

# Canada's Global Mining Presence

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## THE GLOBAL MARKET FOR EXPLORATION

Although it became considerably more difficult to raise risk capital during 1997 than during the previous year, exploration programs around the world for precious metals, base metals and diamonds were, in total, remarkably close to budget. In 1998, however, global exploration activity by companies of all sizes fell to an estimated \$5.0 billion (US\$3.5 billion) from \$7.0 billion (US\$5.1 billion) the previous year, or down by roughly 30%. Programs were reduced in most countries, but were postponed or abandoned entirely in some developing countries.

Global trends in worldwide mineral exploration are based largely on data for the world's larger companies,<sup>1</sup> defined here as those with annual exploration budgets greater than \$4 million (US\$3 million). In 1998, 182 companies planned to spend more than \$4 million on exploration, down from a record 279 in 1997. During 1998, the world's larger companies were expected to undertake programs with a combined value of \$4.0 billion (US\$2.8 billion), which represents over 80% of the global market for mineral exploration.

## LARGER CANADIAN-BASED COMPANIES

In 1996, mining companies listed on Canadian stock exchanges raised a record amount of capital.<sup>2</sup> As a result, the number of Canadian-based companies that planned to spend more than \$4 million on exploration around the world grew to a record 141 during 1997, up from 94 in 1996 and only 55 in 1995.

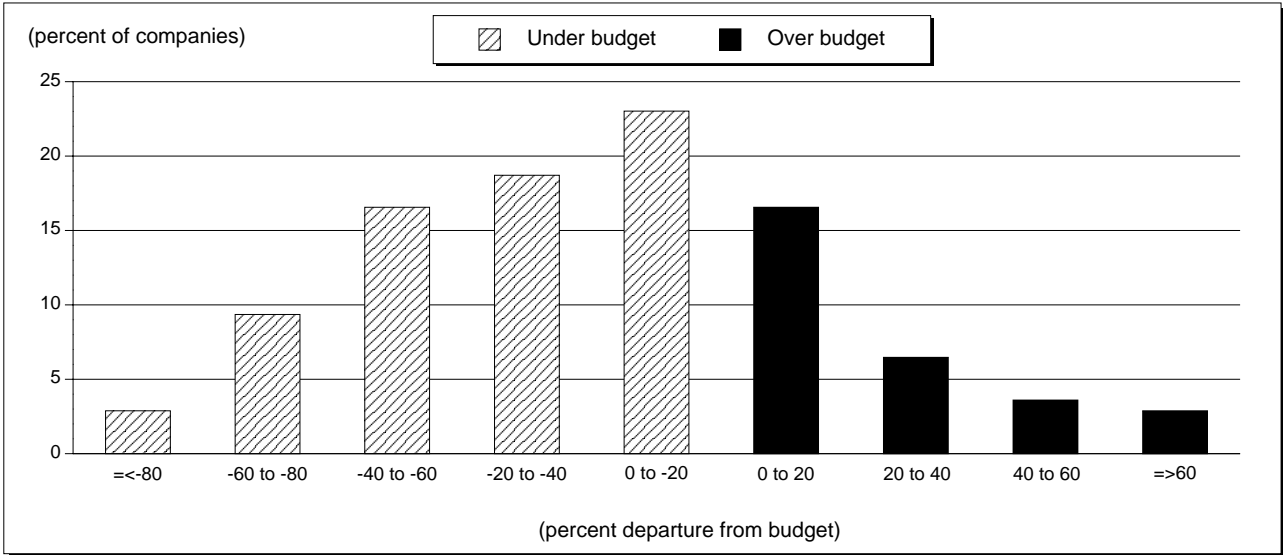
Nonetheless, during 1997, the larger Canadian-based companies underspent their exploration budgets, in aggregate, by \$160 million, or by about 8% less than they had planned (Figure 1). One third of them (94 companies) spent less than budgeted, while a little more than one quarter (37 companies) spent more than budgeted. Individual company departures from 1997 plans ranged from \$25 million under budget to \$34 million over budget. In general, companies that exceeded their program budgets during 1997 did so in response to new discoveries or other opportunities that arose during the year.

Many of the larger Canadian-based companies derive little or no substantial revenues from mineral production and, therefore, rely almost entirely on the stock market to finance their exploration programs. Because of investor uncertainty during 1997 and 1998, the number of Canadian-based companies that planned to spend more than \$4 million on exploration in 1998 decreased to 83. The total amount that these companies planned to spend on mineral exploration in both Canada and elsewhere around the world fell to \$1.3 billion in 1998 (Figure 2) from \$1.9 billion the previous year, or down by 34%. Nonetheless, during 1998, Canadian-based companies planned to undertake more than 30%, and the dominant share by far, of all the larger-company exploration programs around the world. In 1997, Canadian programs accounted for a record 35% of all worldwide mineral exploration activity.

Relatively fewer of the many companies that budgeted only somewhat more than \$4 million in 1997 were able to raise a similar amount for exploration in 1998. As a result, the average company budget for 1998 increased. In the case of the larger Canadian-based companies, the mean budget for 1998 increased to \$15.4 million and the median to \$7.1 million, up from \$13.7 million and \$6.4 million respectively the previous year.

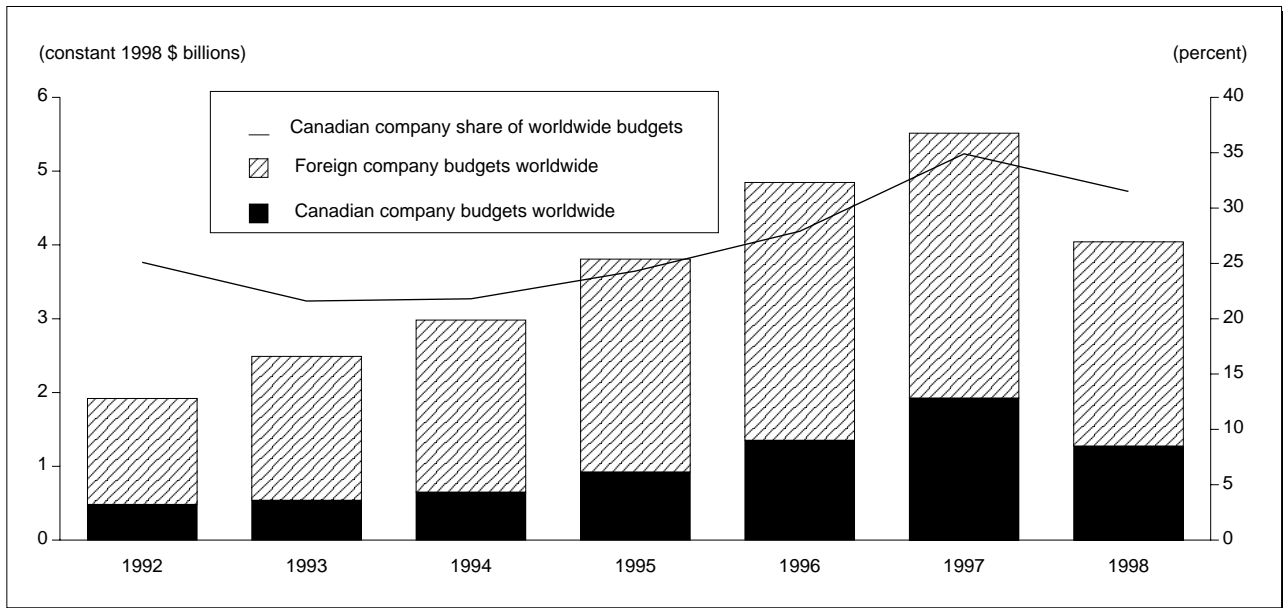
At the end of 1998, companies of all sizes listed on Canadian stock exchanges held interests in a portfolio of more than 6800 exploration or producing properties (Figure 3) located in Canada and in more than 100 countries around the world.<sup>3</sup> Most of this portfolio is at the exploration stage.

**Figure 1**  
**Departure of Global Exploration Expenditures from Budgets, 1997**  
 Canadian-Based Companies with Budgets of at Least \$4 Million (US\$3 Million)  
 for Precious-Metal, Base-Metal or Diamond Exploration



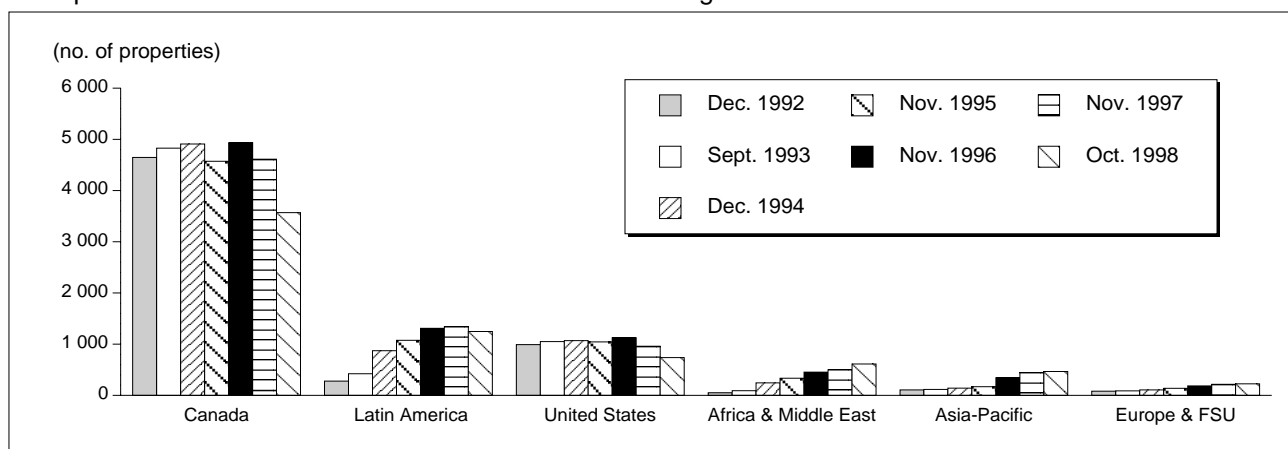
Source: Natural Resources Canada, based on *Corporate Exploration Strategies: A Worldwide Analysis*, Metals Economics Group, Halifax, Nova Scotia.  
 Note: During 1997, the aggregate expenditures of 139 larger Canadian-based companies were more than \$160 million or 8% under budget.

**Figure 2**  
**Exploration Budgets of the World's Larger Companies, by Origin, 1992-98**  
 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: The worldwide exploration budgets of companies that intended to spend less than \$4 million (US\$3 million) annually are excluded. The worldwide exploration budgets for other commodities such as uranium or industrial minerals are also excluded.

**Figure 3**  
**Canadian Mineral Property Portfolio Worldwide, by Region, 1992-98**  
 Companies of All Sizes Listed on Canadian Stock Exchanges



Source: Natural Resources Canada, based on *MIN-MET CANADA* database for 1992-97 and *Info-Mine* database for 1998, ROBERTSON INFO-DATA Inc., Vancouver, British Columbia, and used under licence.

## LARGER-COMPANY EXPLORATION MARKET IN CANADA

In 1998, the larger-company mineral exploration market in Canada was valued at \$440 million (Figure 4). The balance of the Canadian market is held mainly by smaller companies, the activities of which are not addressed specifically here. At the end of 1998, there were more than 3500 mineral properties with recent exploration activity in this country.<sup>4</sup>

In 1998, 66 of the world's larger domestic-based or foreign-based companies allocated budgets for exploration in Canada. Their aggregate budgets for 1998 for this country were down by \$155 million, or by more than 25%, compared with those for 1997. Nonetheless, almost 11% of the exploration programs of all the world's larger companies were destined for Canada (Figure 5), slightly more than in 1997. However, Canada's share of worldwide exploration activity has fallen gradually from about 18% in 1992 because of the mammoth increase in exploration activity that occurred in Latin America, Asia and Africa starting in the early 1990s.

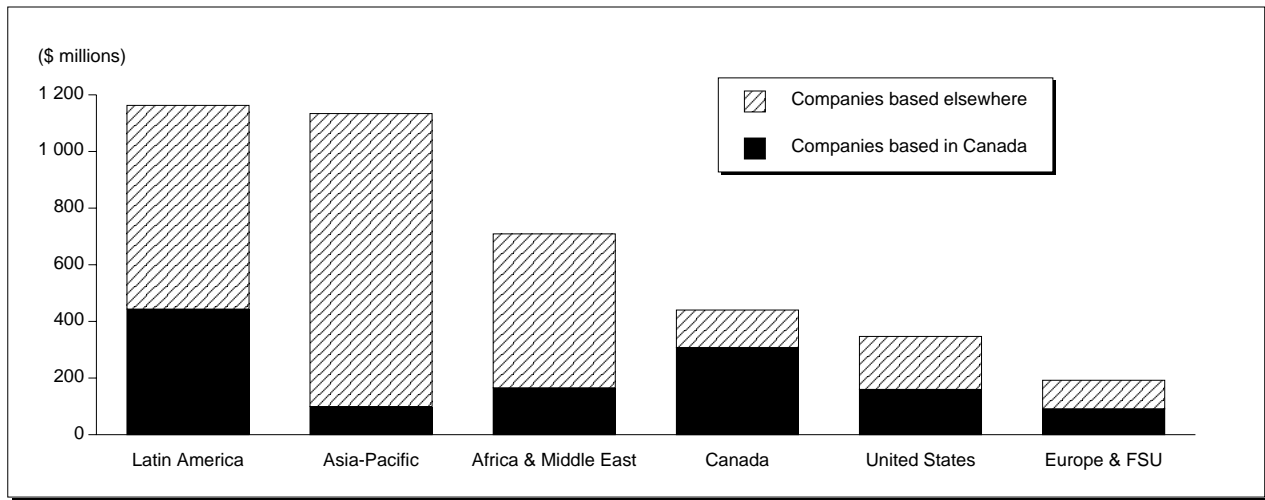
In 1998, 49 of the larger Canadian-based companies allocated over \$300 million for exploration in Canada. This represents a reduction of almost \$110 million, or 26%, from the \$417 million budgeted in 1997. Canadian-based companies control 70% of the larger-company market in Canada. Australia is the only other country where domestic companies control as large a share of their domestic larger-company mar-

ket for mineral exploration. In 1992, Canadian-based companies controlled 80% of the larger-company market in Canada but, with increasing globalization, their share has fallen gradually as foreign-based companies have increased their investment 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. Still, Canada remains the country where Canadian companies spend the most, by far, on mineral exploration (Figure 6).

During 1998, the larger foreign-based multinationals planned to spend over \$130 million on mineral exploration in Canada (Figure 5), or 30% of all exploration programs planned for this country. Compared with 1997, their budgets decreased by about one quarter. Nonetheless, their budgets are still considerably larger than the \$70 million budgeted in 1992, which represented less than 20% of all exploration programs then planned for Canada.

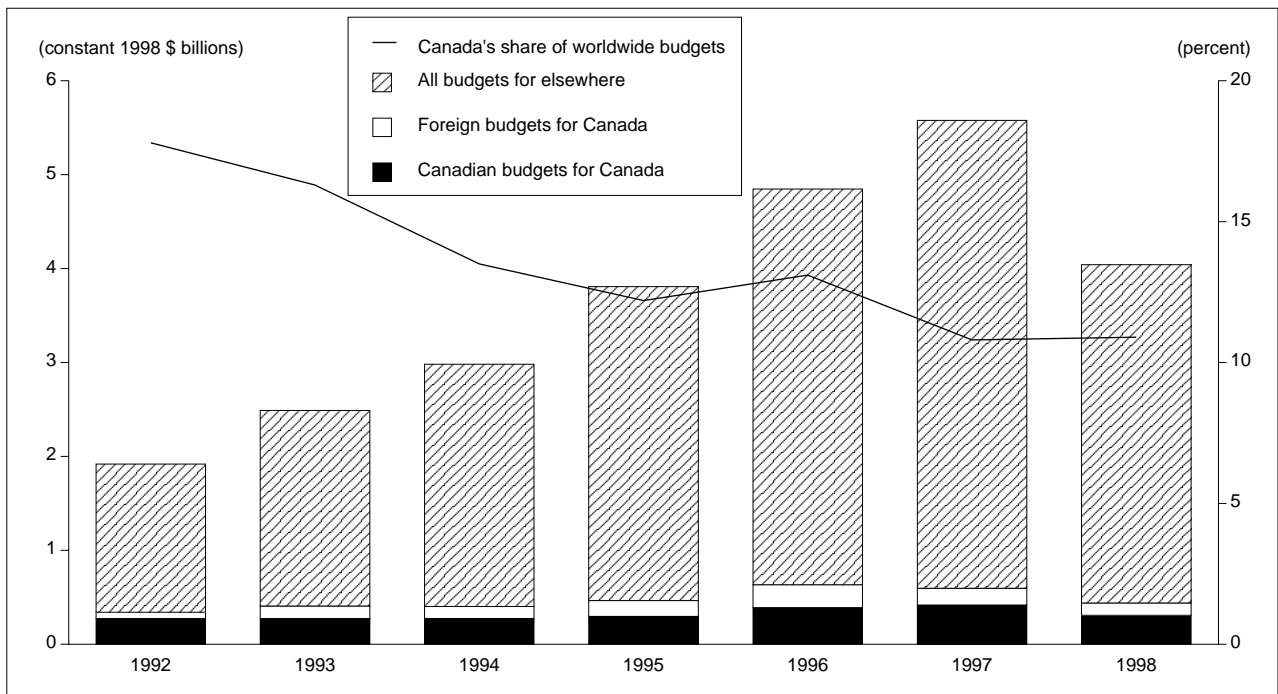
The larger foreign-based companies active in Canada include the Ashton Group, BHP Minerals Pty Ltd., QNI Ltd. and WMC Limited, all based in Australia; Battle Mountain Gold Company, Cyprus Amax Minerals Company, Echo Bay Mines Ltd., Freeport-McMoRan Copper & Gold, the Homestake Group, Newmont Gold Company, Phelps Dodge Corporation and Royal Oak Mines Inc., all based in the United States; Billiton Plc., the Minorco Group, the Outokumpu Group and the Rio Tinto Group, all based in Europe; the De Beers Group, based in South Africa; and Korea Zinc Co. Ltd.

**Figure 4**  
**Exploration Budgets of the World's Larger Companies for Selected Regions of the World, 1998**  
 Companies with Worldwide Budgets of at Least \$4 Million (US\$3 Million)  
 for Precious-Metal, Base-Metal or Diamond Exploration



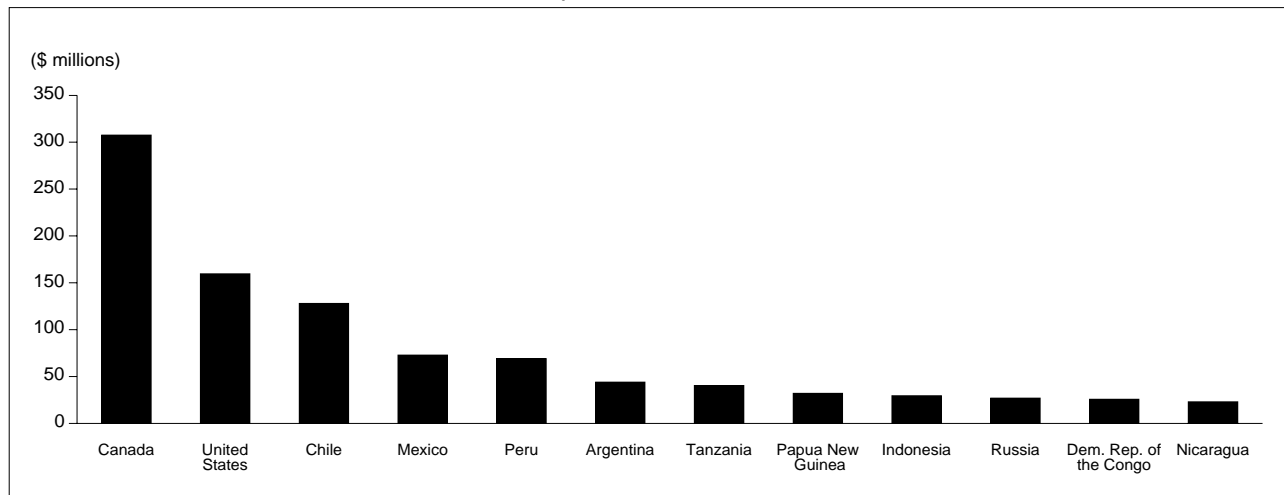
Source: Natural Resources Canada, based on *Corporate Exploration Strategies: A Worldwide Analysis*, Metals Economics Group, Halifax, Nova Scotia.  
 Notes: The worldwide exploration budgets of companies that intended to spend less than \$4 million (US\$3 million) annually are excluded. The worldwide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

**Figure 5**  
**Exploration Budgets of the World's Larger Companies for Canada and Elsewhere, 1992-98**  
 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: The worldwide exploration budgets of companies that intended to spend less than \$4 million (US\$3 million) annually are excluded. The worldwide exploration budgets for other commodities such as uranium or industrial minerals are also excluded.

**Figure 6**  
**Exploration Budgets of the Larger Canadian-Based Companies, 1998 –**  
**Countries Accounting for 80% of Canadian 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: The worldwide exploration budgets of companies that intended to spend less than \$4 million (US\$3 million) annually are excluded. The worldwide exploration budgets for other commodities such as uranium or industrial minerals are also excluded.

## LARGER CANADIAN-BASED COMPANIES ABROAD

In 1998, the larger Canadian-based companies planned to spend \$967 million on mineral exploration outside Canada (Figure 4). The proportion of their budgets allocated to foreign programs was almost 76% in 1998. That proportion peaked at over 78% in 1997, up from only 43% in 1992.

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 mid-1991, that ratio was 0.84 for Europe and the former Soviet Union (FSU), 0.80 for Latin America, 0.77 for Africa, and 0.67 for Asia-Pacific. By late 1998, it had increased to over 0.93 for Latin America and to 0.90 for both Africa and Asia-Pacific. In comparison, the ratio of exploration properties to the total number of properties held in Canada remained roughly constant at 0.96 between 1991 and 1997. In late 1998, it was 0.95.

At the end of 1998, companies of all sizes listed on Canadian stock exchanges held interests in a portfolio of almost 3300 mineral properties located abroad (Figure 3). Foreign properties now represent almost half of the total mineral property portfolio held by

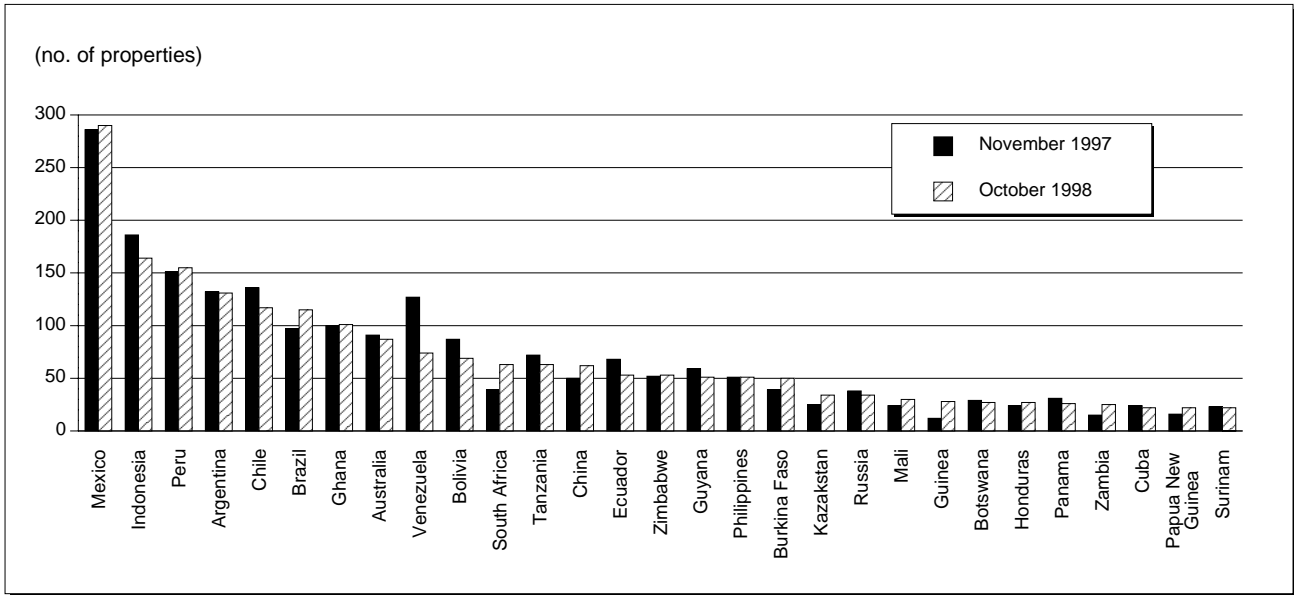
these companies, up from about 25% in 1992.<sup>5</sup> Between 1992 and 1998, their holdings of foreign mineral properties grew at an average annual compound rate of almost 14%. Apart from the United States, where companies of all sizes listed on Canadian stock exchanges have a substantial mining presence, roughly two dozen other nations, spread across the globe, account for 80% of the balance of their mineral property portfolio held abroad (Figure 7).

### United States

In 1998, the larger-company mineral exploration market in the United States was valued at \$350 million (Figure 4), or about 9% of the \$4.0 billion larger-company market worldwide. In spite of global retrenchment, over 30 of the larger Canadian-based companies planned to spend a total of about \$160 million in the United States, about the same as in 1997. Because companies based in other countries considerably reduced their exploration programs for the United States during 1998, Canadian-based companies increased their share of the larger-company exploration market in that country to 46%, up from 32% in 1997. The United States ranks second in the world as the country where Canadian companies are the most active.

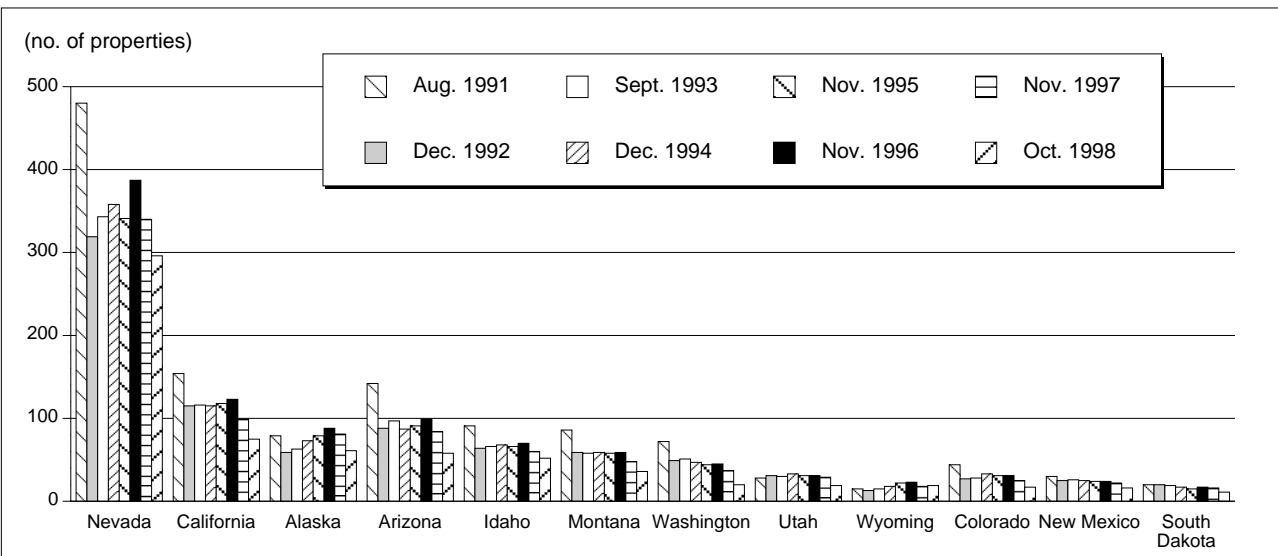
Canadian companies planned to spend almost \$40 million more than U.S. companies in the United States during 1998. As a result, they became the

**Figure 7**  
**Canadian Mineral Property Portfolio Abroad, 1997 and 1998 – Countries Accounting for 80% of Canadian Holdings Located Outside the United States in 1998**  
 Companies of all Sizes Listed on Canadian Stock Exchanges



Source: Natural Resources Canada, based on *MIN-MET CANADA* database for 1992-97 and *Info-Mine* database for 1998, ROBERTSON INFO-DATA Inc., Vancouver, British Columbia, and used under licence.

**Figure 8**  
**Canadian Mineral Property Portfolio in the United States, 1991-98 – States Accounting for 90% of Canadian Holdings in 1998**  
 Companies of all Sizes Listed on Canadian Stock Exchanges



Source: Natural Resources Canada, based on *MIN-MET CANADA* database for 1992-97 and *Info-Mine* database for 1998, ROBERTSON INFO-DATA Inc., Vancouver, British Columbia, and used under licence.

leading explorationists in that country. 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 11% since the early 1990s.

In late 1998, companies of all sizes listed on Canadian stock exchanges held over 700 mineral properties in the United States (Figure 3). They had projects in 31 states, but mainly in the western part of the country in Nevada, California, Alaska, Arizona, Idaho, Montana, Washington, Utah, Wyoming, Colorado, New Mexico, and South Dakota (Figure 8). Nevada alone accounted for almost 300 of their mineral properties, or about 40% of the Canadian portfolio in the United States.

Although Canadian companies have expanded their activities considerably in 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 1998, the United States accounted for over 20% of all properties held abroad by these companies.

Of all the Canadian-based companies, Teck Corporation, Placer Dome Inc. and Barrick Gold Corporation planned the largest exploration programs in the United States during 1998. Together they planned to spend almost \$80 million there. Teck planned to spend much of its \$35 million budget for the United States on the Pogo (Stone Boy) gold deposit in Alaska. Placer Dome planned to spend much of its almost \$23 million budget for the United States on the Donlin Creek gold project in Alaska and on the Pipeline and South Pipeline gold projects located on the Battle Mountain-Eureka gold trend in Nevada. Barrick planned to spend over \$20 million, much of it on further exploration at the Betze-Post, Dee, Meikle and Pinson mines in Nevada.

## Latin America and the Caribbean

In 1998, the larger-company mineral exploration market in Latin America and the Caribbean was valued at \$1.2 billion (Figure 4), or almost 29% of the \$4.0 billion larger-company market worldwide. Latin America accounts for the largest concentration of Canadian mineral exploration activity. During 1998, the larger Canadian-based companies planned to spend over \$440 million there. However, this amount represents a decrease of more than \$250 million, or over 36%, compared with 1997.

In spite of significant decreases since 1997, 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 30% between 1992 and 1998. In 1998, these

companies held more than 38% of the larger-company market in the region, by far the largest share. In addition, they held the dominant share of the exploration activity in several countries in the region.

At the end of 1998, companies of all sizes listed on Canadian stock exchanges held interests in over 1200 mineral properties in the region. Since 1996, the total number of mineral properties held by Canadian companies in Latin America and the Caribbean has exceeded the number held in the United States (Figure 3).

## Mexico

In 1998, the larger-company mineral exploration market in Mexico was valued at over \$180 million, or 4.5% of the \$4.0 billion larger-company market worldwide. Twenty of the larger Canadian-based companies planned to spend, in total, more than \$70 million in that country, equivalent to 40% of the market, and the dominant share. Mexico ranks second as the country of Latin America and the fourth in the world where Canadian companies are the most active (Figure 6).

During 1994, there was a significant increase in the average size of the mineral property portfolio held in Mexico by companies of all sizes listed on Canadian stock exchanges.<sup>6</sup> At the end of 1998, these companies held interests in projects in 18 of the country's 31 states (Figure 9).

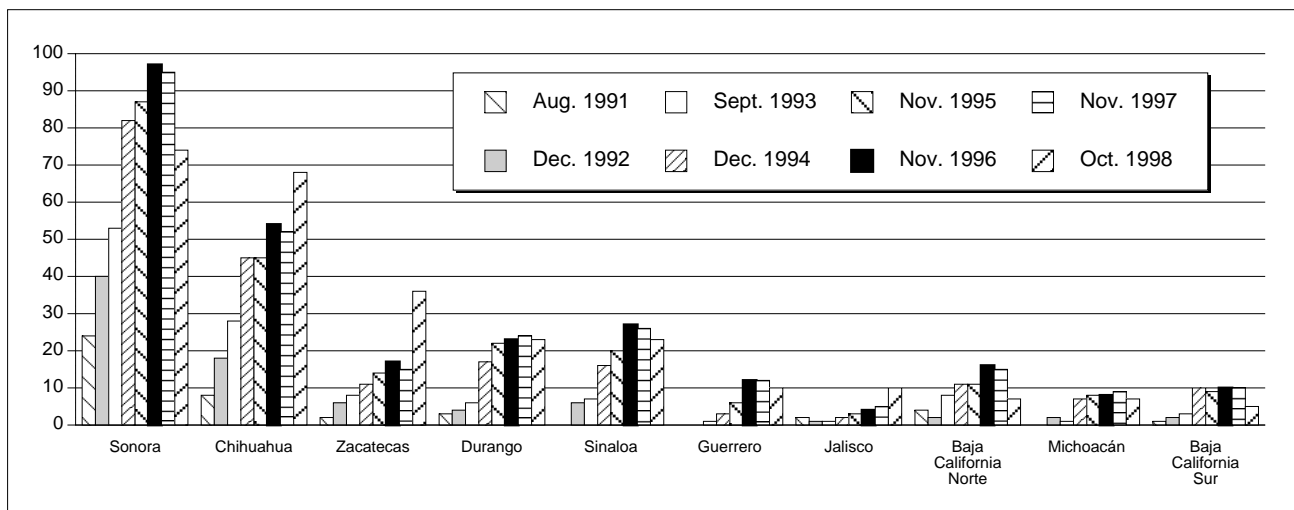
Cambior inc. planned the largest Canadian exploration program in Mexico during 1998. The company planned to spend over \$15 million there, most of it on its Cerro San Pedro gold-silver project.

## South America

In 1998, the larger-company mineral exploration market in South America was valued at \$850 million, or over 20% of the \$4.0 billion larger-company market worldwide. Thirty of the larger Canadian-based companies planned to spend about \$300 million in total in the region, equivalent to almost 35% of the market there. Canadian companies held the dominant share of the market in Argentina, Bolivia, Chile, Colombia, Guyana and Peru.

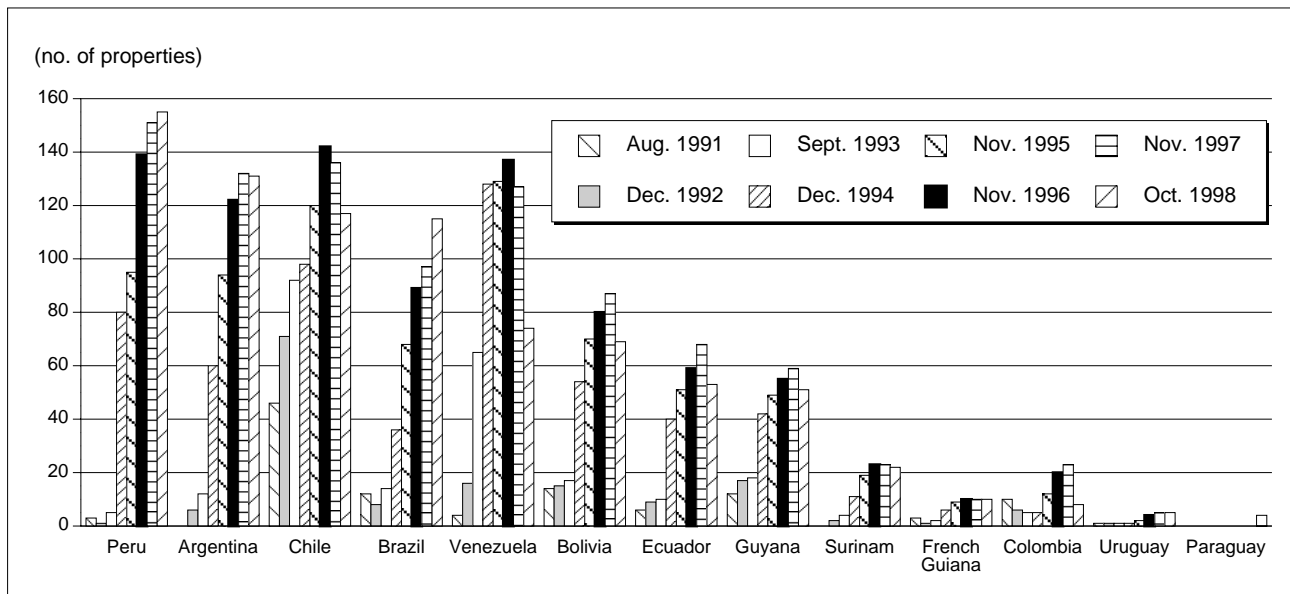
Chile is the country of South America where Canadian-based companies conduct the largest portion of their exploration programs (Figure 6). Chile also ranks third in the world as the country where Canadian companies are the most active. Placer Dome planned to spend a large part of its almost \$39 million budget for Chile on the Cerro Casale (Aldebaran) gold-copper project, while Barrick planned to spend about \$30 million on the Pascua gold project. Elsewhere in South America, Orvana Minerals Corporation planned to spend almost

**Figure 9**  
**Canadian Mineral Property Portfolio in Mexico, 1991-98 –**  
**States Accounting for 90% of Canadian Holdings in 1998**  
 Companies of all Sizes Listed on Canadian Stock Exchanges



Source: Natural Resources Canada, based on *MIN-MET CANADA* database for 1992-97 and *Info-Mine* database for 1998, ROBERTSON INFO-DATA Inc., Vancouver, British Columbia, and used under licence.

**Figure 10**  
**Canadian Mineral Property Portfolio in South America, by Country, 1991-98**  
 Companies of all Sizes Listed on Canadian Stock Exchanges



Source: Natural Resources Canada, based on *MIN-MET CANADA* database for 1992-97 and *Info-Mine* database for 1998, ROBERTSON INFO-DATA Inc., Vancouver, British Columbia, and used under licence.



\$8 million on the Don-Mario gold-copper deposit in Bolivia, Greystar Resources Ltd. planned to spend almost \$6 million in Colombia, and Cambior planned to spend over \$2 million at the Omai gold mine and the Hicks gold deposit in Guyana.

At the end of 1998, companies of all sizes listed on Canadian stock exchanges held more than 800 mineral properties throughout South America. They held more than 150 properties in Peru, and more than 100 in each of Argentina, Chile and Brazil (Figure 10).

### Central America

In 1998, the larger-company mineral exploration market in Central America was valued at about \$40 million, or 1% of the \$4.0 billion larger-company market worldwide. One dozen of the larger Canadian-based companies planned to spend almost all of that amount. They held the dominant share of the market in Costa Rica, Panama, Salvador, Honduras, Nicaragua and Panama.

In 1998, four Canadian-based companies planned the largest exploration programs in five countries of Central America: Placer Dome planned to spend almost \$8 million in Costa Rica; Kinross Gold Corporation planned to spend about \$0.7 million on the El Dorado and the Potonico gold projects in Salvador; Greenstone Resources Ltd. planned to spend over \$7 mil-

lion at the San Andres gold mine in Honduras, and also planned to spend nearly \$11 million at the La Libertad gold mine and almost another \$4 million at the Bonanza gold mine, both in Nicaragua; and Teck planned to spend over \$1 million at the Petaquilla copper-gold project in Panama.

At the end of 1998, companies of all sizes listed on Canadian stock exchanges held about 100 mineral properties throughout Central America. They held 20 or more in each of Honduras and Panama (Figure 11).

### Caribbean

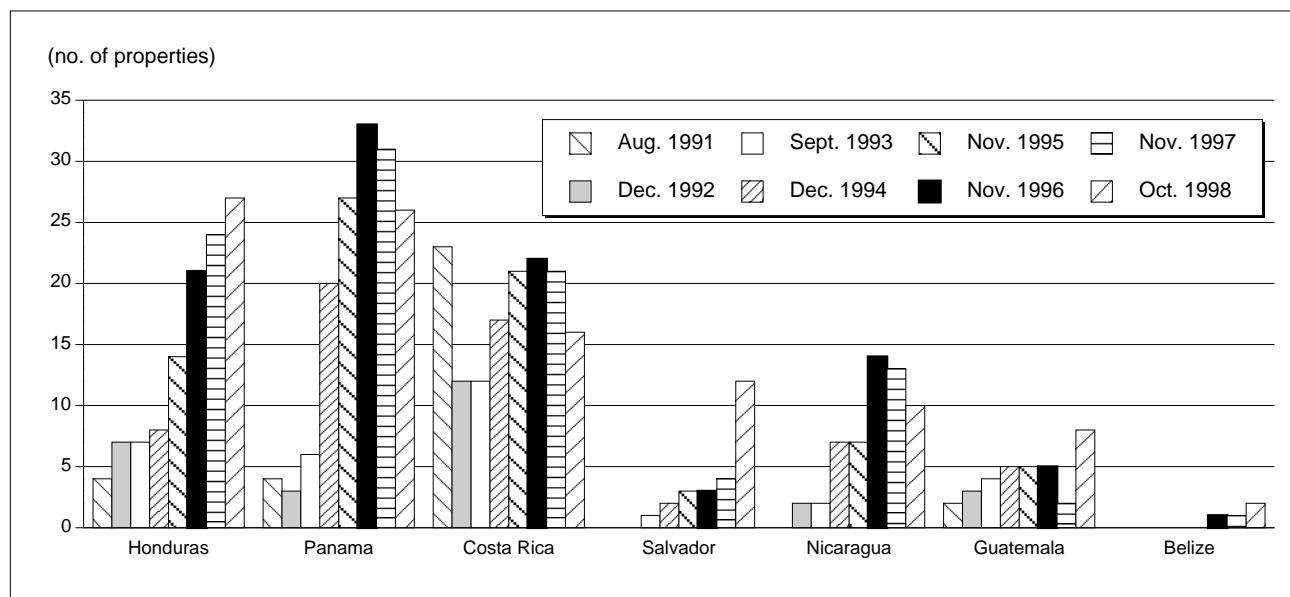
In 1998, the larger-company mineral exploration market in the Caribbean was valued at over \$15 million. The larger Canadian-based companies planned to spend \$1 million there, equivalent to roughly 7% of the market.

At the end of 1998, companies of all sizes listed on Canadian stock exchanges held about 40 mineral properties in the Caribbean, about half of them in Cuba (Figure 12).

### Europe and the Former Soviet Union

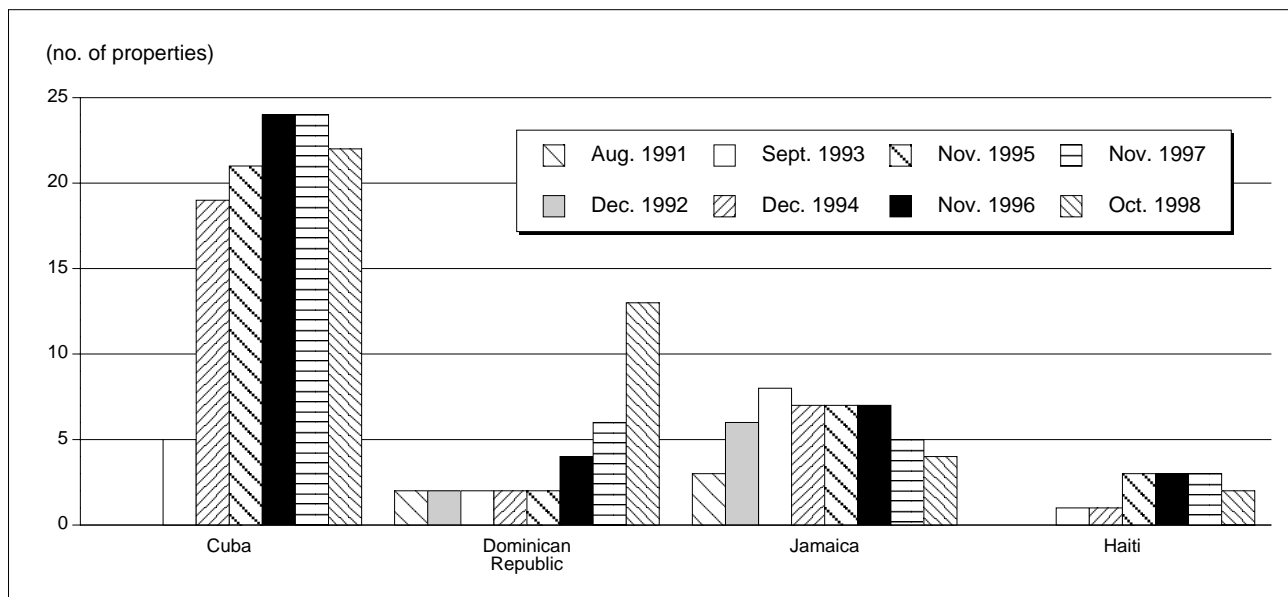
In 1998, the larger-company mineral exploration market in Europe and the former Soviet Union (FSU) was valued at over \$190 million (Figure 4), or roughly

**Figure 11**  
**Canadian Mineral Property Portfolio in Central America, by Country, 1991-98**  
 Companies of all Sizes Listed on Canadian Stock Exchanges



Source: Natural Resources Canada, based on *MIN-MET CANADA* database for 1992-97 and *Info-Mine* database for 1998, ROBERTSON INFO-DATA Inc., Vancouver, British Columbia, and used under licence.

**Figure 12**  
**Canadian Mineral Property Portfolio in the Caribbean, by Country, 1991-98**  
 Countries With Canadian Holdings in 1998  
 Companies of all Sizes Listed on Canadian Stock Exchanges



Source: Natural Resources Canada, based on *MIN-MET CANADA* database for 1992-97 and *Info-Mine* database for 1998, ROBERTSON INFO-DATA Inc., Vancouver, British Columbia, and used under licence.

5% of the \$4.0 billion larger-company market worldwide. The larger Canadian-based companies planned to spend over \$90 million there, equivalent to almost half the market. At the end of 1998, companies of all sizes listed on Canadian stock exchanges held about 225 mineral properties in the region (Figure 3).

### Western Europe

In 1998, the larger-company mineral exploration market in western Europe was valued at almost \$70 million, or roughly 2% of the \$4.0 billion larger-company market worldwide. The larger Canadian-based companies planned to spend \$25 million there, equivalent to about 37% of the market. They held the dominant share in Greenland and Sweden.

During 1998, three Canadian-based companies planned the largest programs in three countries of western Europe: Dia Met Minerals Ltd. planned to spend almost \$2 million on exploration for diamonds in Greenland; Noranda Inc. planned to spend over \$2.5 million on grass-roots exploration for zinc-lead deposits in Ireland; and Boliden Limited planned to spend two thirds of its \$15 million budget for Europe at, or around, its mining leases in Sweden.

At the end of 1998, 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 Sweden, Portugal, Finland and Greenland (Figure 13).

### Eastern Europe

In 1998, the larger-company mineral exploration market in eastern Europe was valued at \$38 million, or roughly 1% of the \$4.0 billion larger-company market worldwide. The larger Canadian-based companies planned to spend about \$27 million there, equivalent to almost 70% of the market.

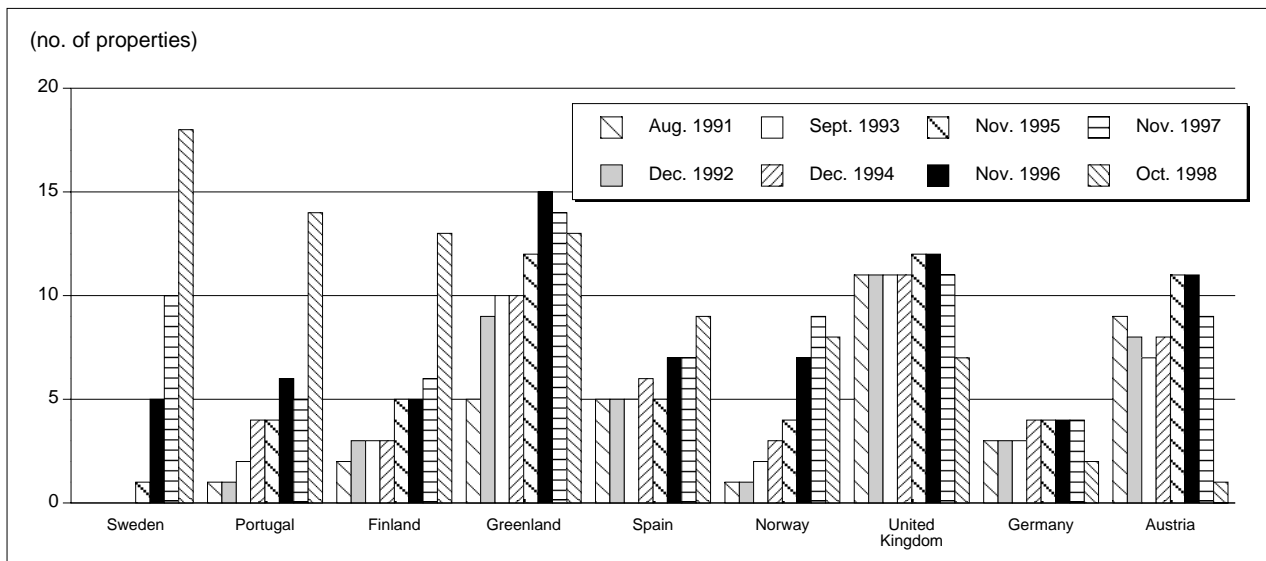
Canadian-based companies held the dominant share of the market and planned the largest programs in four countries of eastern Europe: TVX Gold Inc., alone, planned to spend almost \$10 million in Greece, mainly on its Olympias and Skouries deposits; Nebex Resources Ltd. planned to spend \$7 million in Albania; Gabriel Resources Limited planned to spend over \$4 million in Romania; and Cominco Ltd. planned to spend over \$2 million searching for gold in Turkey.

At the end of 1998, companies of all sizes listed on Canadian stock exchanges held about 50 mineral properties in eastern Europe. They held one dozen or more in each of Turkey and Slovakia (Figure 14).

### Former Soviet Union

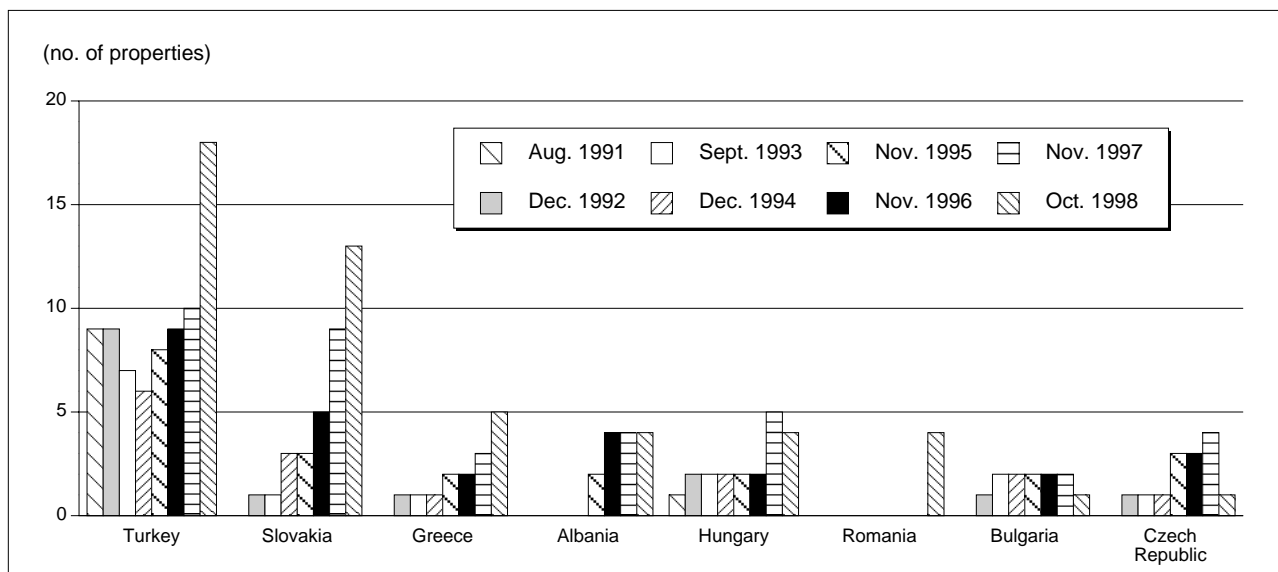
In 1998, the larger-company mineral exploration market in the FSU was valued at over \$70 million, or

**Figure 13**  
**Canadian Mineral Property Portfolio in Western Europe, 1991-98 –**  
**Countries Accounting for 95% of Canadian Holdings in 1998**  
 Companies of all Sizes Listed on Canadian Stock Exchanges



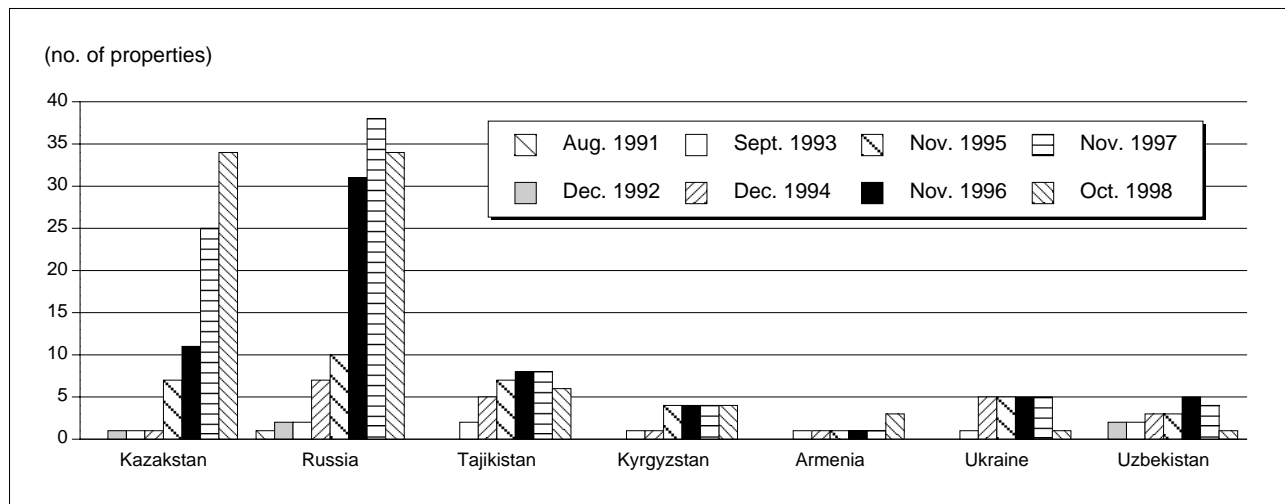
Source: Natural Resources Canada, based on MIN-MET CANADA database for 1992-97 and Info-Mine database for 1998, ROBERTSON INFO-DATA Inc., Vancouver, British Columbia, and used under licence.

**Figure 14**  
**Canadian Mineral Property Portfolio in Eastern Europe, 1991-98**  
**Countries With Canadian Holdings in 1998**  
 Companies of all Sizes Listed on Canadian Stock Exchanges



Source: Natural Resources Canada, based on MIN-MET CANADA database for 1992-97 and Info-Mine database for 1998, ROBERTSON INFO-DATA Inc., Vancouver, British Columbia, and used under licence.

**Figure 15**  
**Canadian Mineral Property Portfolio in the Former Soviet Union, by Country, 1991-98**  
 Companies of all Sizes Listed on Canadian Stock Exchanges



Source: Natural Resources Canada, based on *MIN-MET CANADA* database for 1992-97 and *Info-Mine* database for 1998, ROBERTSON INFO-DATA Inc., Vancouver, British Columbia, and used under licence.

roughly 2% of the \$4.0 billion larger-company market worldwide. The larger Canadian-based companies planned to spend over \$35 million in these countries.

Since the early 1990s, there has been growing Canadian interest in participating in mineral opportunities in the FSU. At the end of 1998, companies of all sizes listed on Canadian stock exchanges held interests in over 80 mineral properties in seven countries of the FSU (Figure 15).

Russia is by far the country of the FSU where Canadian companies are the most active. In 1998, a dozen of these companies planned to spend almost \$27 million in total on exploration there, about the same amount as in 1997 and the dominant share of the market. The number of properties held in Russia by companies of all sizes listed on Canadian stock exchanges increased significantly starting in 1996 and now stands at over 30. Archangel Diamond Corporation, with the largest exploration budget for Russia, planned to spend over \$13 million exploring for diamonds in the Verkhotina licence area.

Kazakhstan also has become increasingly attractive to Canadian companies. During 1998, the portfolio of mineral properties held in that country by companies of all sizes listed on Canadian stock exchanges increased to over 30.

### Africa and the Middle East

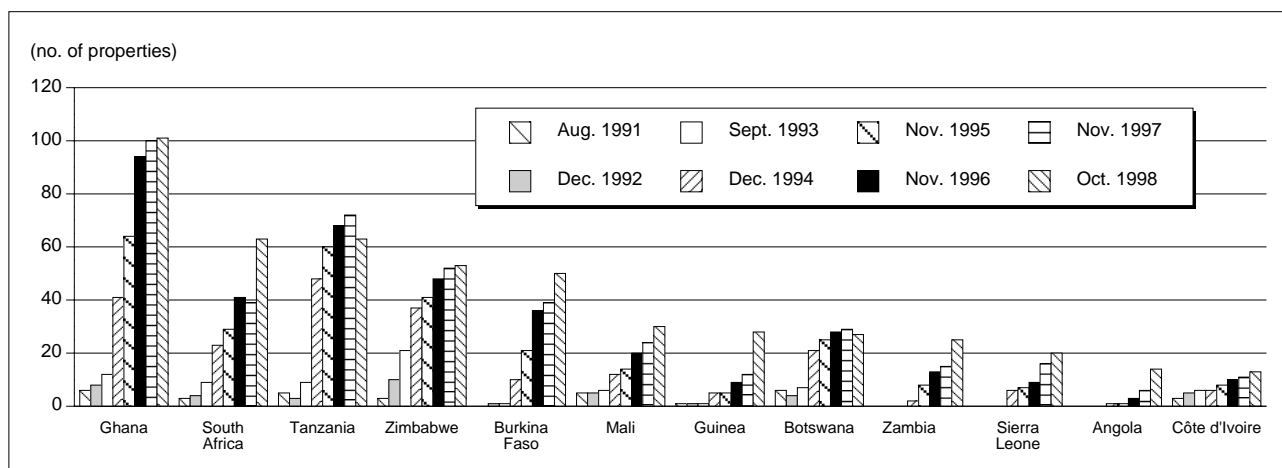
In 1998, the larger-company mineral exploration market in Africa and the Middle East was valued at almost \$710 million (Figure 4), or almost 18% of the

\$4.0 billion larger-company market worldwide. The larger Canadian-based companies planned to spend \$165 million in Africa, equivalent to over 23% of the market on that continent.<sup>7,8</sup> In addition, they planned to spend about \$0.6 million in the Middle East.

During 1998, nine of the larger Canadian-based companies planned the largest mineral exploration programs in eight countries of Africa: Sutton Resources Ltd. planned to spend over \$30 million in Tanzania; SouthernEra Resources Limited planned to spend over \$17 million exploring for diamonds in Angola; Tenke Mining Corp. planned to spend \$14 million and Banro Resource Corporation planned to spend \$11 million in the Democratic Republic of the Congo; High River Gold Mines Ltd. planned to spend \$7 million on its Taparko gold project in Burkina Faso; Samax Gold Inc. planned to spend \$0.7 million in the Congo; Messina Diamond Corporation planned to spend \$7 million in Lesotho; Etruscan Resources Inc. planned to spend almost \$6 million in Niger; and DiamondWorks Ltd. planned to spend \$0.4 million in Sierra Leone.

Between 1992 and 1998, 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 over 50%. As a result, at the end of 1998, these companies held interests in over 600 mineral properties in 34 countries there. They held interests in about 100 properties in Ghana, in about 60 in each of South Africa and Tanzania, and in about 50 in each of Zimbabwe and Burkina Faso (Figure 16).

**Figure 16**  
**Canadian Mineral Property Portfolio in Africa, 1991-98 –**  
**Countries Accounting for 80% of Holdings in 1998**  
 Companies of all Sizes Listed on Canadian Stock Exchanges



Source: Natural Resources Canada, based on *MIN-MET CANADA* database for 1992-97 and *Info-Mine* database for 1998, ROBERTSON INFO-DATA Inc., Vancouver, British Columbia, and used under licence.

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. Some of the commodities of interest to Canadians on that continent are not currently produced in Canada or there is not much exploration for them in this country.

## Asia-Pacific

In 1998, the larger-company exploration market in Asia-Pacific was valued at over \$1.1 billion (Figure 4), or roughly 28% of the \$4.0 billion larger-company market worldwide. The market in Asia-Pacific has become almost as large as the one in Latin America. The larger Canadian-based companies planned to spend about \$100 million in the region, equivalent to roughly 9% of the market there. At the end of 1998, companies of all sizes listed on Canadian stock exchanges held interests in over 450 mineral properties in the region (Figure 3).

### Southeast Asia

In 1998, the larger-company mineral exploration market in Southeast Asia was valued at over \$360 million, or 9% of the \$4.0 billion larger-company market worldwide. The larger Canadian-based companies planned to spend over \$70 million in Southeast Asia, equivalent to almost 20% of the market there. They held the dominant share of the market in each of Myanmar, Papua New Guinea and Thailand.

In Indonesia, eight of the larger Canadian-based companies planned to spend \$30 million in total, equivalent to 15% of the more than \$190 million exploration market in that country. Inco Limited alone planned to spend almost \$8 million on grass-roots exploration there.

At the end of 1998, companies of all sizes listed on Canadian stock exchanges held almost 270 mineral properties in Southeast Asia. They held over 160 in Indonesia and about 50 in the Philippines (Figure 17).

### East Asia

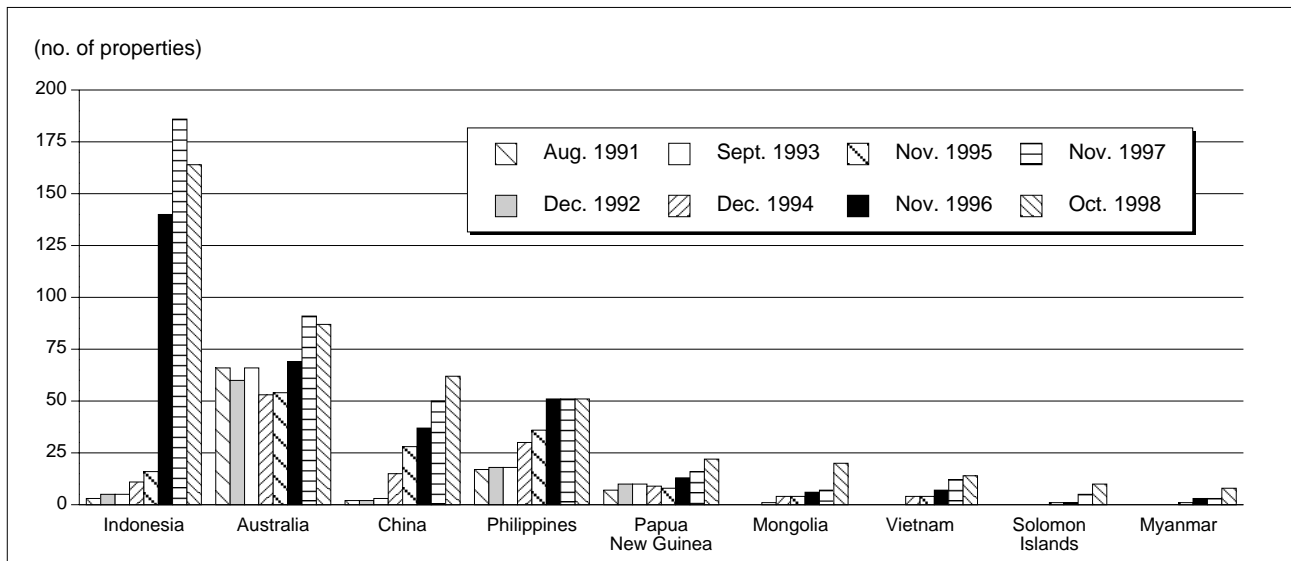
In 1998, the larger-company mineral exploration market in east Asia, which includes China, Japan, Mongolia, Taiwan and South Korea, was valued at about \$37 million, or 1% of the \$4.0 billion larger-company market worldwide. The larger Canadian-based companies planned to spend over \$7 million there, equivalent to about 20% of the market.

Over the past four years, China has become increasingly attractive to Canadian mining companies. In late 1998, companies of all sizes listed on Canadian stock exchanges held interests in over 60 mineral properties in that country (Figure 17).

### South Pacific

In 1998, the larger-company mineral exploration market in the South Pacific was valued at over \$710 million, or 18% of the \$4.0 billion larger-

**Figure 17**  
**Canadian Mineral Property Portfolio in Asia-Pacific, 1991-98 –**  
**Countries Accounting for 95% of Canadian Holdings in 1998**  
 Companies of all Sizes Listed on Canadian Stock Exchanges



Source: Natural Resources Canada, based on *MIN-MET CANADA* database for 1992-97 and *Info-Mine* database for 1998, ROBERTSON INFO-DATA Inc., Vancouver, British Columbia, and used under licence.

company market worldwide. Australia accounted for almost all of that market.

The larger Canadian-based companies planned to spend about \$20 million in the region in 1998, all of it in Australia. The larger Canadian-based companies held about 3% of the market in that country.

At the end of 1998, companies of all sizes listed on Canadian stock exchanges held over 100 properties in the South Pacific, of which almost 80% were in Australia (Figure 17).

## SUMMARY AND OUTLOOK

During 1996, a record amount of equity financing was raised in Canada for exploration companies listed on Canadian stock exchanges. As a result, these companies had the capital to conduct, during 1997, more mineral exploration programs worldwide than those of any other nation. In spite of the subsequent uncertainty in capital markets, worldwide exploration expenditures were remarkably close to budgets during 1997.

In 1997 and 1998, it became progressively more difficult to raise risk capital. As a result, worldwide exploration programs in 1998 were curtailed by about one third compared with those of 1997. In 1998, in spite of continuing uncertainty in global markets, the

proportion of exploration budgets allocated to Canada stood at almost 11%, slightly larger than in 1997. In addition, Canadian-based companies conducted almost one third of the world's mineral exploration programs, more than any other nation.

Canadian companies consolidated their position in the Americas during 1998. For the first time, they became the dominant explorationists in the United States, accounting for almost half of the activity there. Furthermore, they continued to conduct the largest share of exploration programs, not only in Canada, but also in Mexico, South America, Central America and Europe. Although Canadian companies have diversified their portfolio of mineral projects to well over 100 countries, Canada remains the country where they are, by far, the most active.

Investor uncertainty continues to depress exploration finance markets, and a return to the record levels of financing raised in Canada in 1996 for exploration worldwide is not yet in sight. A number of multinationals have announced sizeable reductions in exploration programs for 1999. The level of junior company exploration activity around the world will continue to decline until the demand for mineral commodities rises, their prices increase in response, and investor confidence is restored. In the meantime, Canadian companies are likely to continue to dominate mineral exploration, especially in the Americas.

## REFERENCES

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**2** Keith 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 for 1991 through 1997 on the mineral property portfolio of companies of all sizes listed on Canadian stock exchanges is derived from the *Min-Met Canada* database; for 1998, it is derived from the *Info-Mine* database. These are both products of 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.

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**8** For a review of certain economic, political and social aspects of mineral investment in Africa, see Bonnie Campbell, "Liberalisation, deregulation, state promoted investment – Canadian mining interests in Africa," *Journal of Mineral Policy, Business and Environment, Raw Materials Report*, Vol. 13, No. 4, 1998, pp. 14-34.

*Note: Information in this review was current as at early March 1999.*