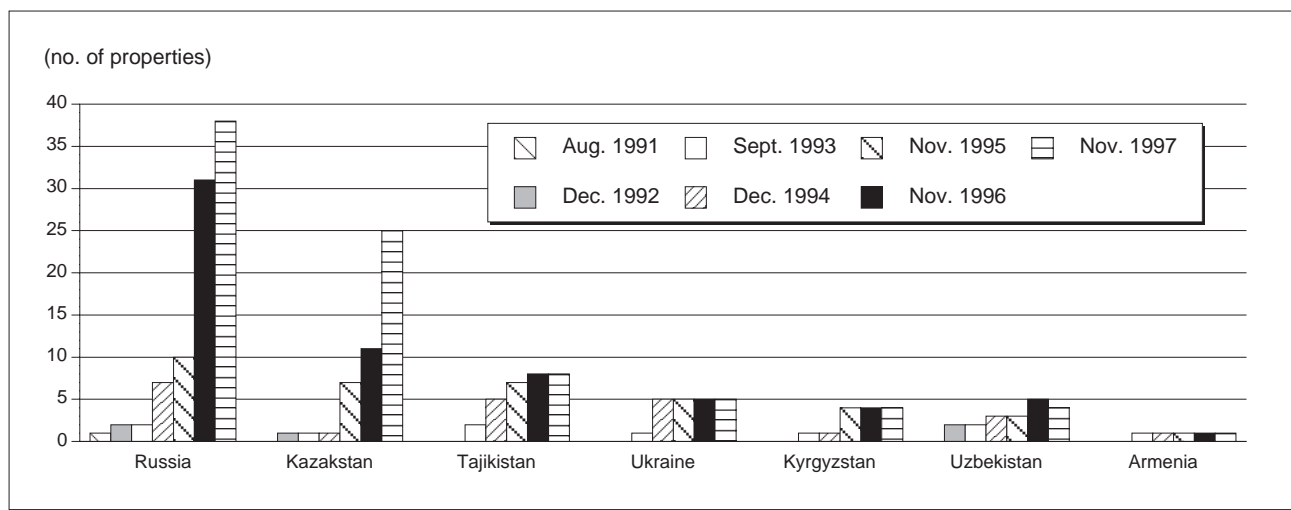
Africa and the Middle East

In 1997, the larger-company mineral exploration market in Africa and the Middle East was valued at about \$920 million (Figure 3), or 16% of the \$5.5 billion larger-company market worldwide. The larger Canadian-based companies planned to spend over \$265 million in Africa, equivalent to about 30% of the market on that continent. In addition, they planned to spend \$10 million in the Middle East.

In 1997, the budgets of the larger Canadian-based companies for Africa were more than double those of 1996, and more than five times those of 1995. These companies held the dominant share of the market in Angola, Botswana, Burkina Faso, Chad, the Democratic Republic of the Congo (Zaire), Côte d'Ivoire, Lesotho, Niger, Sierra Leone and Swaziland.

During 1997, 14 of the larger Canadian-based companies each planned mineral exploration programs in Africa valued at over \$15 million. Tenke Mining Corp. planned to spend almost \$29 million on the appraisal and study of the production feasibility of its Fungurume copper-cobalt deposit in the Democratic Republic of the Congo. Sutton Resources Ltd. planned to spend much of its \$23 million African budget on its Bulyanhulu gold deposit in Tanzania. SouthernEra planned to spend about \$22 million, mainly on diamond projects in South Africa and

Figure 14
Canadian Mineral Property Portfolio in the Former Soviet Union, by Country, 1991-97
Companies of all Sizes Listed on Canadian Stock Exchanges



Source: Natural Resources Canada, based on MIN-MET CANADA database, ROBERTSON INFO-DATA Inc., Vancouver, British Columbia, and used under licence.

Angola. Emerging Africa Gold Inc. planned to spend more than \$8 million on gold projects in Guinea.

Between 1992 and 1997, the number of mineral properties held in Africa by companies of all sizes listed on Canadian stock exchanges grew at an average annual compound rate of 60%. As a result, at the end of 1997, some 180 of these companies held almost 500 properties in 29 countries there. They held about 100 in Ghana alone, about 70 in Tanzania, and 40 or more in each of Zimbabwe, South Africa and Burkina Faso (Figure 15).

Although gold is the primary target of Canadian companies in Africa, there is nonetheless a considerable variety in the mineral commodities that they seek there.⁶ Some of the commodities of interest to Canadians on that continent are not currently produced or are not widely explored in Canada.

Asia-Pacific

In 1997, the larger-company exploration market in Asia-Pacific was valued at about \$1.6 billion (Figure 3), or roughly 30% of the \$5.5 billion larger-company market worldwide. The Asia-Pacific market is now as large as the one in Latin America and the Caribbean. The larger Canadian-based companies planned to spend about \$230 million in Asia-Pacific, equivalent to about 15% of the market. They held the dominant share in East Asia, and an equal and dominant share in Southeast Asia with Australian-based companies.

At the end of 1997, there were 150 companies of all sizes listed on Canadian stock exchanges active in the region with interests in about 270 mineral properties.

Southeast Asia

In 1997, the larger-company mineral exploration market in Southeast Asia was valued at about \$550 million, or 10% of the \$5.5 billion larger-company market worldwide. The larger Canadian-based companies planned to spend about \$160 million, equivalent to almost 30% of the market. They held the dominant share in Papua New Guinea. In Indonesia alone, about 100 of the larger Canadian-based Canadian companies planned to spend about \$90 million, equivalent to 30% of the market.

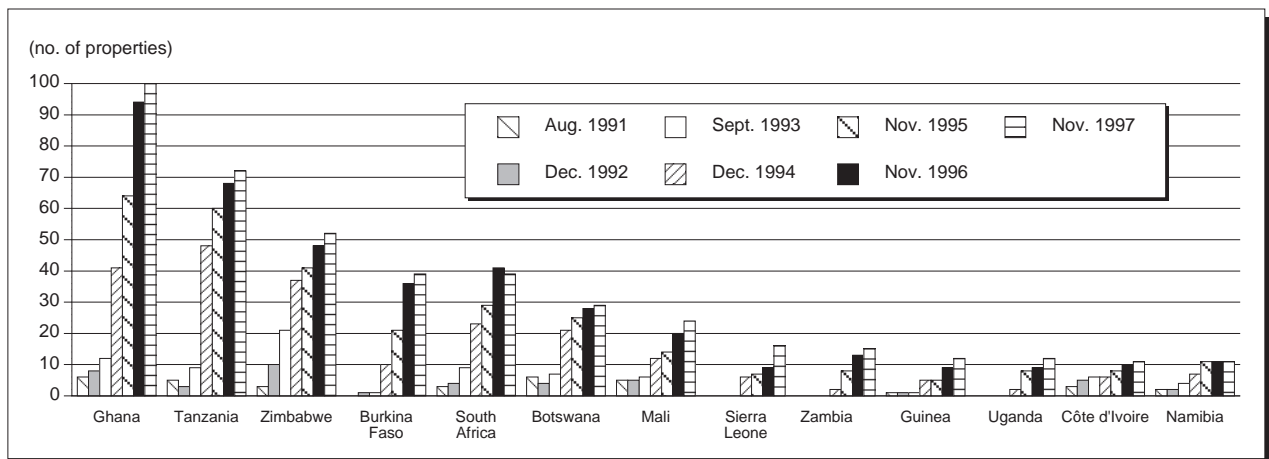
At the end of 1997, companies of all sizes listed on Canadian stock exchanges held about 280 mineral properties in the region. They held over 180 in Indonesia and about 50 in the Philippines⁷ (Figure 16).

East Asia

In 1997, the larger-company mineral exploration market in east Asia, which includes China, Japan, Mongolia, Taiwan and the Republic of Korea, was valued at about \$50 million, or 1% of the \$5.5 billion larger-company market worldwide. The larger Canadian-based companies planned to spend roughly \$30 million, equivalent to more than half the market. They held the dominant share in China and Mongolia.

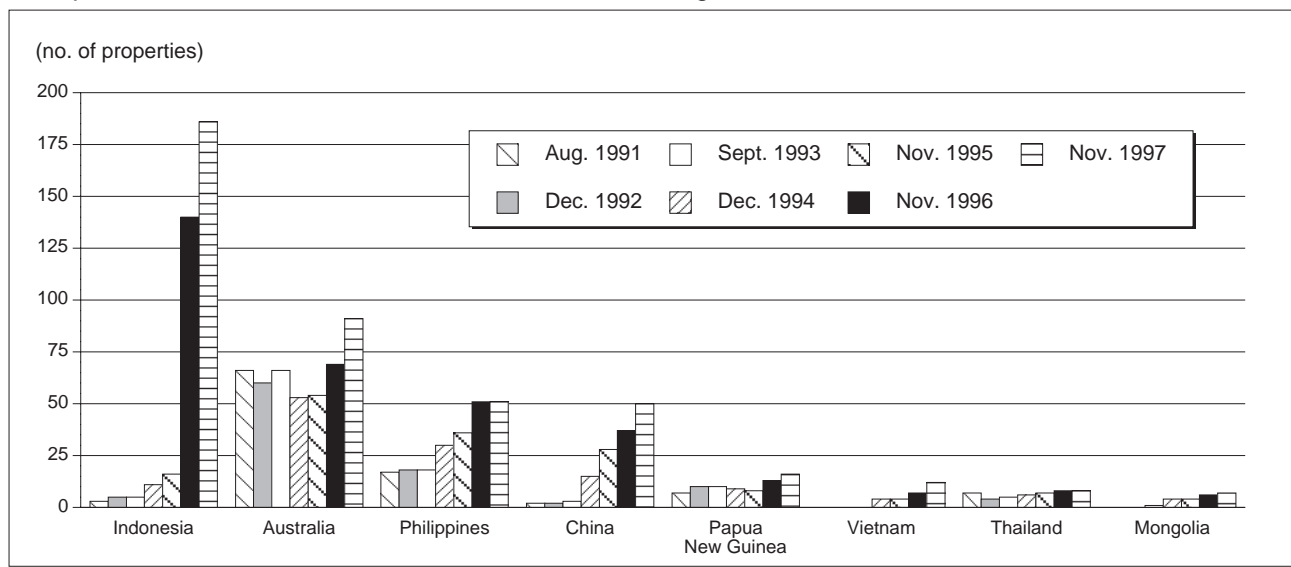
Over the past four years, China has become increasingly attractive to Canadian mining companies. In late 1997, there were 30 companies of all sizes listed on Canadian stock exchanges with interests in 50 mineral properties in that country (Figure 16). About half of their projects involve gold. The other half involves copper-lead-zinc and a variety of other targets including diamonds, rare earths and zeolites.

Figure 15
Canadian Mineral Property Portfolio in Africa, 1991-97 –
Countries Accounting for 80% of Holdings in 1997
Companies of all Sizes Listed on Canadian Stock Exchanges



Source: Natural Resources Canada, based on MIN-MET CANADA database, ROBERTSON INFO-DATA Inc., Vancouver, British Columbia, and used under licence.

Figure 16
Canadian Mineral Property Portfolio in Asia-Pacific, 1991-97 –
Countries Accounting for 95% of Canadian Holdings in 1997
 Companies of all Sizes Listed on Canadian Stock Exchanges



Source: Natural Resources Canada, based on *MIN-MET CANADA* database, ROBERTSON INFO-DATA Inc., Vancouver, British Columbia, and used under licence.

South Pacific

In 1997, the larger-company exploration market in the South Pacific was valued at almost \$970 million, or roughly 18% of the \$5.5 billion larger-company market worldwide. Australia alone accounted for \$920 million, or 95% of that market.

The larger Canadian-based companies planned to spend about \$40 million in the region, about three quarters of it in Australia and the balance in the Solomon Islands. In 1997, the larger Canadian-based companies held about 3% of the Australian market.

At the end of 1997, companies of all sizes listed on Canadian stock exchanges held over 90 properties in Australia (Figure 16).

OUTLOOK

During 1996 and 1997, a record amount of equity financing was raised in Canada for Canadian exploration companies. As a result, these companies had the capital to conduct, during 1997, more mineral exploration programs worldwide than those of any other nation.

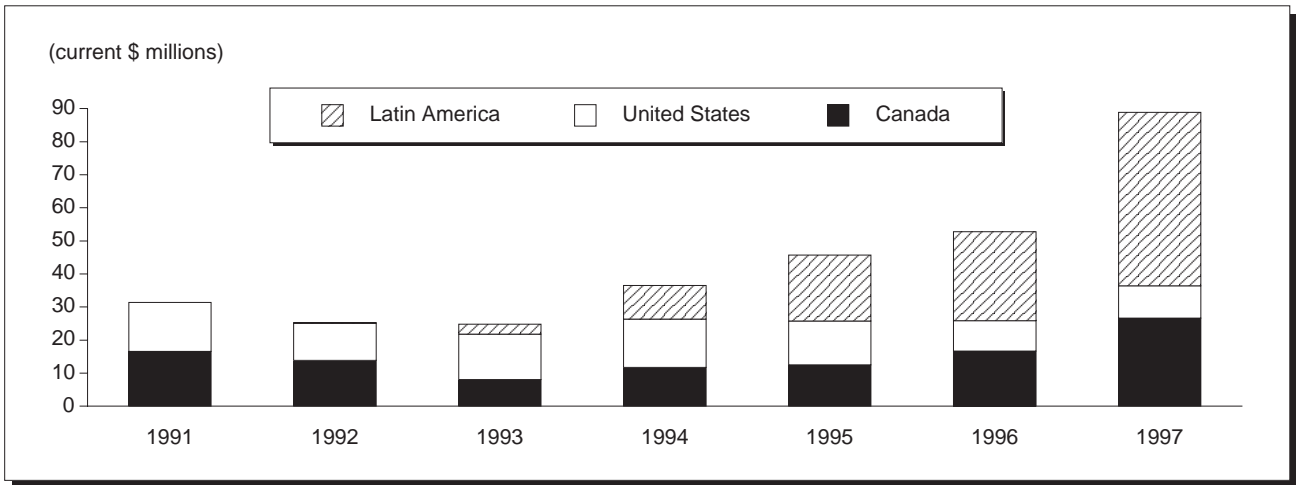
Canadian expertise at raising risk capital from investors in Canada, the United States, Europe, Asia and elsewhere has facilitated the penetration by Canadian companies of the exploration market

around the world. As a result, Canadian companies have diversified their portfolio of mineral projects to well over 100 countries. They conduct more than one third of the world's programs for precious-metal, base-metal and diamond exploration, and they carry out the dominant share of exploration activity in Canada, Mexico, South America, Central America, Europe and the FSU. Nonetheless, Canada remains the country where they are, by far, the most active.

Although exploration expenditures in Canada have shown some growth since the early 1990s, Canada's domestic share of the worldwide market for mineral exploration has fallen from 18% in 1992 to 11% in 1997. However, Canada's standing as a destination for exploration investment from worldwide sources remains remarkable given the mammoth growth that has occurred since the early 1990s in mineral exploration activity in many developing countries.

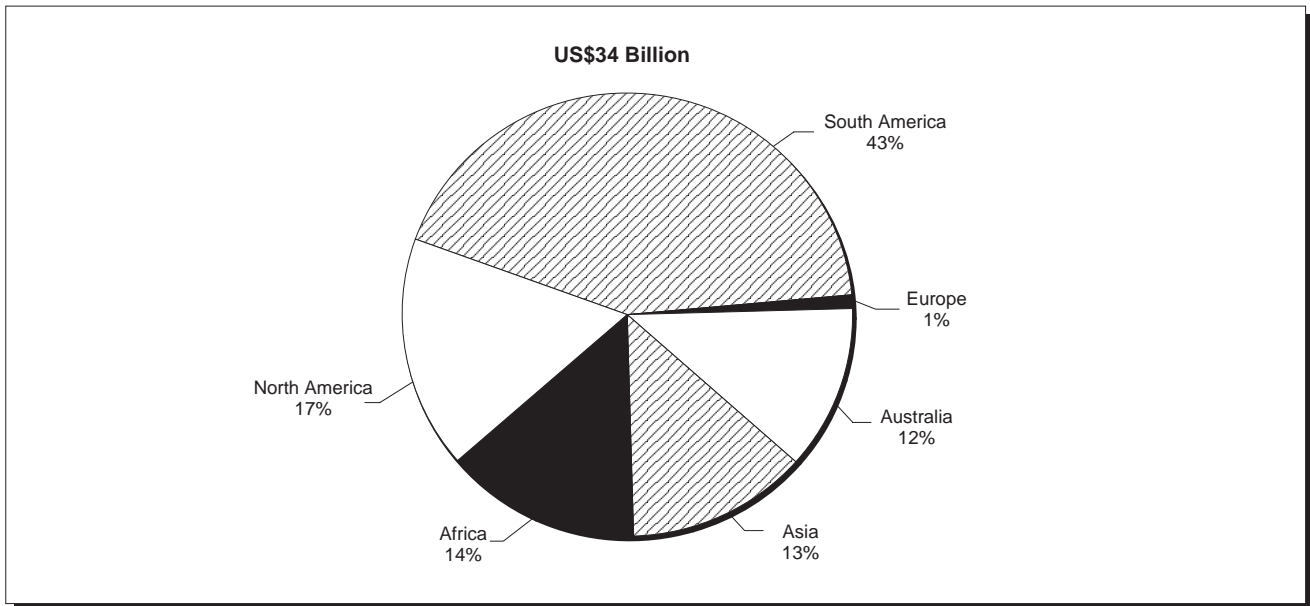
Canadian companies have a vast number of grass-roots, deposit-appraisal, feasibility-study, construction and production projects around the world. As a result, Canadian suppliers of all types of goods and services are experiencing unprecedented opportunities to make further gains in international markets. While the mineral projects of Canadian companies are helping strengthen the economies of developing countries, they are also creating jobs for Canadians, in both Canada and abroad, in industries related directly to mining (Figure 17) as well as in other industries that are related only indirectly.

Figure 17
Major Drilling Group International Inc.
Revenues by Geographic Market Segment, Year Ending April 30, 1991-97



Source: Natural Resources Canada, based on company annual reports.
 Note: The company that is based in Moncton, New Brunswick, completed an initial public offering in March 1995.

Figure 18
Worldwide Mine Construction Projects Planned as at Mid-1997



Source: Natural Resources Canada, based on page 3 of the *Mining Journal*, August 1, 1997.

In mid-1997, new mines under construction and those expected to be built in the near future around the world were valued at some US\$34 billion (Figure 18). At the time of writing in late December 1997, there was still plenty of momentum in mineral exploration and development around the world. However, investor uncertainty created by the decline in the price of some mineral commodities, by a number of corporate scandals, and by economic problems in Asia has depressed exploration finance markets.

To what extent exploration programs will have fallen short of budgets during 1997 because of investor uncertainty remains to be seen. However, it is clear that financing new exploration programs was becoming increasingly difficult as 1997 progressed.

As working capital becomes depleted, many of the smaller companies will be forced to curtail their exploration and development plans until financial markets recover. Those companies that have no substantial revenues from production will be especially vulnerable. The incidence of restructuring, issuer bids for their own stock, adoption of "poison-pill" provisions, mergers and acquisitions, as well as joint ventures between large companies with sufficient working capital and smaller companies with properties of superior mineral potential, will likely accelerate for the foreseeable future.

ENDNOTES

¹ Most of the information on the larger-company exploration market worldwide is based on *Corporate Exploration Strategies: A Worldwide Analysis*, which is published annually by the Metals Economics Group, Halifax, Nova Scotia (tel. (902) 429-2880).

² Keith J. Brewer and André Lemieux, *Canada's Global Position in Mining - Canadian Financing of the International Mining Industry*, Metals Finance 4th International Conference, Toronto, May 7-9, 1997, Natural Resources Canada, Ottawa, 53 pp. (tel. (613) 995-4577).

³ Most of the information on the mineral property portfolio of companies of all sizes listed on Canadian stock exchanges is derived from the *MIN-MET CANADA* database, ROBERTSON INFO-DATA Inc., Vancouver, British Columbia (tel. (604) 683-2037).

⁴ For trends in mineral deposit appraisal activity in Canada over the interval 1982-97, and for a list of projects at the deposit appraisal stage in early 1997, see André Lemieux, "Canada's Global Mining Presence," in the 1996 edition of the *Canadian Minerals Yearbook*, Natural Resources Canada, Ottawa, pp. 8.9 and 8.11-8.22.

⁵ For more detailed information on the penetration of the Mexican mineral exploration market by Canadian companies, see André Lemieux, "Canadian Mining Activity in Mexico," *World Mineral Notes*, Vol. 11, No. 1, March 1995, Natural Resources Canada, Ottawa, pp. 23-34.

⁶ For an overview of Canadian mineral exploration in Africa during 1995, see André Lemieux, "Canada and the Globalization of the Mining Industry," *Mineral Industry Review*, Fall 1996, Natural Resources Canada, Ottawa, pp. 32 and 33.

⁷ The *Mining Journal*, London (January 9, 1998, p. 24) reported that, according to the Philippines Mines and Geoscience Bureau, total exploration expenditures in that country in 1997 were US\$120 million. Exploration expenditures in 1998 were expected to reach US\$200 million.

Note: Information in this review was current as at December 31, 1997.