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## About The Fraser Institute

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The Fraser Institute is an independent Canadian economic and social research and educational organization. It has as its objective the redirection of public attention to the role of competitive markets in providing for the well-being of Canadians. Where markets work, the Institute's interest lies in trying to discover prospects for improvement. Where markets do not work, its interest lies in finding the reasons. Where competitive markets have been replaced by government control, the interest of the Institute lies in documenting objectively the nature of the improvement or deterioration resulting from government intervention. The Fraser Institute is a national, federally chartered non-profit organization financed by the sale of its publications and the contributions of its members, foundations, and other supporters.

## Acknowledgements

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First we must recognize and thank Laura Jones, Adjunct Scholar with The Fraser Institute, for conceptualizing the project six years ago. Her dedication and vision made the project a reality, and have been integral to the survey's evolution.

We would like to acknowledge the Prospectors and Developers Association of Canada (PDAC), whose generous financial support made this year's survey possible. Their support provided the necessary resources to develop and expand the "Objective Index" introduced last year. We are grateful to the PDAC for their suggestion to include measurable parameters and data with which to compare the Canadian jurisdictions, and for their assistance with the development of the parameters. The Objective Index can be found in Appendix A.

John DeYoung, Chief Scientist, Minerals Information Team at the US Geological Survey deserves a special thanks for his invaluable comments on this report. We would also like to thank James Otto, Deputy Director of the Institute for Global Resources Policy and Management at the Colorado School of Mines for helping with the methodology of the Objective Index, and Sharon Prager for her help redesigning the survey and adding US jurisdictions four years ago. We would also like to thank Ken Green, Director of the Centre for Studies in Risk and Regulation, and Fred McMahon, Director of the Centre for Trade and Globalization Studies at The Fraser Institute, for their support and suggestions with the project.

Finally, we would like to thank all the companies who took the time to participate in *The Fraser Institute's Annual Survey of Mining Companies 2002/2003*. Your continued encouragement and participation have made the survey the success it is today.

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## **Survey Information**

The Fraser Institute Annual Survey of Mining Companies 2002/2003 was sent to 972 senior and junior mining companies around the world. The survey represents responses from 16 percent (158) of those companies, comprising 131 junior and 27 senior companies (junior companies tend to be smaller, actively engaging in exploration, whereas senior companies are larger, normally with producing mines). The companies participating in the survey account for exploration expenditures totaling US\$737.9 million (2001). They represent over 60 percent (US\$191 million) of the total mineral exploration expenditure in Canada in 2001 (US\$317.4 million) as estimated by Natural Resources Canada. This survey further represents about 32 percent (US\$56.0 million) of the exploration expenditures in the United States in 2001 (US\$175.8 million), and 37 percent (US\$236.5 million) of the exploration expenditures in Latin America (US\$639.8 million) as estimated by Metals Economics Group.

## Executive Summary—2002/2003 Mining Survey

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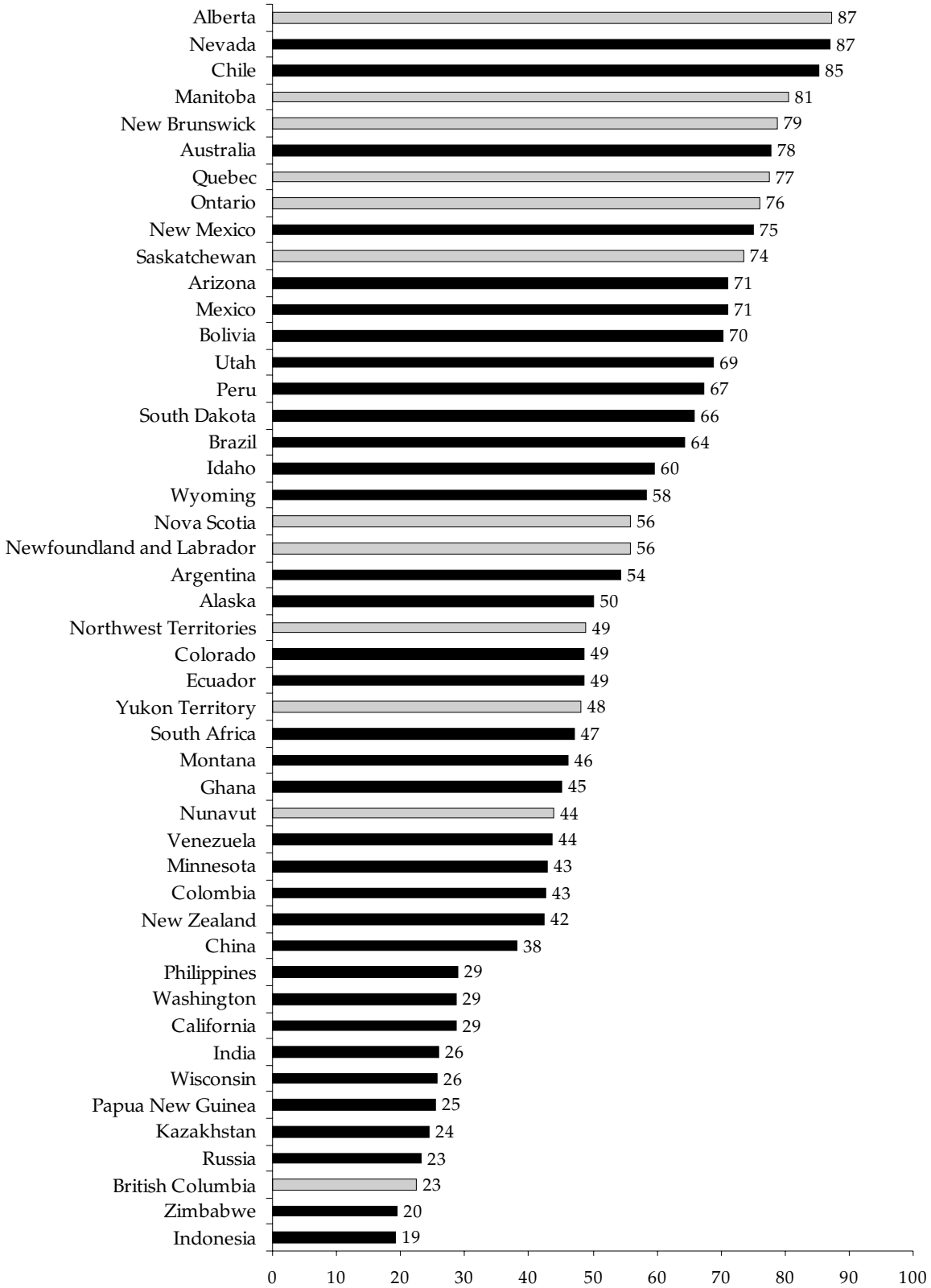
Since 1997, The Fraser Institute has conducted an annual survey of metal mining companies to assess how mineral endowments and public policy factors such as taxation and regulation affect exploration investment. Survey results represent the opinions of exploration managers in mining companies operating around the world. As the popularity of the survey has grown, we have expanded it to include more jurisdictions. We now ask companies to give us their opinions about the investment attractiveness of 47 jurisdictions including the Canadian provinces and territories (except Prince Edward Island), selected US states (this year Alaska, Arizona, California, Colorado, Idaho, Minnesota, Montana, Nevada, New Mexico, South Dakota, Utah, Washington, Wisconsin, and Wyoming), Argentina, Australia, Bolivia, Brazil, Chile, China, Colombia, Ecuador, Ghana, India, Indonesia, Kazakhstan, Mexico, New Zealand, Papua New Guinea, Peru, Philippines, Russia, South Africa, Venezuela, and Zimbabwe. We look forward to including other jurisdictions of interest to respondents to further reflect the globalization of mining in the years to come.

### **Policy Potential Index: A “Report Card” to Governments on the Attractiveness of their Mining Policies**

While geologic and economic evaluations are always requirements for exploration, in today’s globally competitive economy where mining companies may be examining properties located on different continents, a region’s policy climate has taken on increased importance in attracting and winning investment. The Policy Potential Index serves as a report card to governments on how attractive their policies are from the point of view of an exploration manager.

The Policy Potential Index is a composite index that measures the effects on exploration of government policies including taxation, environmental regulations, administration and duplication of regulations, uncertainty concerning native land claims, protected areas, labour issues, infrastructure, socioeconomic agreements, and political stability. The highest possible score on this index is 100. In the 2002/2003 survey, Nevada and Alberta tie for top place on the Policy Potential Index with a score of 87 (see figure 1). This is Nevada’s third straight year for being rated as having the best mineral policies, and Alberta’s first. Nevada tied with Chile for first place last year, and was alone at first place in 2000/2001. Other top-rated jurisdictions include Chile (85), Manitoba (81), New Brunswick (79), Australia (78), Quebec (77), Ontario (76), New Mexico (75), and Saskatchewan (74). While Chile, Nevada, and Alberta were the top three policy performers last year as well, New Mexico dramatically improved its ranking from twenty-first last year to ninth this year as a result of its improved rating in uncertainty concerning native land claims. The Yukon, ranked tenth from the bottom last year, climbed an impressive eleven positions to the middle of the group this year. This may be attributed to its improved labour regulation and political stability ratings. It is interesting to see that the uncertainty surrounding the Mineral Development Bill passed in South Africa this year did not affect its policy rating; it placed twenty-eighth on the Policy Potential Index for a second year. The worst per-

**Figure I: Policy Potential Index**



forming jurisdictions, based on policy, are Indonesia (19), Zimbabwe (20), British Columbia and Russia (tied at 23), Kazakhstan (24), Papua New Guinea (25), Wisconsin and India (tied at 26), and California, the Philippines, and Washington (all with 29). Also worth noting is that this is the first time in the survey's six-year history that British Columbia has not been rated last for its mining policies.

## **The Mineral Potential Index**

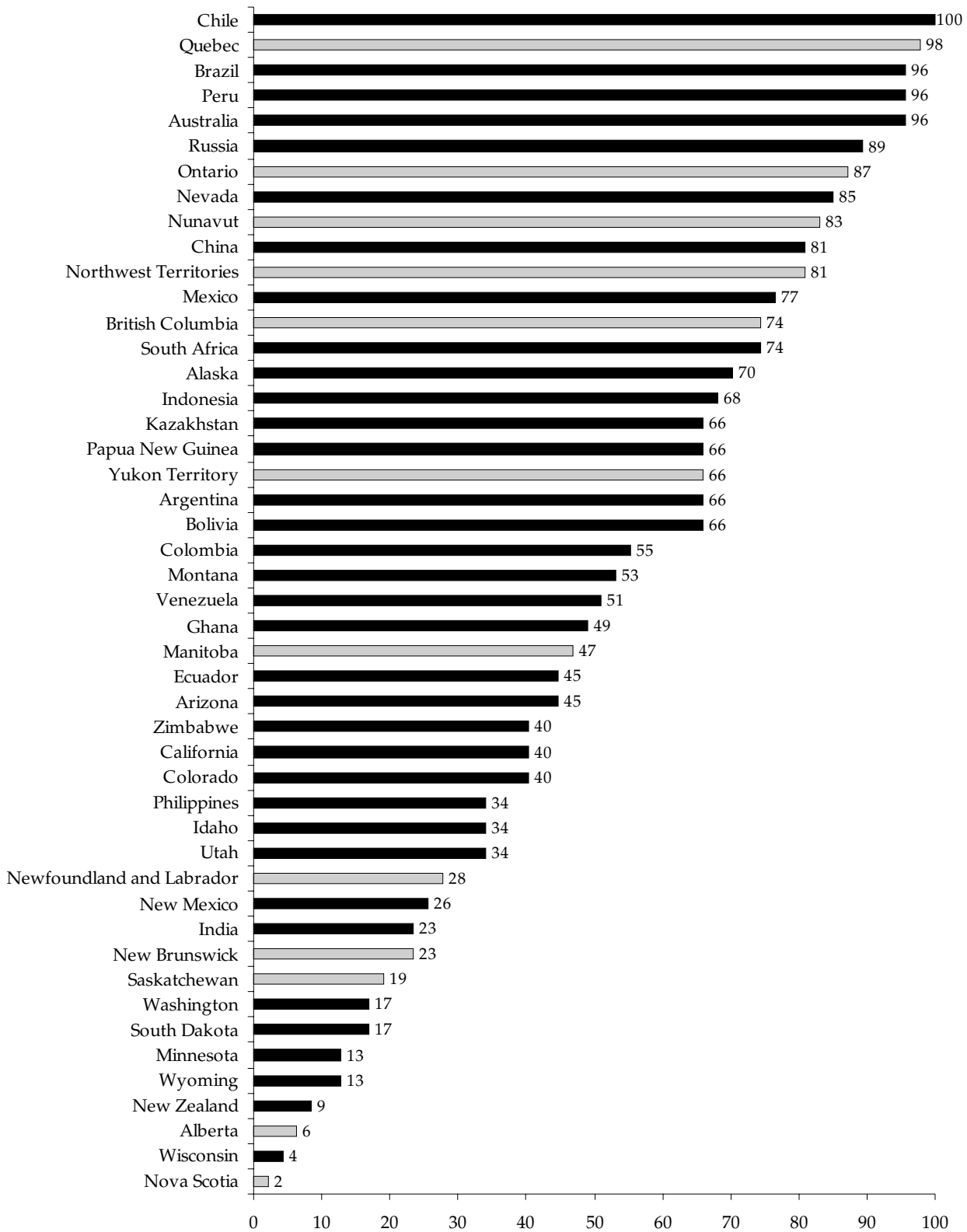
The Mineral Potential Index rates a region's attractiveness based on mining company executives' perceptions of geology. These perceptions can be affected by new information (maps, reports), and by market fluctuations which may change the mineral sought. Survey respondents were asked to rate the mineral potential of each region with which they were familiar assuming no land use restrictions in place, but further assuming that any mine would operate to industry "best practice" standards. In other words, respondents were asked to rate the attractiveness of the region's mineral potential independent of any policy restrictions. The index ranks the jurisdictions based on which regions' geology "encourages exploration investment." This year, Chile is in first place with a score of 100 (see figure 2). Quebec (last year's first place) comes in a close second with 98. Third place is shared by three jurisdictions: Australia, Brazil, and Peru, all of which rate a score of 96. Other top-ranked jurisdictions include Russia (89), Ontario (87), Nevada (85), Nunavut (83), and the Northwest Territories and China (tied at 81). The worst-rated regions on this index include Nova Scotia (2), Wisconsin (4), Alberta (6), New Zealand (9), and Minnesota and Wyoming (tied for 13).

## **The Investment Attractiveness Index Considers both Mineral and Policy Potential**

An overall Investment Attractiveness Index is constructed by combining the mineral potential index, which rates regions based on geologic attractiveness, and the policy potential index, a composite index that measures the effects of government policy on attitudes toward exploration investment. In past years we have been criticized for giving equal weight to the policy and mineral scores. In an effort to determine a weighting with which the industry would agree, we began asking survey respondents what weights they would place on policy and mineral potential. The median result of the findings this year, as it was last, was to put a 60 percent weight on mineral potential and a 40 percent weight on policy.

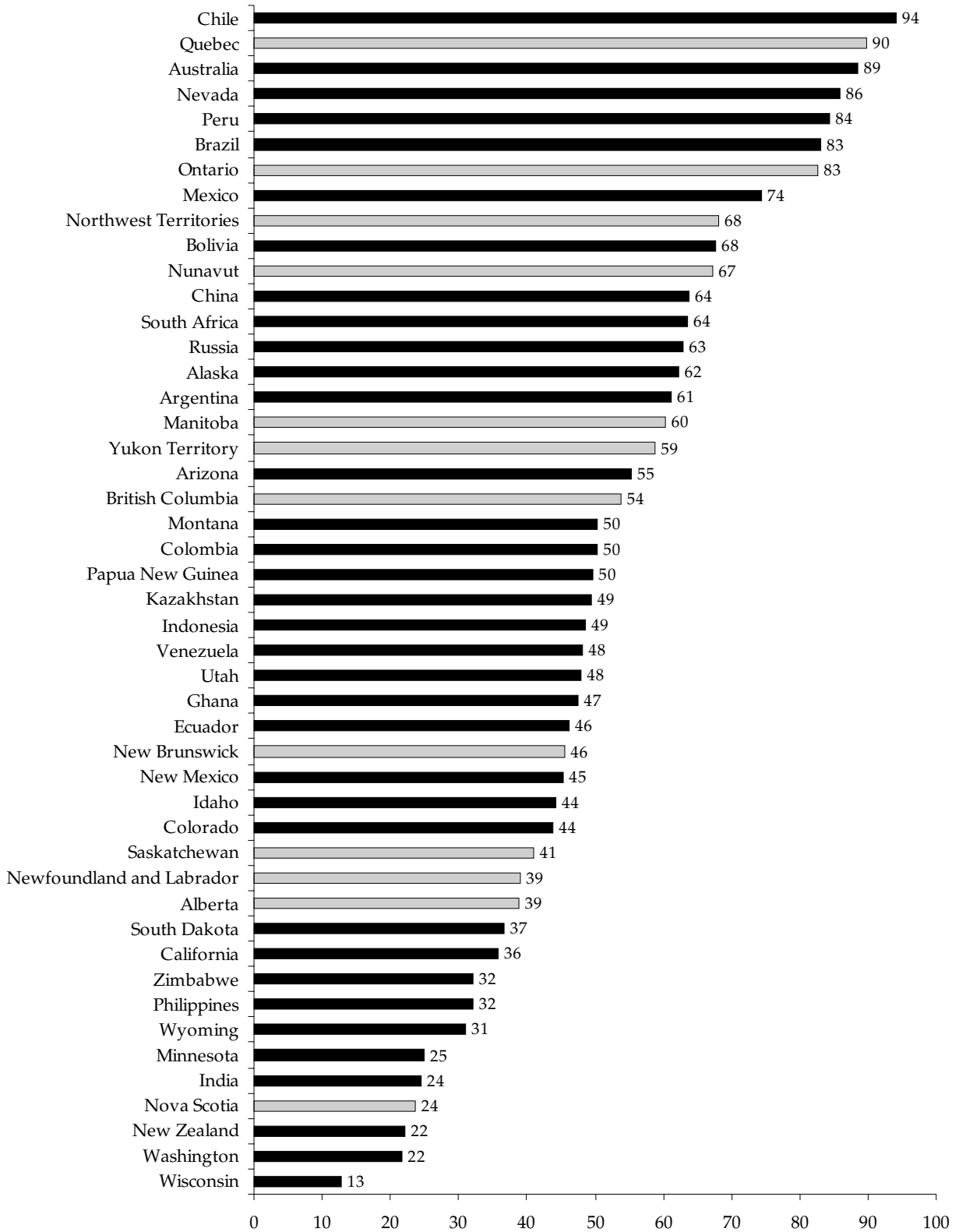
Chile is the top-rated jurisdiction for investment attractiveness with a score of 94 out of 100 (see figure 3). Quebec, which shared first place with Ontario last year, comes in a close second this year with 90, just above Australia, which once again comes third (89). Nevada (86) and Peru (84) round out the top five. Other highly-ranked jurisdictions include Ontario and Brazil (tied at 83), Mexico (74), the Northwest Territories and Bolivia (tied at 68), and Nunavut (67). The lowest-rated jurisdictions on the investment attractiveness index, with low ratings on both the policy and mineral potential indices include Wisconsin (13), Washington and New Zealand (tied at 22), Nova Scotia and India (tied at 24), Minnesota (25), Wyoming (31), the Philippines and Zimbabwe (tied at 32), and California (36).

**Figure 2: Mineral Potential Index**





**Figure 3: Investment Attractiveness Index**



## **Complementary Objective Index Included**

For the second year we have included a section that compares Canadian provinces and territories using available data to provide readers with more information about the differences between policies in different regions. These data may offer some insight into what is causing some regions to score high and others low on the opinion survey. Survey respondents and policy makers alike have suggested that poor ratings for certain jurisdictions may be a result of misperceptions about the realities of operating in a jurisdiction. Assessing the differences in policy by comparing the data may help determine whether this is the case, although relevant data are often limited. Further, data alone cannot fully capture the investment climate, which is also affected by the personalities and biases of all stakeholders, whether they be the makers of policy, the administrators of policy, or the individuals and groups who care deeply about land use decisions and feel that their concerns must also be heard. We hope to continue to expand this part of the report to include more jurisdictions and to improve it by adding more variables. This section can be found in Appendix A.

## Survey Background

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The idea of surveying mining companies about how government policies and mineral potential affect new exploration investment came from a Fraser Institute conference on mining held in Vancouver, Canada, in the fall of 1996. The comments and feedback from the conference showed that the mining industry was dissatisfied with government policies which deterred exploration investment within the mineral-rich province of British Columbia. Since many regions around the world have attractive geology and competitive policies, and given the increasing opportunities to pursue business ventures globally, many conference participants expressed the view that it was easier to explore in jurisdictions with attractive policies than to fight for better policies in unfriendly jurisdictions. The Fraser Institute launched the survey to examine which jurisdictions were providing the most favourable business climates for the industry, and in which areas certain jurisdictions needed to improve.

The effects of increasingly onerous, seemingly capricious regulations, uncertainty about land use, higher levels of taxation, and other policies that interfere with market conditions are rarely felt immediately, as they are more likely to deter companies looking for new projects than they are to shut down existing operations. We felt that the lack of accountability that stems from 1) the lag time between when policy changes are implemented and when economic activity is impeded and job losses occur and 2) industry's reluctance to be publicly critical of politicians and civil servants, needed to be addressed.

In order to address this problem and assess how various public policy factors influence companies' decisions to invest in different regions, The Fraser Institute began conducting an anonymous survey of senior and junior companies in 1997. The first survey included all Canadian provinces and territories. The second survey, conducted in 1998, added 17 US states, Mexico, and for comparison with North American jurisdictions, Chile. The third survey, conducted in 1999, was further expanded to include Argentina, Australia, Peru, and Nunavut. The fourth survey looked at the Canadian provinces and territories (except for Prince Edward Island, which was removed due to its relatively low mineral potential), 14 US states, Australia, Argentina, Chile, Mexico, Peru, as well as Brazil, Indonesia, Papua New Guinea, and South Africa. We expanded the fifth survey to include Kazakhstan, Russia, Bolivia, Colombia, Ecuador, Venezuela, China, Philippines, Ghana, and Zimbabwe. This year we have added India and New Zealand to last year's list of countries.

We add countries to the list based on the interests expressed by survey respondents, and have noticed that these interests are becoming increasingly global. In recognition of the fact that jurisdictions are no longer competing only with the policy climates of their immediate neighbours, but in fact with jurisdictions around the world, we think it is important to continue publishing and publicizing the results of the survey annually, and to make the results available and accessible to an increasingly global audience.

## Survey Results

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### Section I: Investment Climate Ratings

#### Methodology

The following section provides an analysis of 12 factors that contribute to the ability of jurisdictions to attract exploration investment. For each jurisdiction, companies were asked to rate the following factors on a scale of 1 to 5 (with 6 as a “do not know” option):

- Uncertainty concerning the administration, interpretation, and enforcement of existing regulations
- Regulatory duplication and inconsistencies (including federal/provincial or federal/state and interdepartmental overlap)
- Environmental regulations
- Uncertainty concerning what areas will be protected as wilderness or parks
- Uncertainty concerning native land claims
- Taxation regime (including personal, corporate, payroll, capital taxes, and the complexity associated with tax compliance)
- Infrastructure
- Labour regulation/employment agreements
- Political stability
- Socioeconomic agreements
- Mineral potential assuming current regulation/land use policies
- Mineral potential assuming no regulation or land restrictions (but further assuming industry “best practice” standards)

#### Scale

1 = encourages exploration investment

2 = not a deterrent to exploration investment

3 = mild deterrent to exploration investment

4 = strong deterrent to exploration investment

5 = would not pursue exploration investment in this region due to this factor

6 = do not know

Figures 4 to 13 show the percentage of respondents who rate various policy factors as strong deterrents to exploration investment in each jurisdiction. This includes survey respondents who either

consider the factor a “strong deterrent to exploration investment” or “would not pursue exploration investment in this region due to this factor” (a “4” or a “5” on the scale above). We have highlighted Canadian jurisdictions for ease of comparison. On the pages opposite these graphs, we have included quotes from survey respondents that help illustrate their feelings about operating in different regions. Figures 14 and 15 show the percentage of respondents who say that mineral potential either “encourages exploration investment” or is “not a deterrent to exploration investment.” Figures 1, 2, and 3, shown in the executive summary, give the composite rates for policy potential, mineral potential, and investment attractiveness. The mineral potential index was created by indexing jurisdictions according to the number of “1s” they received on the above scale. Tables 1 and 2 summarize the survey results. Table 3 shows the number of companies who indicate that a jurisdiction has the most/least favourable policies toward mining.



## **Graphical Results**

## **Uncertainty Concerning the Administration, Interpretation, and Enforcement of Existing Regulations**

There has been an *“Increase in permit applications, paperwork, and regulatory costs instead of less as promised in B.C.”*

—President, junior mining company

*“B.C. over the last ten years [has suffered] confusion on land tenure, tax, government attitude. A terribly complex regime for raising exploration funds, because of bureaucratic regulations. Some improvement appears to be on the way.”*

—President, junior mining company

*“BC [is the worst.] Can’t go on it, can’t work it, and probably can’t own it.”* The province needs to *“Establish due process and title certainty.”*

—President, junior mining company

There are unfavourable policies in *“California... [where] [t]he state creates too much red tape.”* The state should try *“Providing permits without extensive delays.”*

—President, junior mining company

*“Canada [has] too many overlapping permitting bodies (DoF) differing environmental standards etc. Not enough tax incentive for exploration.”* The country should *“Create one common environmental permitting agency for all of Canada.”*

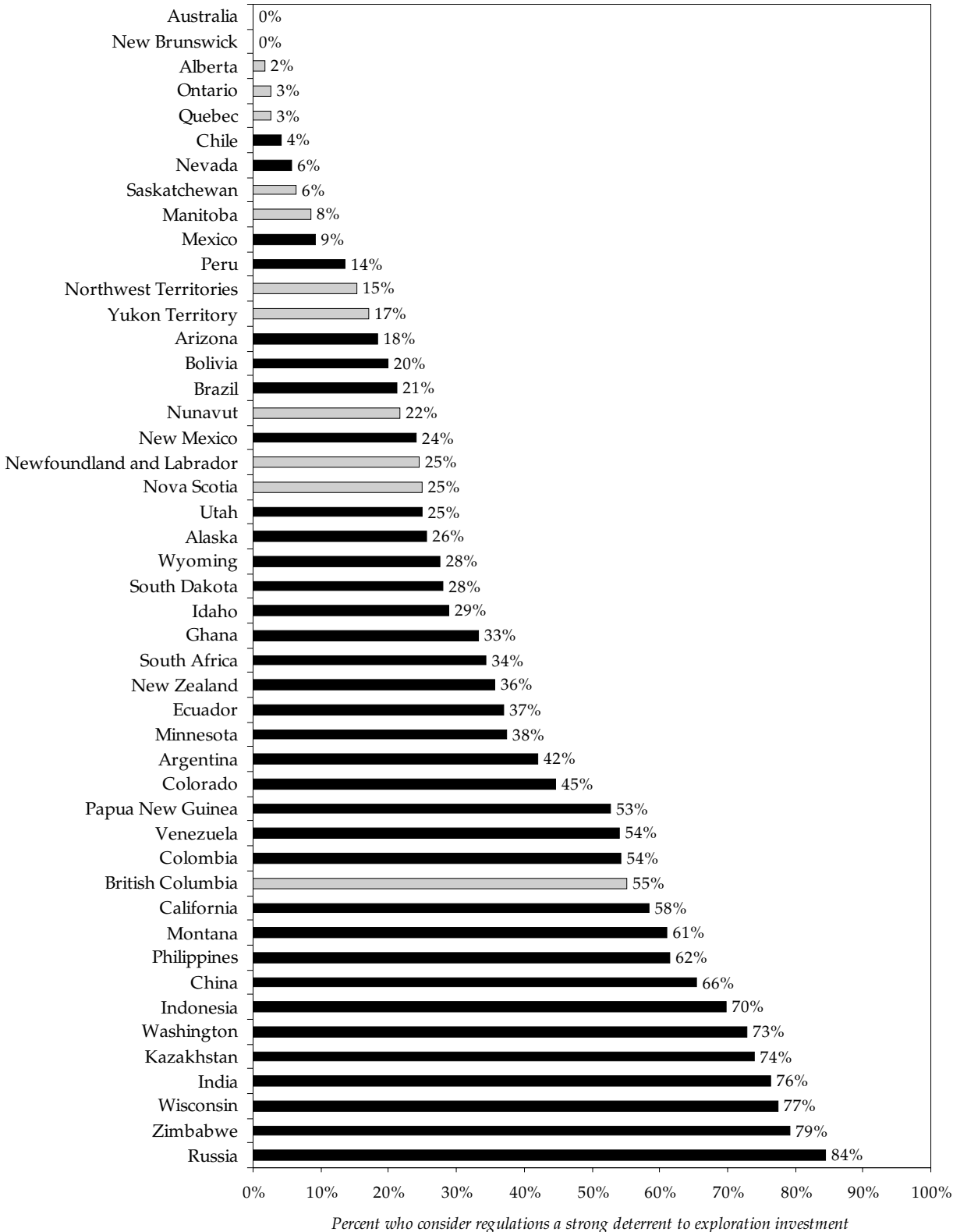
—President & CEO, junior mining company

*“U.S. [provides] poor return on investment unless extremely low cost producer.”* Also, *“too many capital expenditures related to regulations, environment, reclamation, [and] royalties. [They should] deregulate mining; industry standards of high quality to ensure compliance (environment...)”*

—Vice President Exploration, junior mining company



**Figure 4: Uncertainty Concerning the Administration, Interpretation, and Enforcement of Existing Regulations**



## Regulatory Duplication and Inconsistencies

*“In Ontario the permitting for exploration and development is quick and efficient through one agency/department.”*

—President, junior mining company

In the US and Canada: *“1. Environmental liability is infinite (US). 2. High taxes (Canada). 3. Permitting—5 to 7 years? (both). 4. Securities Commissions over-regulate (Canada, BC). [They both need to] streamline [the] mine permitting process.”*

—Exploration Manager, junior mining company

*“Saskatchewan [suffers] political interference, taxation, [and] overlap of regs.”* The province should *“Significantly reduce political interference and adopt stringent cost/benefit regulatory regime.”*

—President, senior mining company

*“Applied in early 2001 for a permit to open a ‘test’ mine under the B.C. Mines Act. Mining permit received summer 2001, waste/reclamation permit still not to hand. Project about to be abandoned.”*

—President & CEO, junior mining company

*“Canada [has] too much red tape and too stringent ... regulations that need to be followed.”* It needs *“to promote mining and attract investment. Stop setting aside protected areas.”*

—Vice President, junior mining company

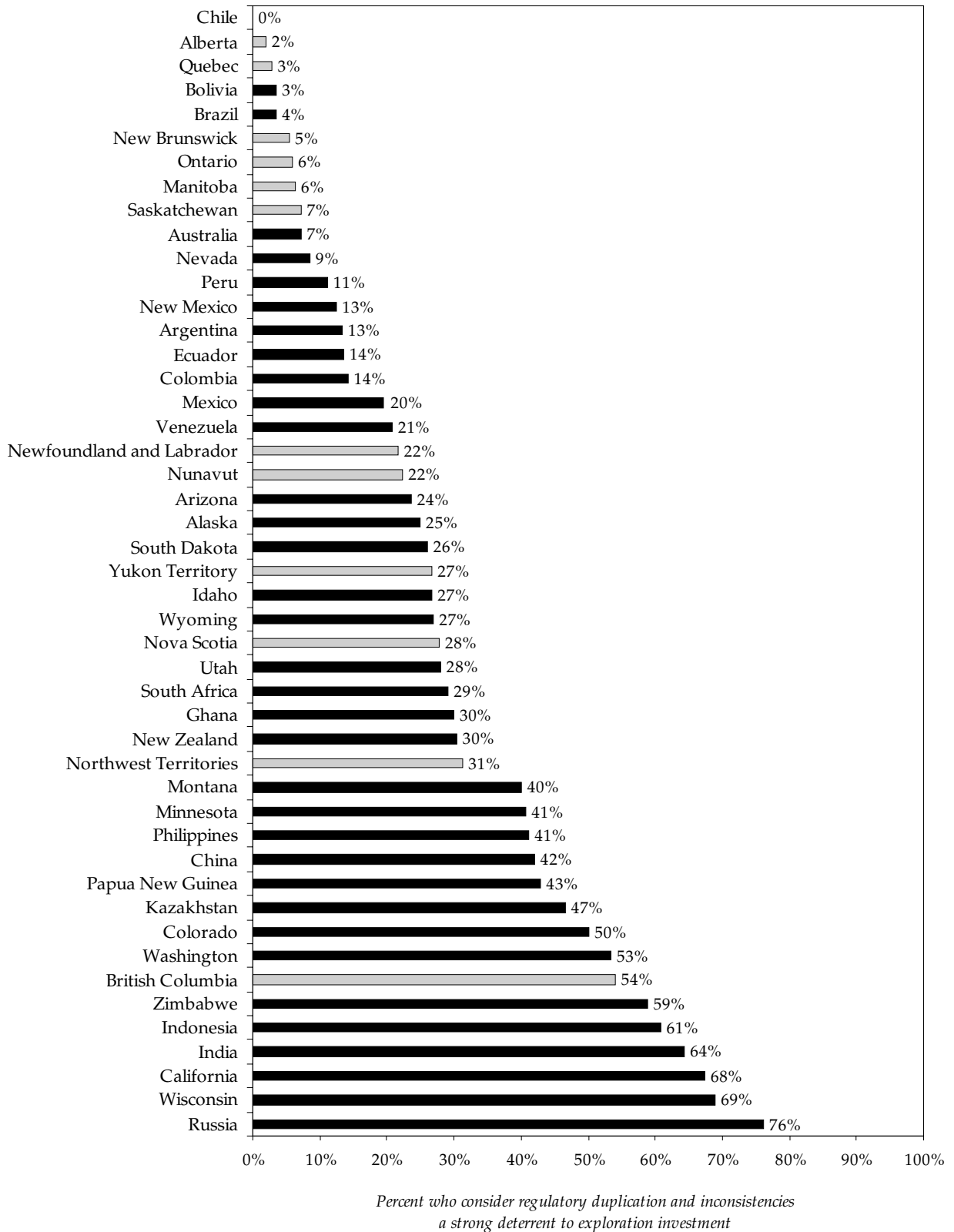
*“Quebec [offers] high mineral potential, good infrastructure, good monetary incentives (tax structure), and strong provincial jurisdiction regarding resource administration, but this is because of the basic ‘hands off’ attitude of the federal government toward Quebec. If federal treatment were the same for all provinces, territories, and native bands then Alberta would be up there with Ontario because of their supportive attitude toward the hardrock and oil and gas sectors of the mineral industry.”*

—President/COO, Chief Optimistic Officer, junior mining company

*“The greatest difficulties in this business come from another direction—the ridiculous amount of filings and forms (and outrageous fees) demanded by the multiple securities commissions and stock exchanges. These seem to expand and change monthly.”*

—President, junior mining company

**Figure 5: Regulatory Duplication and Inconsistencies**



## Environmental Regulations

*“U.S. [has] toooo many idiots! who work with junk science and who are out for control at any cost—Sierra Club, GreenPeace, the EPA, etc...” It needs to “Get back to the reality that the U.S. is dependent on metals to make the economy grow and prosper—same with energy.”*

—President, junior mining company

*In “British Columbia... the environmental and permitting agencies/departments that have been employed by the last government have been against mining. Therefore, they have done everything in their power to prevent any exploration and development... Lack of common sense on the part of regulators is more the ‘norm.’” B.C. should “take the same approach to permitting and monitoring exploration companies as Ontario.”*

—President, junior mining company

*“In Montana—the Lynx cat which is listed as an endangered species—is **NOT** indigenous to Montana and is **NOT** endangered in its home—Canada... has caused our U.S. company major permitting problems because our area of interest—might be!—a habitat, although there is no proof of habitation.”*

—President, junior mining company

*“USA [has] eco-terrorism-environmental strangulation policies.” The country needs a dose of “environmental realism based on good scientific/engineering policies.”*

—Evaluations Manager, senior mining company

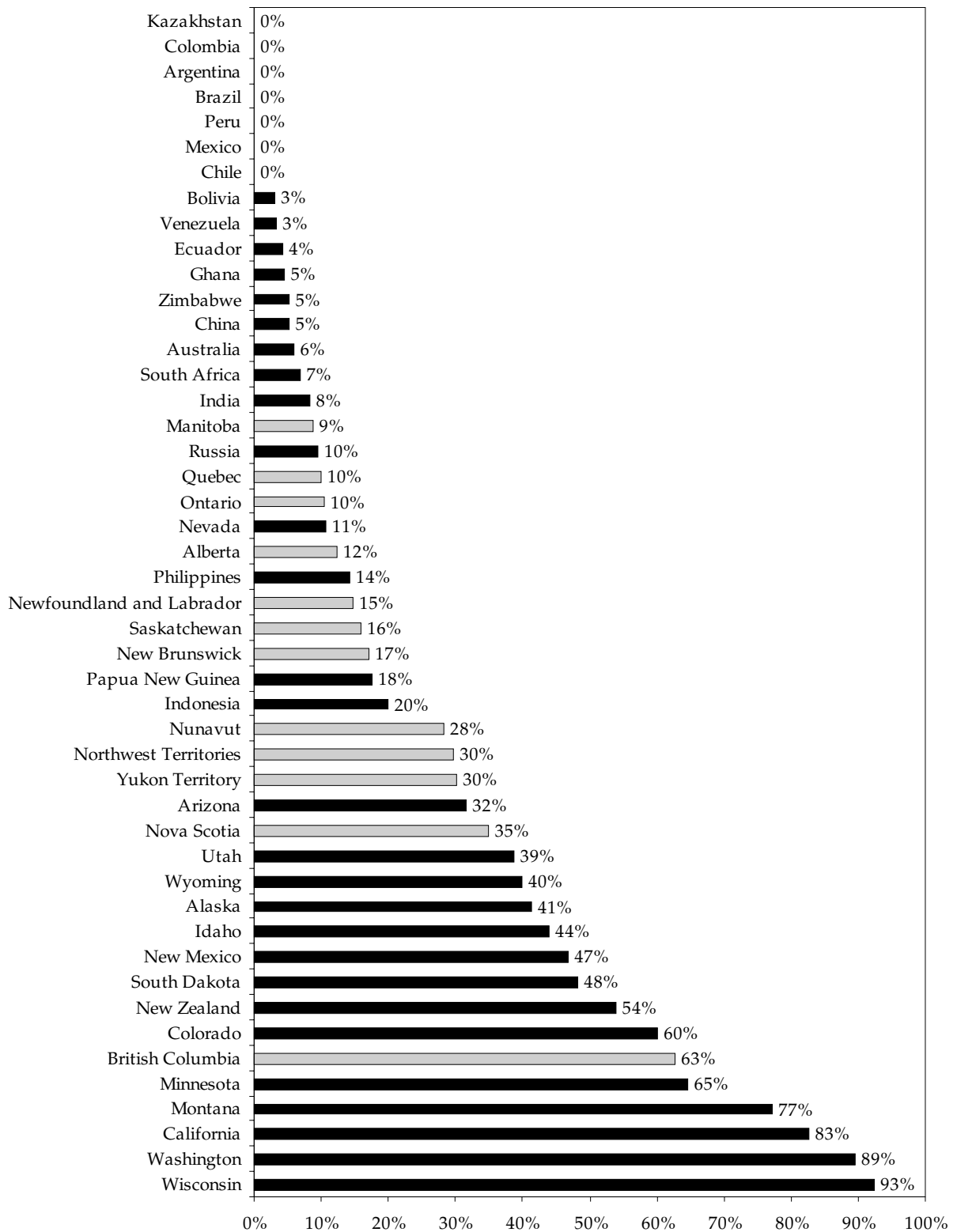
*“California [has] too many and confusing environmental regulations” making the “Permitting process lengthy and costly.” It needs to “Shorten permitting process; make environmental groups financially accountable for unnecessary delays.”*

—Mining and Exploration Manager, junior mining company

*“United States [has a] general tendency to reject mining as an environmental problem.” There should be “Balance between mining and environment.”*

—CEO, junior mining company

**Figure 6: Environmental Regulations**



*Percent who consider environmental regulations a strong deterrent to exploration investment*

## **Uncertainty Concerning what Areas will be Protected as Wilderness or Parks**

*“Newfoundland should let a discovery become a mine—foreign mining companies have told me they won’t invest in Canada because of Windy Craggy and Voisey Bay.”*

—President, junior mining company

One unfavourable policy is the *“Forest Reserve issue in Ghana—exploration was banned in 1997 in Forest Reserves; that has now been allowed but mining is not yet permitted.”*

—COO, junior mining company

*“In Canada, Nova Scotia [and] British Columbia [have problems with] land use issues! Land claims [are] unresolved! Wishy-washy politicians! A strong ‘green’ bias.”* It has to *“resolve land use issues—especially Protected Areas.”*

—President, junior mining company

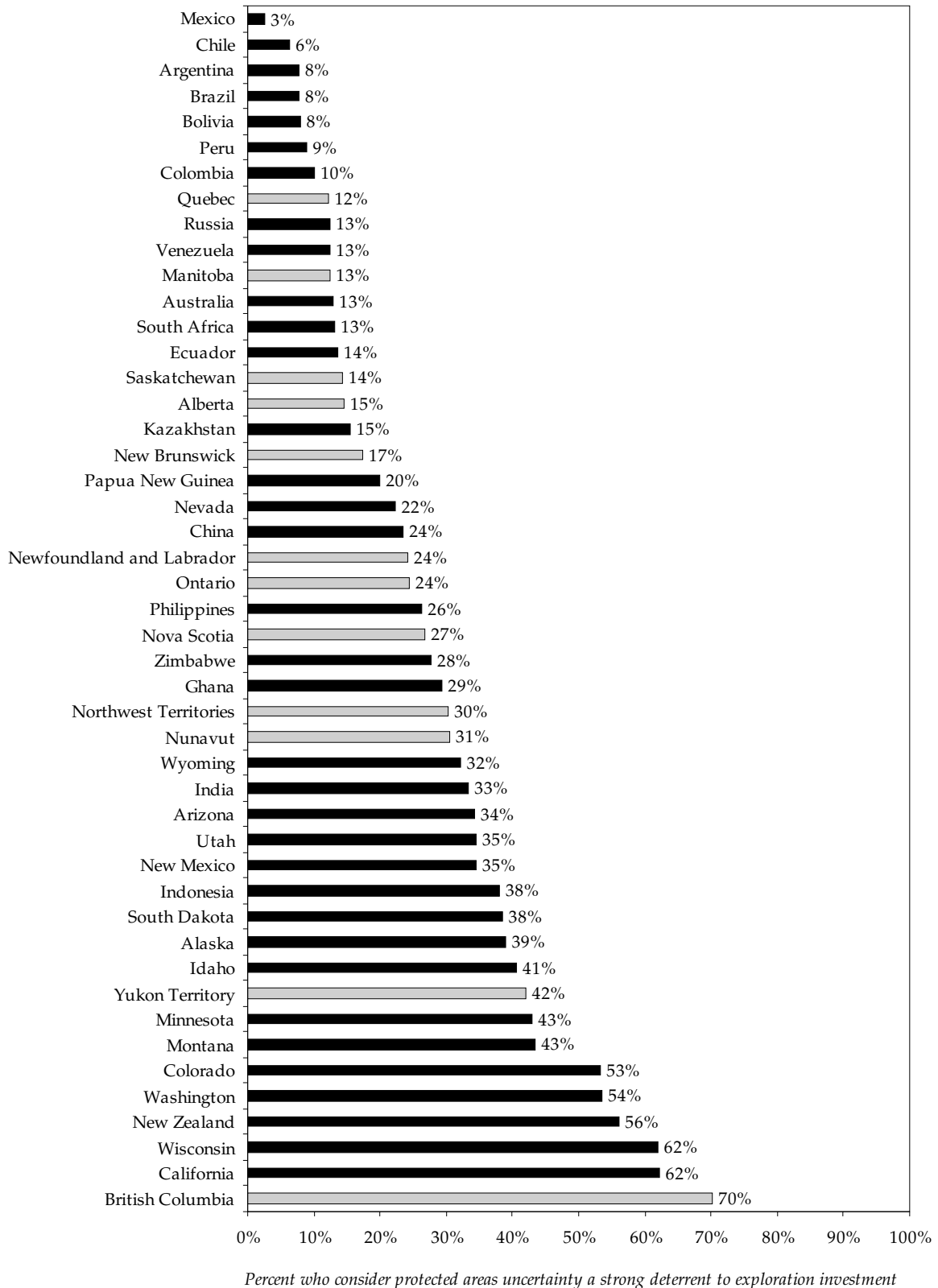
*“Quebec [is] mining friendly with most land use issues resolved! Excellent mineral potential.”*

—President, junior mining company

The worst jurisdiction is *“BC, [although it] may have changed somewhat recently. The NWT is a close second. Though much of the province is rural, policy is dictated mostly by people in Vancouver who do not understand the needs of rural areas and how responsible the mining industry has become.”*

—Vice President, Exploration, junior mining company

**Figure 7: Uncertainty Concerning which Areas will be Protected as Wilderness or Parks**



## Uncertainty Concerning Native Land Claims

*“British Columbia [has problems with] environmental extremism [and] First Nation land claims.” It should “relax [the] Environmental Review Process [and] abolish land claims.”*

—Vice President Government Affairs, junior mining company

*“Should not need native ‘approval’ to work in Northern Ontario. Current environment has two regulatory requirements: 1. mining act and 2. native malice unofficially recognized by government.”*

—Vice President Exploration, junior mining company

*“Australia, Chile, Canada, [and] Nevada” have favourable policy climates because of their “environmental regulation, taxation, aboriginal rights, [and] stable workable regulations.”*

—Evaluations Manager, senior mining company

*“Laws and regulation [are] not enforced and Indians have the final decision [in] B.C.” It would help to have the “Indians out of the picture so that company only answers to provincial government... The horror story applies to just about every province. After you acquire mining rights, Ministry in charge advises you to contact the local Indian community before proceeding with your exploration program. They have effective control.”*

—President, junior mining company

*“Quebec [has a] top geological database, exceptional potential and relatively unexplored, agreements with aboriginals.” It is a “pro-mining jurisdiction.”*

—President, junior mining company

*“Land claims and environmental concerns rule out spending money [in] B.C. and the USA.” These jurisdictions have to “settle land claims and demonstrate they aren’t going to cave in to environmentalists.”*

—Director Mining, junior mining company

*“United States [has the worst] environmental policies and public attitude towards mining. There is no hope. Our company had four native land claims in an area of no historical significance.”*

—General Manager and COO, junior mining company



**Figure 8: Native Land Claims Uncertainty**



## Taxation Regime

*“Quebec [offers] cash incentives to explore—rebates, tax incentives.”*

—Manager, Exploration—North America, senior mining company

The jurisdiction with the most favourable policies is *“Australia. Gold mining [is] tax free. Mining industry [is] highly supported by government at all levels.”*

—Exploration Manager, junior mining company

*“Quebec [offers] security of title [and] investments; pro-mining in general; favorable incentives to invest at all government levels.”*

—Vice President Exploration, junior mining company

We found *“Fast permitting, tax credits, [a] good apprenticeship program, support for infrastructure, liberal remittance regime [in] South Africa.”*

—President & CEO, junior mining company

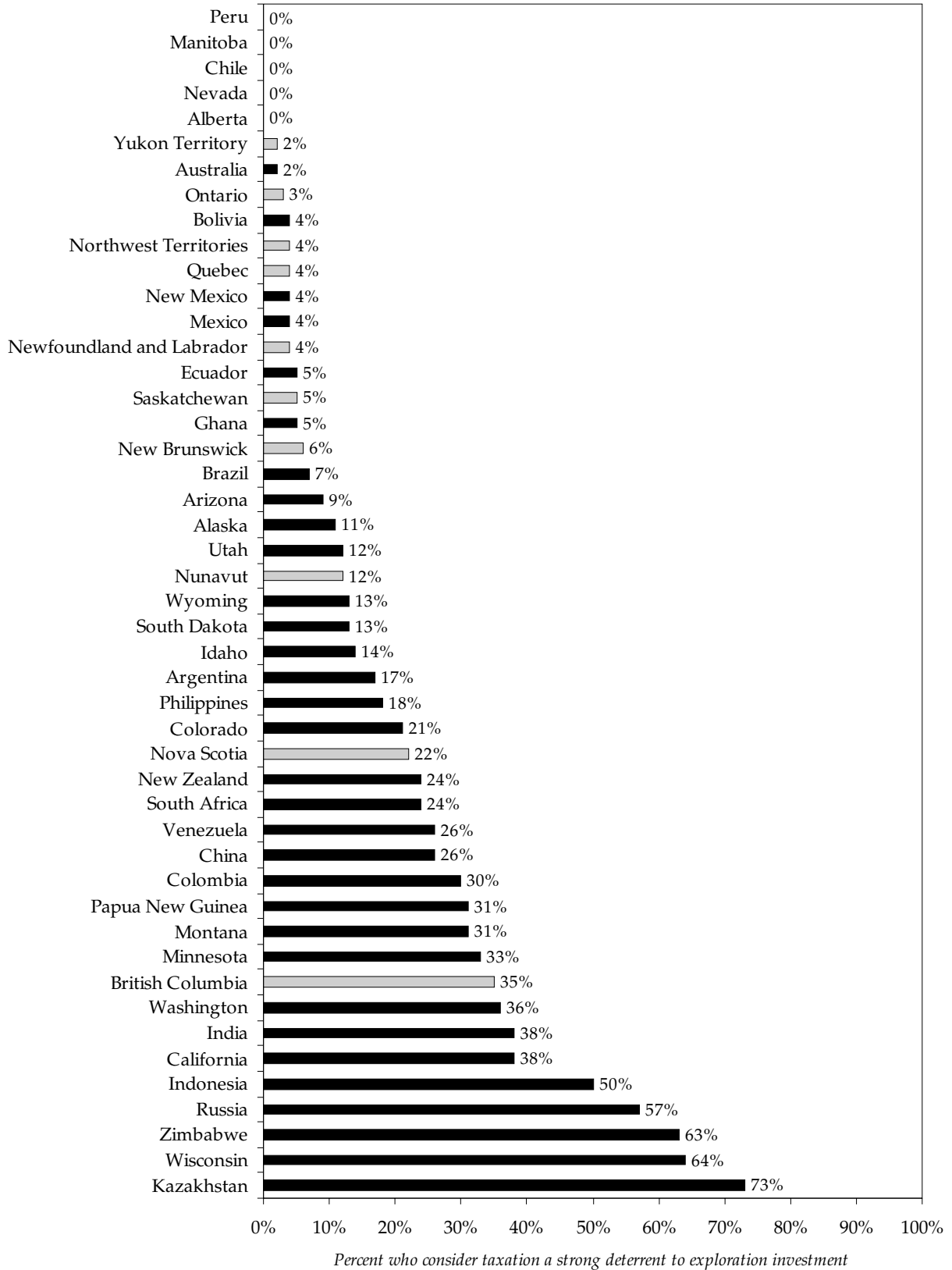
*“Bolivia has revamped its mining code and tax structuring within the past 2 years to clarify a very unclear picture on mining regulation and taxation. The country also passed legislation liberating most capital goods from import duties and burdensome procedures. Regions (Patosi and Oruro) also have enacted sweeping tax relief for mining investment.”*

—President, junior mining company

*“Canada, especially Quebec, [has] generally well-defined, balanced policies. I find Quebec is mining-friendly with [an] encouraging tax regime.”*

—Chief Geologist, junior mining company

**Figure 9: Taxation Regime**



## Infrastructure

*“Australia [has a] good infrastructure [and] mining investment climate.” It’s a “mining country, cheap, safe.”*  
—COO, junior mining company

*“Quebec has an excellent mining infrastructure and active mining culture. The Quebec government understands mining, knows its value to the economy, and actively supports it.”*  
—Vice President, junior mining company

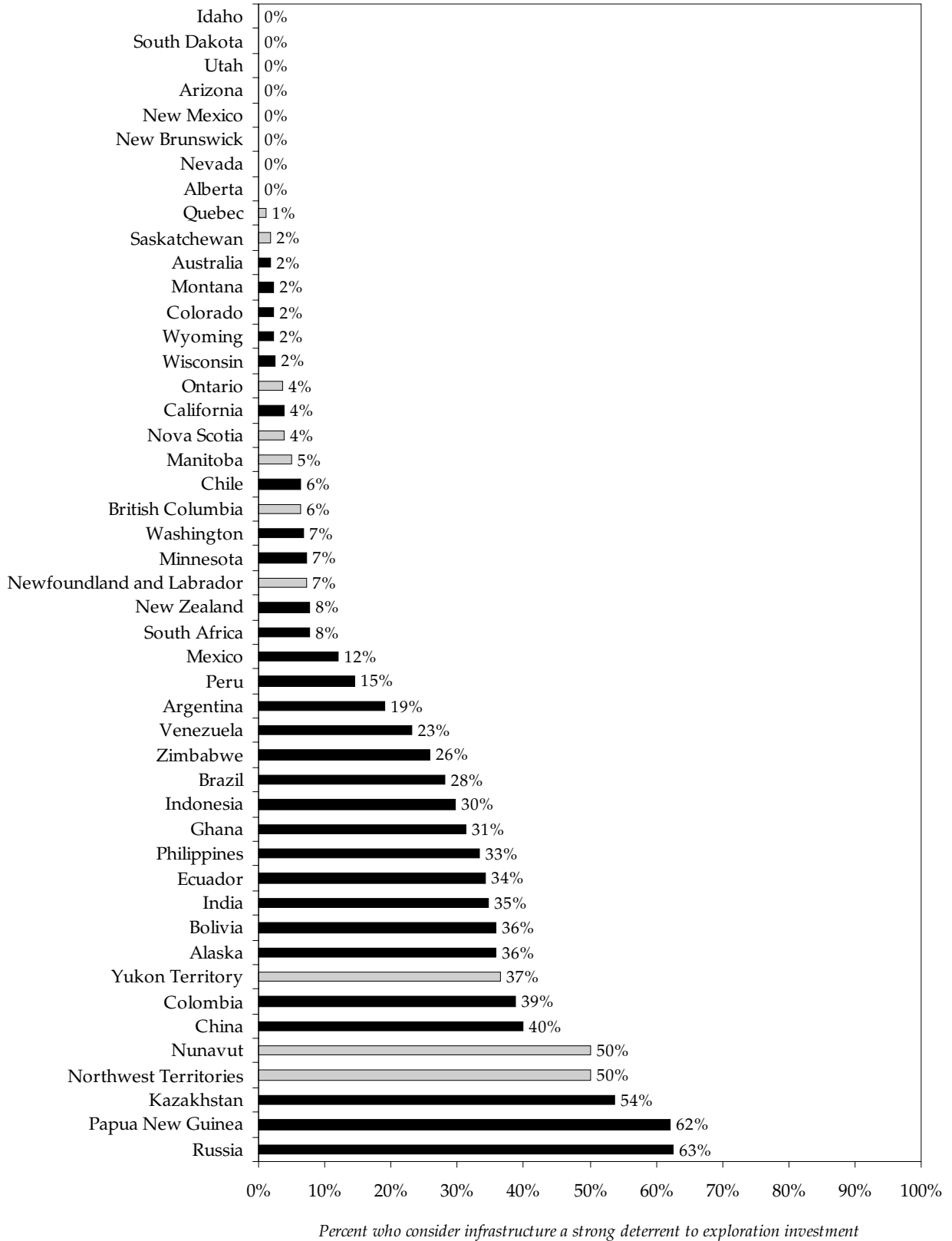
*“The entire mineral industry in Indonesia for the last 4 years is a horror story. At the current rate extractive industry here will be dead in 5-8 years (exploration already is!)”*  
—Executive VP Exploration, senior mining company

*“We have had a great deal of help and fairness working with the Utah Department of Oil, Gas and Mining on our projects.”*  
—Vice President, junior mining company

*“Quebec [provides] excellent data available from government...” It has a “high quality government geological database and financial incentives.”*  
—President, junior mining company

*In “Quebec [we are] welcome.” They have good “security of tenure [and] cost and availability of support and data.”*  
—President, junior mining company

**Figure 10: Infrastructure**



## Labour Regulation/Employment Agreements

*“South America [has a] relaxed regulatory climate [and] low labor costs.”*

—Vice President Government Affairs, junior mining company

*“Chile [offers] land title and permitting guarantees, [a] workable mining code, [and] pro mining legislation.”*

—Vice President, junior mining company

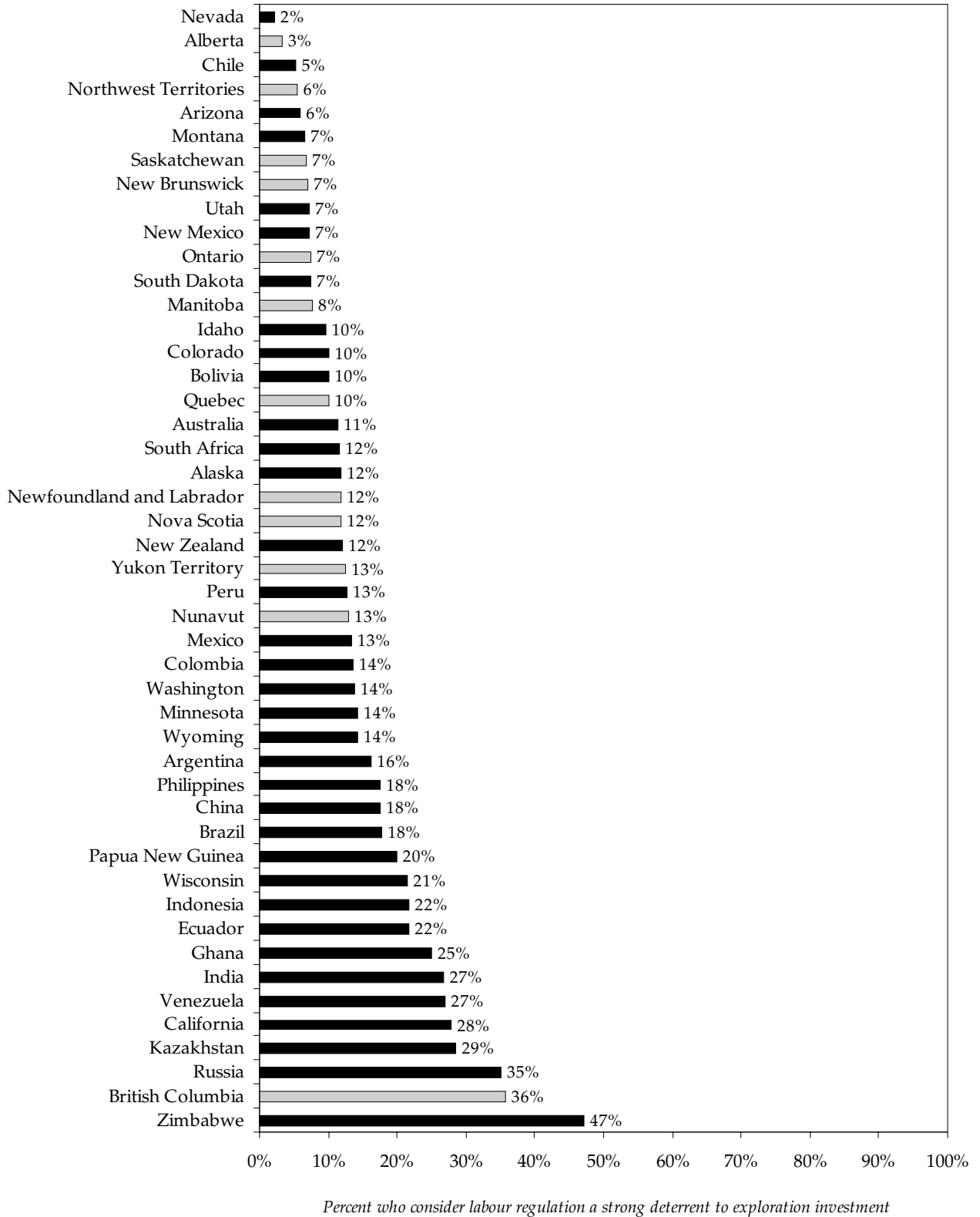
*“In my opinion and not having worked extensively outside of Canada, I believe that Manitoba has the best policies towards mining. Manitoba has a clear legislative and regulatory pathway to mine and environmental permitting. Manitoba has set up a transparent Treaty Land Entitlement process to deal with aboriginal land claims. Manitoba supports an active and scientifically credible provincial geological survey. Manitoba politicians are readily available at mining meetings.”*

—Vice President Exploration, junior mining company

*“China, India, Indonesia, Philippines, Zimbabwe, [and] Congo” have the worst policies. “Their cultures either do not value mining highly or they favour locals versus foreigners.” Unfortunately, “corruption is not really subject to policy.”*

—President, junior mining company

**Figure 11: Labour Regulation**



## Political Stability

*“Kazakhstan [has an] entirely corrupt political system.”*

—Mining and Exploration Manager, junior mining company

Russia has unfavourable policies, including *“political, regulatory and legal harassment (freezing accounts) because of refusal to cooperate with continuing and increasing ‘payoffs.’”*

—Evaluations Manager, senior mining company

The jurisdictions with unfavourable policies include the *“Former Communist States: USSR, China. Bodies of ‘ownership’ laws have yet to evolve in these countries [They should start] allowing private (or ‘private’ corporate) ownership of resources.”*

—President, junior mining company

*“At one time the government [of Brazil] froze the ability to remove revenues or dividend payments from the country due to currency problems which severely restricted the ability to conduct effective business.”*

—Director, senior mining company

*“Indonesia and Russia [are] corrupt [and take] too long for permitting. [We] never know if we own the mining titles.”*

—President, junior mining company

*“I have just the opposite story. [One mining company] was active in Indonesia, having obtained a number of different CoW’s [Contracts of Work] in 1996-97 for an exploration program. Each CoW required a “seriousness bond” that would be refundable if the contracted work program was completed. Despite the uproar that accompanied the end of the Suharto regime, the seriousness bonds were fully refunded by the Indonesia government.”*

—Vice President Exploration, junior mining company

In *“Venezuela, land titles, regulations [are] non-existent!!! [They] make rules as they go along. [They should] make government institutions non-partisan, non-corrupt, and accountable.”*

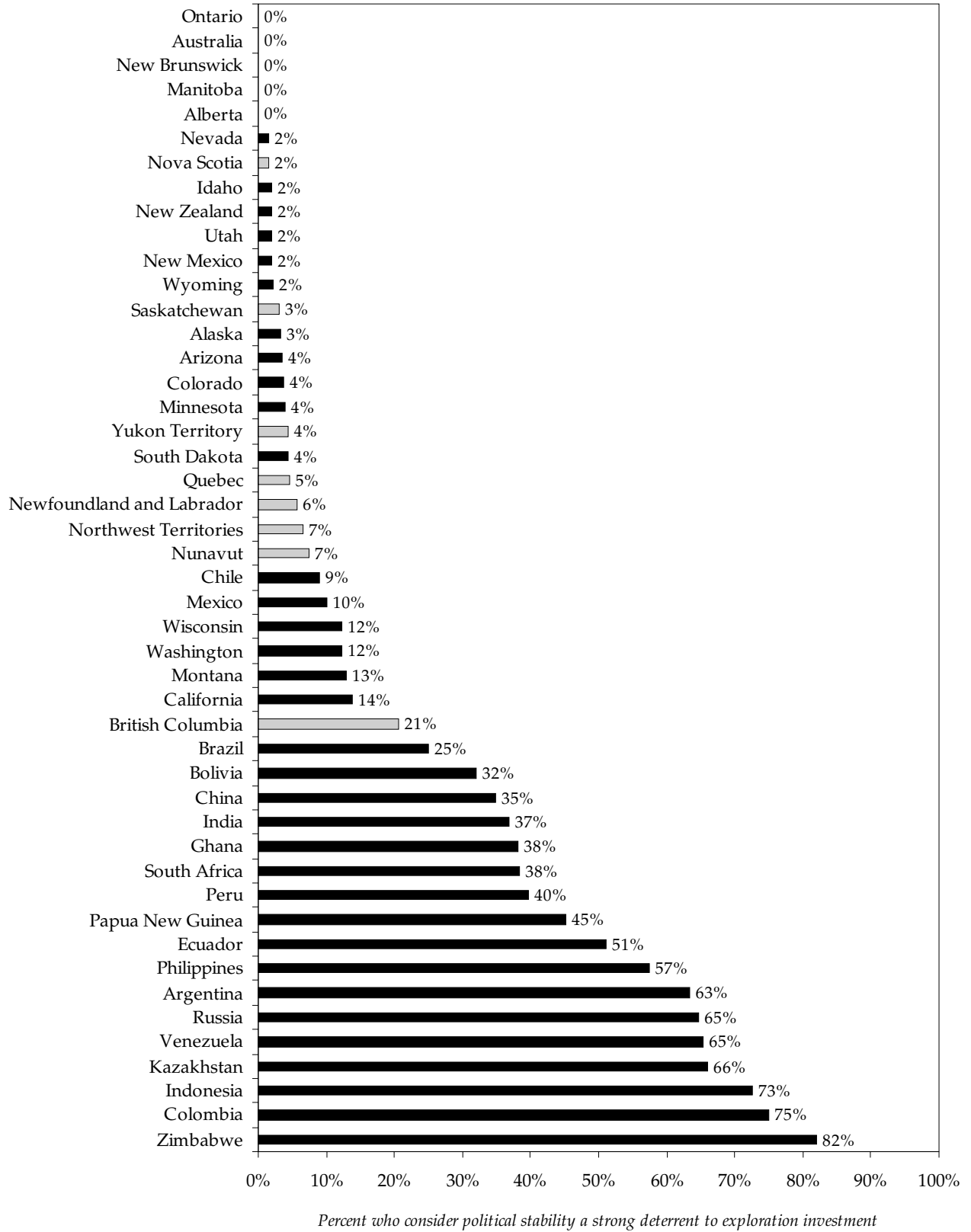
—Vice President Exploration, junior mining company

*“Philippines [has] too much graft and corruption!”* The nation should develop an *“adherence to policy by government officials and strong deterrence towards graft and corruption.”*

—Director, junior mining company



**Figure 12: Political Stability**



## Socioeconomic Agreements

In “South Africa [the] leaking of a draft Mining Charter for the new Minerals and Petroleum Bill that hinted at compulsory majority ownership to empowerment companies of new mining projects had a significant effect on foreign investment and confidence.”

—Director, senior mining company

In “Quebec, the predominant approach by government authorities is to find solutions with the industry.”

—President and CEO, junior mining company

“Large portions of U.S. and Canada” are the worst places to try to mine because of the “stereotypical views of mining held by governments and the public which regard the industry as rapacious polluters.”

—President, junior mining company

In Voisey’s Bay, “political interference [and] poor policy destroyed value.”

—Director of Exploration, senior mining company

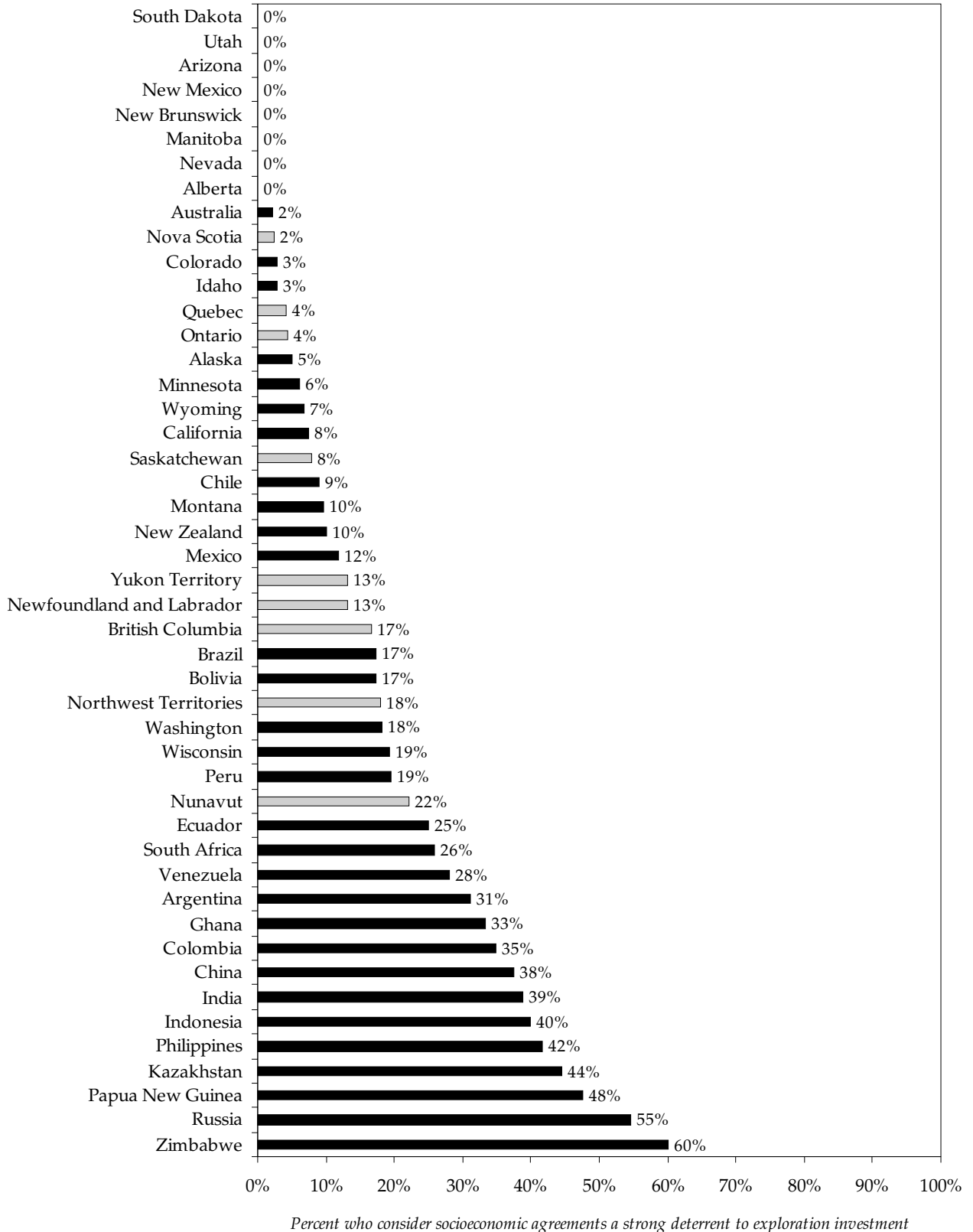
“They have a long history of mineral production [in Quebec] and recognize that mineral production can be very beneficial to remote areas and the province in general.”

—Vice President, Exploration, junior mining company

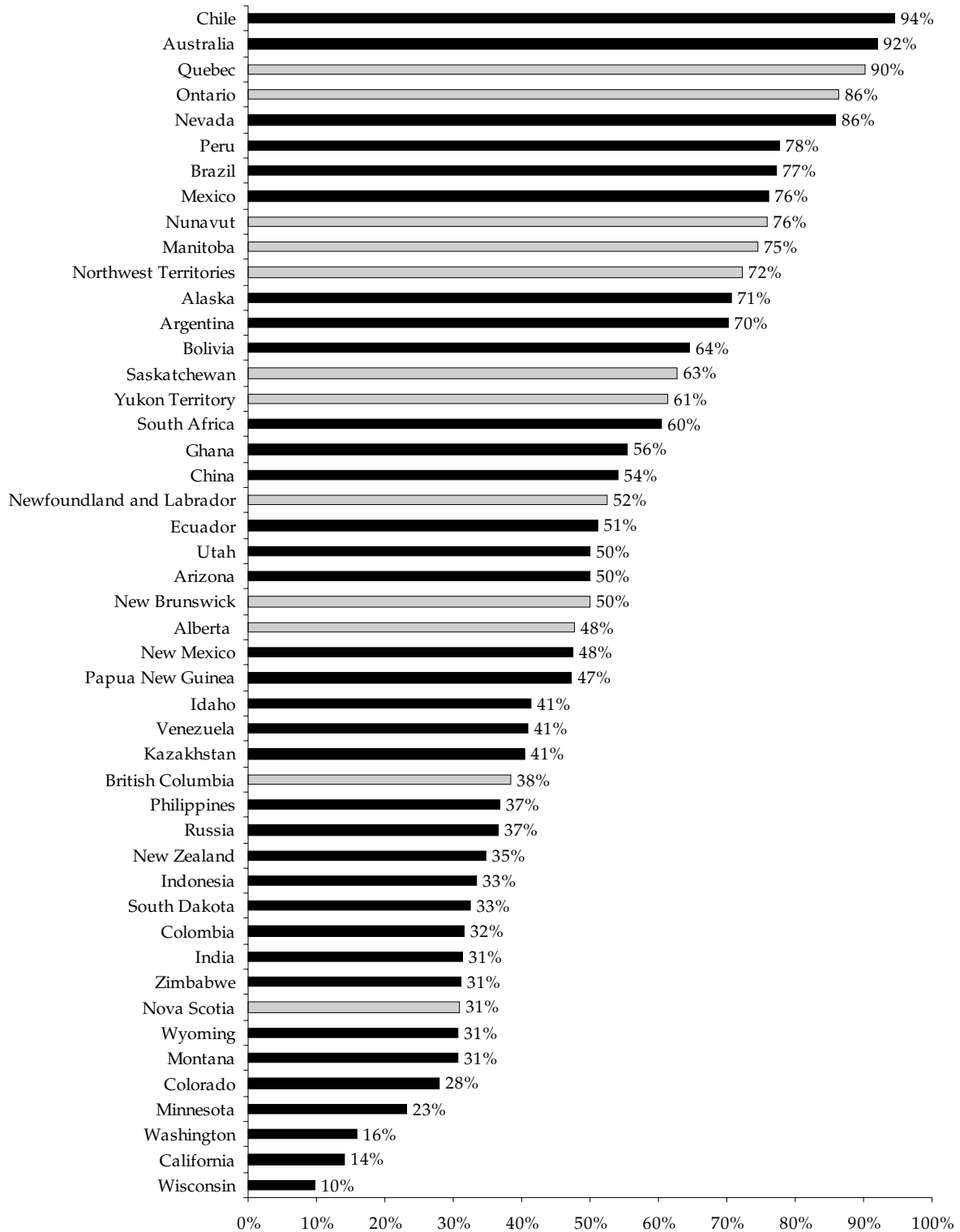
“An example of a good jurisdiction is NW Quebec where people are pro-mining, government is proactive with industry, and the best environmentally conscious developments are achieved with minimum delays.”

—Executive Vice President, intermediate mining company

**Figure 13: Socioeconomic Agreements**

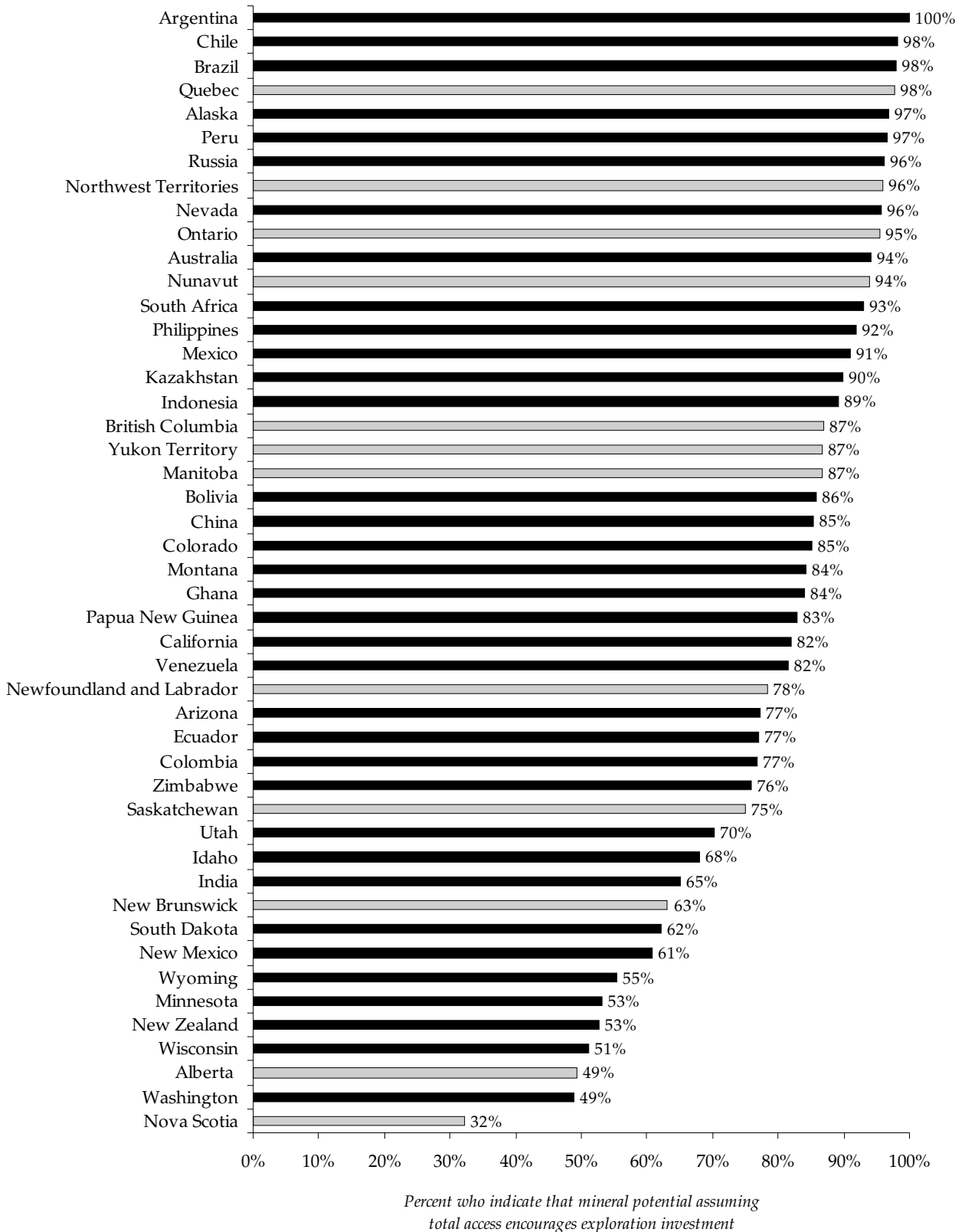


**Figure 14: Mineral Potential Assuming Current Regulation/Land Use Policies**



*Percent who indicate that mineral potential assuming current land use policies encourages exploration*

**Figure 15: Mineral Potential Assuming NO Land Use Restrictions in Place, and Further Assuming Industry “Best Practice” Standards**





## **Tabular Material**

**Table 1a: Percentage of Respondents who Indicate Factors Encourage Exploration Investment\***

<b>Country/ Region</b>	<b>Jurisdiction</b>	<b>Regula- tory Uncer- tainty</b>	<b>Regula- tory Duplica- tion</b>	<b>Environ- mental Regula- tions</b>	<b>Protected Areas Uncer- tainty</b>	<b>Land Claims Uncer- tainty</b>	<b>Taxation</b>
Canada	Alberta	80%	65%	56%	53%	48%	88%
	British Columbia	11%	12%	12%	5%	1%	31%
	Manitoba	75%	74%	67%	59%	44%	81%
	New Brunswick	77%	68%	51%	57%	38%	71%
	Newfoundland	54%	55%	56%	48%	37%	78%
	Northwest Terri- tories	47%	37%	34%	32%	20%	61%
	Nova Scotia	61%	56%	42%	51%	39%	61%
	Nunavut	43%	42%	34%	35%	39%	65%
	Ontario	82%	64%	62%	35%	40%	75%
	Quebec	91%	73%	70%	59%	58%	88%
	Saskatchewan	66%	55%	50%	45%	43%	74%
Yukon Territory	55%	44%	36%	22%	23%	68%	
USA	Alaska	49%	39%	24%	17%	62%	68%
	Arizona	39%	35%	29%	31%	63%	69%
	California	8%	15%	4%	8%	63%	35%
	Colorado	11%	17%	8%	13%	58%	43%
	Idaho	32%	27%	27%	16%	63%	57%
	Minnesota	16%	7%	6%	18%	59%	38%
	Montana	12%	17%	9%	17%	63%	46%
	Nevada	77%	66%	64%	56%	69%	94%
	New Mexico	28%	38%	22%	23%	53%	71%
	South Dakota	16%	22%	15%	8%	59%	61%
	Utah	36%	36%	35%	23%	66%	65%
	Washington	5%	10%	3%	7%	55%	32%
	Wisconsin	6%	7%	3%	7%	46%	28%
Wyoming	28%	19%	20%	18%	56%	61%	



**Table 1a: Percentage of Respondents who Indicate Factors Encourage Exploration Investment\***

<b>Country/ Region</b>	<b>Jurisdiction</b>	<b>Regula- tory Uncer- tainty</b>	<b>Regula- tory Duplica- tion</b>	<b>Environ- mental Regula- tions</b>	<b>Protected Areas Uncer- tainty</b>	<b>Land Claims Uncer- tainty</b>	<b>Taxation</b>
Latin America	Argentina	24%	50%	80%	85%	73%	57%
	Bolivia	40%	66%	88%	80%	64%	75%
	Brazil	39%	54%	85%	69%	62%	64%
	Chile	85%	89%	88%	87%	89%	98%
	Colombia	4%	33%	71%	70%	55%	45%
	Ecuador	19%	50%	65%	59%	54%	45%
	Mexico	70%	59%	80%	72%	61%	66%
	Peru	55%	61%	83%	71%	58%	74%
	Venezuela	14%	29%	67%	58%	52%	48%
Inter- national	Australia	86%	78%	61%	44%	6%	72%
	New Zealand	29%	48%	23%	8%	32%	38%
	South Africa	37%	46%	69%	65%	27%	45%
	Ghana	48%	50%	73%	53%	68%	58%
	Zimbabwe	7%	24%	63%	61%	18%	21%
	China	17%	37%	79%	71%	68%	37%
	India	12%	14%	58%	50%	46%	13%
	Indonesia	12%	26%	64%	33%	21%	36%
	Kazakhstan	4%	20%	71%	85%	47%	9%
	Papua New Guinea	26%	36%	53%	60%	14%	31%
	Philippines	12%	24%	43%	42%	15%	18%
	Russia	6%	46%	62%	69%	68%	13%

\*This includes both those respondents who claim the factor “encourages exploration investment” and those who indicate the factor is “not a deterrent to exploration investment.”

**Table 1b: Percentage of Respondents who Indicate Factors Encourage Exploration Investment\***

<b>Country/ Region</b>	<b>Jurisdiction</b>	<b>Infra- structure</b>	<b>Labour Regu- lation</b>	<b>Political Stability</b>	<b>Socio- economic Agree- ments</b>	<b>Mineral Potential Assuming Current Regula- tion</b>	<b>Mineral Potential Assuming No Land Use Re- strictions</b>
Canada	Alberta	97%	78%	99%	84%	48%	49%
	British Columbia	60%	27%	63%	42%	38%	87%
	Manitoba	78%	65%	96%	77%	75%	87%
	New Brunswick	92%	65%	94%	75%	50%	63%
	Newfoundland	59%	67%	84%	49%	52%	78%
	Northwest Territories	15%	57%	80%	36%	72%	96%
	Nova Scotia	87%	64%	90%	67%	31%	32%
	Nunavut	14%	48%	79%	28%	76%	94%
	Ontario	80%	71%	95%	74%	86%	95%
	Quebec	87%	67%	83%	81%	90%	98%
	Saskatchewan	77%	57%	89%	73%	63%	75%
Yukon Territory	22%	58%	76%	45%	61%	87%	
USA	Alaska	26%	47%	81%	60%	71%	97%
	Arizona	92%	65%	88%	76%	50%	77%
	California	88%	44%	72%	60%	14%	82%
	Colorado	84%	57%	81%	65%	28%	85%
	Idaho	84%	61%	91%	68%	41%	68%
	Minnesota	83%	50%	84%	64%	23%	53%
	Montana	78%	60%	78%	65%	31%	84%
	Nevada	97%	82%	95%	83%	86%	96%
	New Mexico	89%	68%	92%	71%	48%	61%
	South Dakota	83%	70%	89%	72%	33%	62%
	Utah	88%	64%	88%	76%	50%	70%
	Washington	73%	45%	78%	55%	16%	49%
	Wisconsin	86%	46%	76%	58%	10%	51%
	Wyoming	80%	57%	88%	69%	31%	55%

**Table 1b: Percentage of Respondents who Indicate Factors Encourage Exploration Investment\***

<b>Country/ Region</b>	<b>Jurisdiction</b>	<b>Infra- structure</b>	<b>Labour Regu- lation</b>	<b>Political Stability</b>	<b>Socio- economic Agree- ments</b>	<b>Mineral Potential Assuming Current Regula- tion</b>	<b>Mineral Potential Assuming No Land Use Re- strictions</b>
Latin America	Argentina	43%	48%	8%	34%	70%	100%
	Bolivia	29%	50%	24%	34%	64%	86%
	Brazil	33%	54%	38%	52%	77%	98%
	Chile	74%	82%	82%	70%	94%	98%
	Colombia	19%	50%	4%	26%	32%	77%
	Ecuador	31%	52%	11%	38%	51%	77%
	Mexico	57%	58%	59%	50%	76%	91%
	Peru	38%	54%	21%	28%	78%	97%
	Venezuela	36%	46%	6%	32%	41%	82%
Inter- national	Australia	76%	61%	94%	73%	92%	94%
	New Zealand	64%	60%	92%	60%	35%	53%
	South Africa	74%	54%	23%	23%	60%	93%
	Ghana	19%	60%	33%	43%	56%	84%
	Zimbabwe	33%	41%	8%	24%	31%	76%
	China	10%	53%	37%	38%	54%	85%
	India	13%	60%	21%	22%	31%	65%
	Indonesia	5%	35%	4%	20%	33%	89%
	Kazakhstan	4%	43%	7%	11%	41%	90%
	Papua New Guinea	10%	47%	14%	14%	47%	83%
	Philippines	17%	59%	11%	8%	37%	92%
	Russia	6%	40%	15%	9%	37%	96%

\*This includes both those respondents who claim the factor “encourages exploration investment” and those who indicate the factor is “not a deterrent to exploration investment.”

**Table 2a: Percentage of Respondents who Consider Factors Strong Deterrents to Investment\***

<b>Country/ Region</b>	<b>Jurisdiction</b>	<b>Regu- latory Uncer- tainty</b>	<b>Regu- latory Duplication</b>	<b>Environ- mental Regula- tions</b>	<b>Protected Areas Uncer- tainty</b>	<b>Land Claims Uncer- tainty</b>
Canada	Alberta	2%	2%	12%	15%	17%
	British Columbia	55%	54%	63%	70%	78%
	Manitoba	8%	6%	9%	13%	20%
	New Brunswick	0%	5%	17%	17%	24%
	Newfoundland	25%	22%	15%	24%	31%
	Northwest Territories	15%	31%	30%	30%	34%
	Nova Scotia	25%	28%	35%	27%	27%
	Nunavut	22%	22%	28%	31%	28%
	Ontario	3%	6%	10%	24%	23%
	Quebec	3%	3%	10%	12%	16%
	Saskatchewan	6%	7%	16%	14%	15%
	Yukon Territory	17%	27%	30%	42%	31%
USA	Alaska	26%	25%	41%	39%	17%
	Arizona	18%	24%	32%	34%	9%
	California	58%	68%	83%	62%	21%
	Colorado	45%	50%	60%	53%	16%
	Idaho	29%	27%	44%	41%	16%
	Minnesota	38%	41%	65%	43%	14%
	Montana	61%	40%	77%	43%	10%
	Nevada	6%	9%	11%	22%	7%
	New Mexico	24%	13%	47%	35%	7%
	South Dakota	28%	26%	48%	38%	7%
	Utah	25%	28%	39%	35%	10%
	Washington	73%	53%	89%	54%	23%
	Wisconsin	77%	69%	93%	62%	21%
	Wyoming	28%	27%	40%	32%	11%

**Table 2a: Percentage of Respondents who Consider Factors  
Strong Deterrents to Investment\***

<b>Country/ Region</b>	<b>Jurisdiction</b>	<b>Regu- latory Uncer- tainty</b>	<b>Regu- latory Duplication</b>	<b>Environ- mental Regula- tions</b>	<b>Protected Areas Uncer- tainty</b>	<b>Land Claims Uncer- tainty</b>
Latin America	Argentina	42%	13%	0%	8%	13%
	Bolivia	20%	3%	3%	8%	7%
	Brazil	21%	4%	0%	8%	14%
	Chile	4%	0%	0%	6%	6%
	Colombia	54%	14%	0%	10%	27%
	Ecuador	37%	14%	4%	14%	17%
	Mexico	9%	20%	0%	3%	11%
	Peru	14%	11%	0%	9%	14%
	Venezuela	54%	21%	3%	13%	20%
Inter- national	Australia	0%	7%	6%	13%	29%
	New Zealand	36%	30%	54%	56%	29%
	South Africa	34%	29%	7%	13%	27%
	Ghana	33%	30%	5%	29%	14%
	Zimbabwe	79%	59%	5%	28%	73%
	China	66%	42%	5%	24%	14%
	India	76%	64%	8%	33%	23%
	Indonesia	70%	61%	20%	38%	46%
	Kazakhstan	74%	47%	0%	15%	47%
	Papua New Guinea	53%	43%	18%	60%	52%
	Philippines	62%	41%	14%	42%	60%
	Russia	84%	76%	10%	69%	21%

\*This includes both those respondents who claim the factor is a “strong deterrent to exploration investment” and those who “would not pursue exploration investment in this region due to this factor.”

**Table 2b: Percentage of Respondents who Consider Factors  
Strong Deterrents to Investment\***

<b>Country/ Region</b>	<b>Jurisdiction</b>	<b>Infra- structure</b>	<b>Labour Regu- lation</b>	<b>Political Stability</b>	<b>Socio- economic Agree- ments</b>	<b>Mineral Potential Assuming Current Regulation</b>
Canada	Alberta	0%	3%	0%	0%	15%
	British Columbia	6%	36%	21%	17%	33%
	Manitoba	5%	8%	0%	0%	6%
	New Brunswick	0%	7%	0%	0%	16%
	Newfoundland	7%	12%	6%	13%	11%
	Northwest Territories	50%	6%	7%	18%	08%
	Nova Scotia	4%	12%	2%	2%	31%
	Nunavut	50%	13%	7%	22%	10%
	Ontario	4%	7%	0%	4%	4%
	Quebec	1%	10%	5%	4%	5%
	Saskatchewan	2%	7%	3%	8%	10%
	Yukon Territory	37%	13%	4%	13%	16%
USA	Alaska	36%	12%	3%	5%	9%
	Arizona	0%	6%	4%	0%	20%
	California	4%	28%	14%	8%	51%
	Colorado	2%	10%	4%	3%	34%
	Idaho	0%	10%	2%	3%	22%
	Minnesota	7%	14%	4%	6%	42%
	Montana	2%	7%	13%	10%	47%
	Nevada	0%	2%	2%	0%	8%
	New Mexico	0%	7%	2%	0%	20%
	South Dakota	0%	7%	4%	0%	30%
	Utah	0%	7%	2%	0%	23%
	Washington	7%	14%	12%	18%	59%
	Wisconsin	2%	21%	12%	19%	68%
	Wyoming	2%	14%	2%	7%	23%

**Table 2b: Percentage of Respondents who Consider Factors  
Strong Deterrents to Investment\***

<b>Country/ Region</b>	<b>Jurisdiction</b>	<b>Infra- structure</b>	<b>Labour Regu- lation</b>	<b>Political Stability</b>	<b>Socio- economic Agree- ments</b>	<b>Mineral Potential Assuming Current Regulation</b>
Latin America	Argentina	19%	16%	63%	31%	9%
	Bolivia	36%	10%	32%	17%	7%
	Brazil	28%	18%	25%	17%	2%
	Chile	6%	5%	9%	9%	2%
	Colombia	39%	14%	75%	35%	24%
	Ecuador	34%	22%	51%	25%	15%
	Mexico	12%	13%	10%	12%	5%
	Peru	15%	13%	40%	19%	4%
	Venezuela	23%	27%	65%	28%	27%
Inter- national	Australia	2%	11%	0%	2%	2%
	New Zealand	8%	12%	2%	10%	26%
	South Africa	8%	12%	38%	26%	13%
	Ghana	31%	25%	38%	33%	11%
	Zimbabwe	26%	47%	82%	60%	58%
	China	40%	18%	35%	38%	22%
	India	35%	27%	37%	39%	28%
	Indonesia	30%	22%	73%	40%	33%
	Kazakhstan	54%	29%	66%	44%	27%
	Papua New Guinea	62%	20%	45%	48%	25%
	Philippines	33%	18%	57%	42%	24%
	Russia	63%	35%	65%	55%	41%

\*This includes both those respondents who claim the factor is a “strong deterrent to exploration investment” and those who “would not pursue exploration investment in this region due to this factor.”

**Table 3: Number of Companies Indicating a Jurisdiction has the Most/Least Favourable Policies Toward Mining**

	<b>Best</b>	<b>Worst</b>		<b>Best</b>	<b>Worst</b>
Quebec	29	0	1st World	0	1
Canada	17	9	3rd World	1	0
USA	1	24	Alaska	1	0
Chile	24	0	Alberta	1	0
British Columbia	2	21	Argentina	1	0
Ontario	16	0	Armenia	1	0
Australia	11	0	Bolivia	1	0
Nevada	10	0	Brazil	1	0
Zimbabwe	1	9	Britain	0	1
China	2	7	Colombia	0	1
Wisconsin	0	8	Colorado	0	1
Mexico	6	1	Congo	0	1
Russia	0	7	Costa Rica	0	1
California	1	5	Democratic Republic of Congo	0	1
Newfoundland and Labrador	3	3	Ghana	1	0
Peru	5	1	Honduras	1	0
South Africa	3	3	Idaho	1	0
Montana	0	5	India	0	1
Indonesia	0	4	Maine	0	1
Philippines	0	4	Northwest Territories	0	1
Nova Scotia	0	3	Norway	1	0
South America	3	0	Papua New Guinea	1	0
Ecuador	1	1	Saskatchewan	0	1
Kazakhstan	0	2	Sweden	1	0
Manitoba	2	0	Tanzania	1	0
New Zealand	0	2	Wyoming	0	1
Russia	0	2	Yukon	0	1
Venezuela	0	2			
Washington	0	2			
Zambia	1	1			

Note: Table sorted by total votes received, either positive or negative, then alphabetically.



## Section II: Investment Overview

Figures 16 and 17 show where the companies responding to our survey are spending their exploration budgets. Tables 4 and 5 show the changes in investment allocation between 1999 and 2001. Figures 18 through 35 show the changes in proportional exploration investment over the last five years as indicated by the companies investing in the stated jurisdictions.

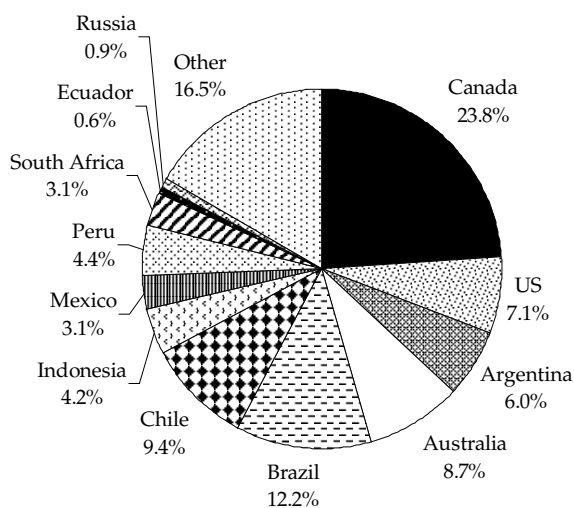
### Senior Mining Companies Go Global

In 2001, senior mining companies (typically larger, producing companies) representing exploration budgets totaling over US\$600 million spent only 34 percent of their budgets in North America—24 percent in Canada, 7 percent in the United States, and 3 percent in Mexico (see figure 16). The remaining 66 percent of the budgets of senior mining companies surveyed was spent exploring in the rest of the world, including 12 percent spent in Brazil, and 9 percent spent in each of Chile and Australia.

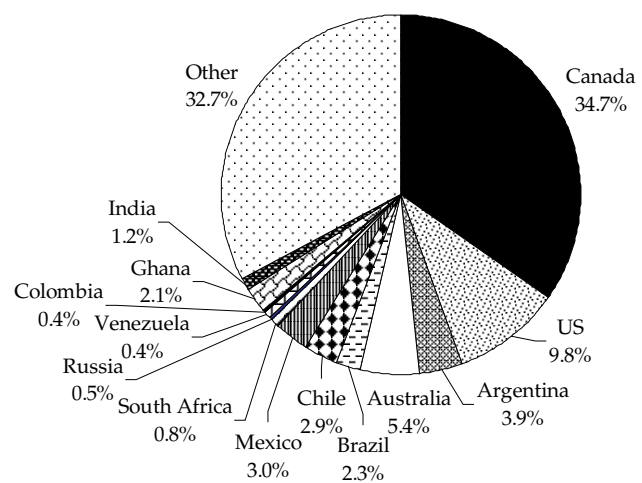
### Junior Mining Companies Stay Close to Home

The junior mining companies (usually smaller, exploring companies) who responded to this survey, representing exploration expenditures of US\$137 million, invested almost half of their exploration budgets in North America in 2001 (see figure 17). They spent almost 35 percent in Canada, 10 percent in the United States, and 3 percent in Mexico. Future surveys will try to capture in greater detail the 33 percent of their exploration budgets spent in “other” jurisdictions.

**Figure 16: Senior Exploration Investment in 2001**  
(total: \$US600.8 million)



**Figure 17: Junior Exploration Investment in 2001**  
(total: \$US137.1 million)



## **Exploration Investment Trends**

Tables 4 and 5 show in greater detail where the companies responding to our survey are spending their exploration budgets, and are beginning to show trends over time. The results for the senior mining companies show that, by investing 24 percent of their exploration budgets in Canada, they have resumed their 1999 spending levels. Levels of US and Latin American investment represented have remained constant since 2000, but Australia saw proportionately less spending this year, down from 13 percent to less than 9 percent.

In 2001, the junior companies responding to this survey once again invested approximately half of their exploration budgets in North America. When comparing their spending patterns to those reported last year (table 5), the biggest change is the proportion of their budgets spent in “other” jurisdictions, up from 19 percent in 2000 to 30 percent in 2001.

## **Mining Companies Show an Even Split in Investment Decisions**

Overall, while 49 percent of companies surveyed indicated that their worldwide exploration budgets have decreased over the past five years (see figure 18), 51 percent indicated that their budgets had not changed (29 percent), or had increased (22 percent).

Many mining companies are decreasing the proportion of their budgets they spend in Indonesia, Venezuela, Bolivia, and Ghana. They are increasing the proportion of their exploration budgets they spend in the other countries, especially Argentina, Australia, Peru, and New Zealand.

Seventy-four percent of the companies that had invested in Canada during the last five years indicated that their exploration budgets had either remained constant or increased. Only 26 percent indicated a decrease. In the US, on the other hand, 42 percent of the companies surveyed indicated that the proportion of their budgets invested in exploring in the United States had decreased over the last five years. A smaller majority—58 percent—indicated that, as a proportion of their overall spending, their American spending had stayed constant or increased.

**Table 4: Senior Mining Company Exploration Expenditures, 1999-2001**

Jurisdiction	1999		2000		2001	
	US\$ (millions)	Percent of total reported	US\$ (millions)	Percent of total reported	US\$ (millions)	Percent of total reported
Canada	93.0	26.2%	107.8	16.6%	143.2	23.8%
US	52.2	14.7%	45.7	7.0%	42.5	7.1%
Argentina	4.6	1.3%	34.7	5.3%	36.1	6.0%
Australia	46.4	13.1%	87.2	13.4%	52.2	8.7%
Brazil	31.0	8.7%	69.8	10.7%	73.2	12.2%
Chile	19.1	5.4%	73.3	11.3%	56.5	9.4%
Indonesia	5.7	1.6%	5.6	0.9%	25.2	4.2%
Mexico	19.7	5.6%	14.1	2.2%	18.7	3.1%
Papua New Guinea	1.0	0.3%	0	0.0%	0.0	0.0%
Peru	11.6	3.3%	28.6	4.4%	26.2	4.4%
South Africa	7.4	2.1%	15.3	2.4%	18.8	3.1%
Ecuador	*	*	6.3	1.0%	3.5	0.6%
Russia	*	*	3.4	0.5%	5.3	0.9%
China	*	*	*	*	1.0	0.2%
Colombia	*	*	*	*	0.2	0.0%
Ghana	*	*	*	*	1.6	0.3%
India	*	*	*	*	2.5	0.4%
Kazakhstan	*	*	*	*	0.5	0.1%
New Zealand	*	*	*	*	3.0	0.5%
Philippines	*	*	*	*	0.2	0.0%
Venezuela	*	*	*	*	2.9	0.5%
Zimbabwe	*	*	*	*	1.0	0.2%
Other	62.8	17.7%	157.7	24.3%	86.5	14.4%
<b>TOTAL</b>	<b>354.5</b>	<b>100.0%</b>	<b>649.7</b>	<b>100.0%</b>	<b>600.8</b>	<b>100.0%</b>

\*Data were not collected for this jurisdiction in this year.

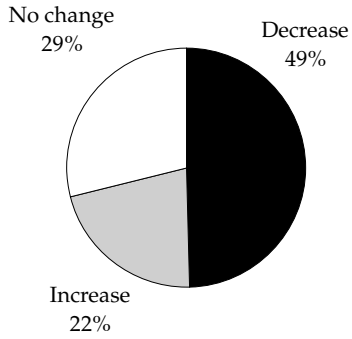
**Table 5: Junior Mining Company Exploration Expenditures, 1999-2001**

Jurisdiction	1999		2000		2001	
	US\$ (millions)	Percent of total reported	US\$ (millions)	Percent of total reported	US\$ (millions)	Percent of total reported
Canada	74.3	20.0%	54.2	40.9%	47.7	34.8%
US	56.7	15.3%	11.5	8.7%	13.5	9.8%
Argentina	17.4	4.7%	1.2	0.9%	5.3	3.9%
Australia	44.3	11.9%	4.5	3.4%	7.4	5.4%
Brazil	66.2	17.8%	4.0	3.0%	3.1	2.3%
Chile	10.7	2.9%	0.1	0.1%	4.0	2.9%
Indonesia	3.7	1.0%	2.2	1.7%	0.5	0.4%
Mexico	12.6	3.4%	7.6	5.7%	4.2	3.0%
Papua New Guinea	5.8	1.6%	0.1	0.1%	0.2	0.1%
Peru	8.7	2.3%	8.3	6.3%	1.2	0.9%
South Africa	3.6	1.0%	2.1	1.6%	1.0	0.8%
Bolivia	*	*	2.1	1.6%	0.2	0.1%
Ecuador	*	*	2.6	2.0%	0.0	0.0%
Philippines	*	*	3.7	2.8%	0.1	0.1%
Russia	*	*	2.1	1.6%	0.7	0.5%
Venezuela	*	*	1.0	0.8%	0.6	0.5%
China	*	*	*	*	0.1	0.1%
Colombia	*	*	*	*	0.6	0.4%
Ghana	*	*	*	*	3.0	2.2%
India	*	*	*	*	1.6	1.2%
New Zealand	*	*	*	*	0.4	0.3%
Other	67.4	18.1%	25.1	18.9%	41.7	30.4%
<b>TOTAL</b>	<b>371.4</b>	<b>100.0%</b>	<b>132.5</b>	<b>100.0%</b>	<b>137.1</b>	<b>100.0%</b>

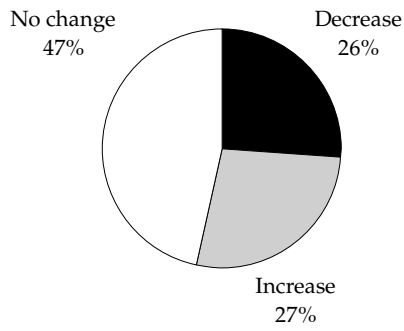
\*Data were not collected for this jurisdiction in this year.

## Change in Exploration Budgets Between 1996 and 2001

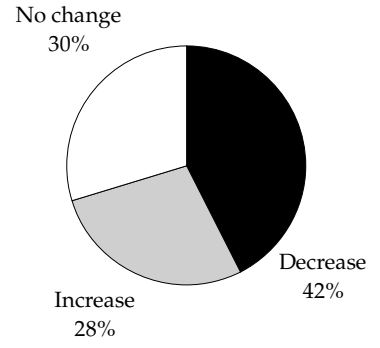
**Figure 18: Worldwide**



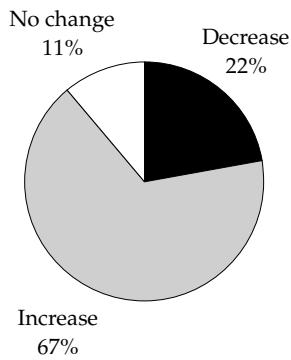
**Figure 19: In Canada**



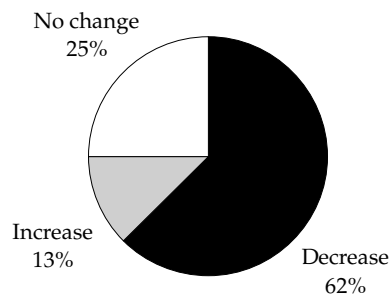
**Figure 20: In USA**



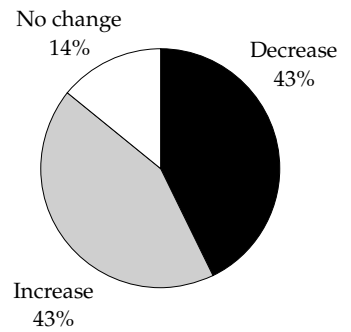
**Figure 21: In Argentina**



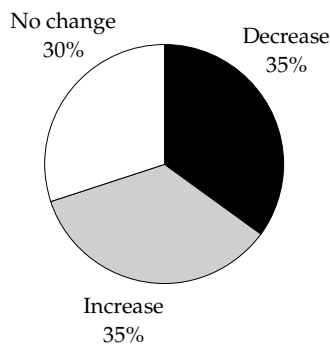
**Figure 22: In Bolivia**



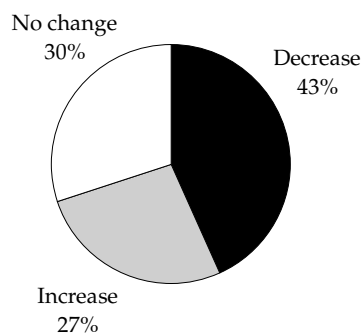
**Figure 23: In Brazil**



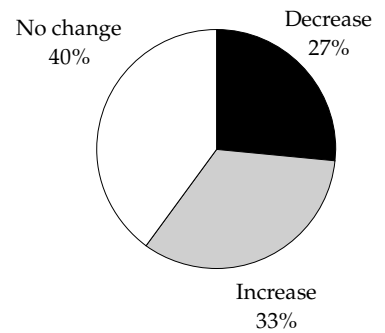
**Figure 24: In Chile**



**Figure 25: In Mexico**

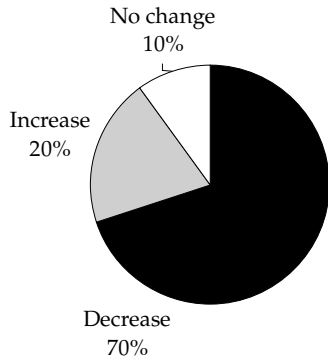


**Figure 26: In Peru**

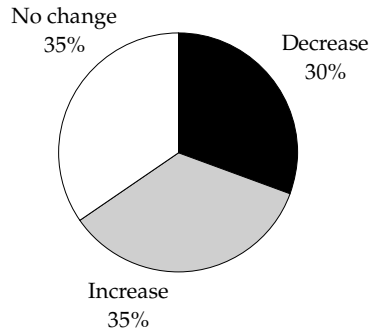


## Change in Exploration Budgets Between 1996 and 2001

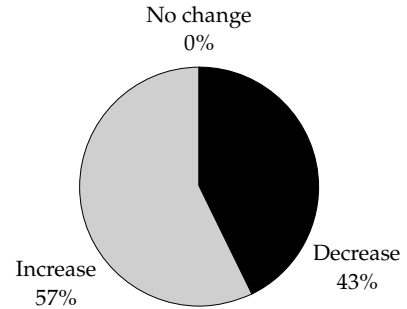
**Figure 27: In Venezuela**



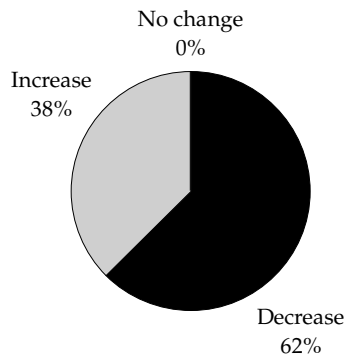
**Figure 28: In Australia**



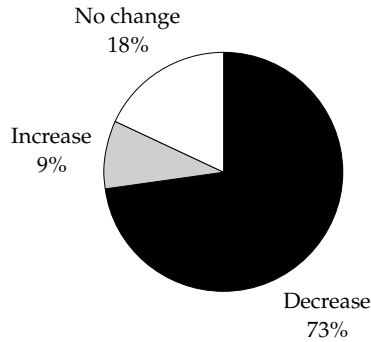
**Figure 29: In China**



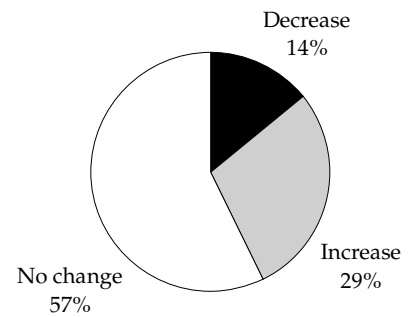
**Figure 30: In Ghana**



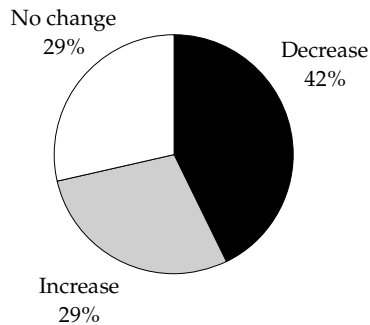
**Figure 31: In Indonesia**



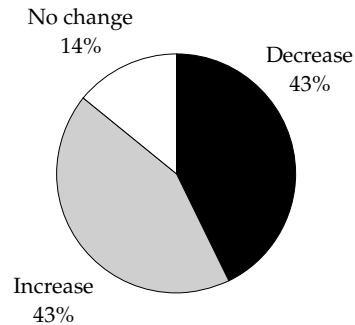
**Figure 32: In New Zealand**



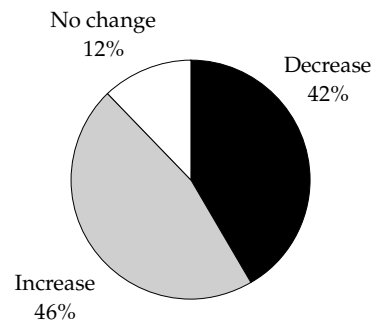
**Figure 33: In Russia**



**Figure 34: In South Africa**



**Figure 35: In All Other Jurisdictions\***



\*Includes jurisdictions that were not specifically mentioned in the questionnaire, and jurisdictions that received fewer total responses (Colombia, Ecuador, India, Kazakhstan, Papua New Guinea, Philippines, and Zimbabwe).

## **Appendix A: Comparing Canadian Jurisdictions Using Data— Preliminary Findings**

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As a complement to the survey opinions presented in the first section of the report, this appendix has been added to include data on factors such as taxation and labour with which to compare the attractiveness to the mining industry of the business climates of the Canadian provinces and territories. Including such data is a logical extension of the more subjective survey component of the report as they may provide some insight into what is causing some regions to score well and others poorly on the opinion survey. We began to develop an “objective index” to compare with the first section of the report at the suggestion of the Prospectors and Developers Association of Canada (PDAC) last year. The authors would like to thank the PDAC for their continued support and invaluable input and suggestions for improvement of this report.

Finding measurable indicators to compare with the subjective questions asked in the opinion section of the report has not been easy. In some cases, data were unavailable. In other cases, available data were limited. For example, in the taxation category we considered the tax burden on a hypothetical mine, for which only one model was available. In other cases, such as regulatory delays, good measures continue to prove elusive. In still other cases, measures such as government subsidies may make jurisdictions more attractive to mining companies, but they may also create problems elsewhere in the economy that affect their apparent benefit to mining companies. Finally, factors that survey respondents say are important, such as “the attitude of the regulators,” are virtually impossible to measure. The data presented in this section should, therefore, be seen as a complement rather than a substitute for the opinion data presented in the first part of the report. Over the next several years, we hope to continue to expand this section of the report to include more jurisdictions, more variables, and additional categories. We hope that this survey and companion index will encourage policy makers to create fair, stable, and consistent regulatory frameworks in which mining companies, as a proxy for other industries, can operate without experiencing what appears to be institutionalized bias. Your suggestions have been most helpful in the past and continue to be welcome.

In order to identify policy differences between Canadian jurisdictions, we looked at 24 variables in 5 different categories: taxation, regulation, labour, land access, and infrastructure. Available data in each category are described below. While recognizing that available data do not completely describe the important characteristics of operating in different jurisdictions, and realizing that the objective structure of existing policies cannot capture the often more subjective implementation of those policies, this section does provide a starting place for comparing the policies in regions across Canada.

### **Taxation**

The taxation category contains four variables (see table 1). The first is the total taxes paid over the 13-year lifetime of a hypothetical gold mine. These numbers come from the October update to the PricewaterhouseCoopers report, *Canadian Mining Taxation*, 2002 edition. The tax burden includes

federal taxes, provincial income and capital taxes, and provincial mining taxes. The second taxation indicator is the existence of capital taxes. All else being equal, those jurisdictions with capital taxes are considered less attractive than those without capital taxes. The third taxation indicator is a standardized page count on provincial mining tax acts and their supporting regulation. This provides some information on the complexity of the tax system. Jurisdictions with lengthier legislation are considered to have more onerous tax systems. The final variable is whether or not the jurisdiction imposes a gross royalty or net smelter royalty tax, which, like capital taxes, renders a jurisdiction less attractive, all else being equal.

## Regulation

The regulation category includes 10 variables (see table 2). The first two indicators measure the complexity and costs of environmental regulation in a jurisdiction, first by measuring the percentage of exploration and deposit appraisal expenditures (averaged over the five years 1997 to 2001) spent on environmental compliance, and second, through a page count of the environmental acts and regulations that affect mining, including provincial and territorial parks acts, endangered species legislation, and water and fish protection acts. The next 8 variables apply to regulations and permitting procedures specific to the mining industry. The first is a page count of mining acts and regulations. Both this and the previous variable assume that a higher page count (standardized for page size and bilingual publishing) indicates more onerous policies. The next two variables measure the initial term granted for a mineral claim (exploration phase) and mining lease (mining phase) with the assumption that longer terms are more attractive. We also looked at the maximum area granted for a mineral claim and mining lease assuming that a larger area was more attractive. We also looked at the way reclamation bond requirements are administered in each jurisdiction. Although there appears to be some variability within jurisdictions, some tend to allow bonding requirements to be met over

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**Appendix Table I: Taxation**

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	<b>AB</b>	<b>BC</b>	<b>MB</b>	<b>NB</b>	<b>NL</b>	<b>NS</b>	<b>ON</b>	<b>QC</b>	<b>SK</b>	<b>NT</b>	<b>NU</b>	<b>YT</b>
Tax burden on a hypothetical mine (%)	35.2	44.0	42.5	45.7	34.8	43.1*	36.3	39.1	43.5	36.3	37.6	35.7
Capital tax	No	No	Yes	Yes	No	Yes*	Yes	Yes	Yes	No	No	No
Page count for mining taxation acts and regulations (standardized)	31	85	40	32	37	7	48	56	77	15	15	8
Gross royalty or net smelter royalty tax	No	No	No	Yes	Yes	No	No	No	No	No	No	No

\*Nova Scotia's capital tax was not included in the calculation of its tax burden because it is scheduled for repeal effective April 1, 2004.

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time, while in others the bond must be posted up front. The assumption is that meeting the requirement over time is preferable. Finally, we looked at the annual expenditure obligation per hectare, first at just the initial year's expenditure, and finally averaging it over the first 10-year period. For these indicators, a lower financial obligation was deemed to be preferable.

We have not yet determined a satisfactory indicator for a critical regulation variable: delays in regulatory permits, which almost certainly played a role in the subjective evaluation of the jurisdictions. Another important regulatory indicator, the attitude of the regulators, is virtually impossible to measure and therefore is not captured in these data.

**Appendix Table 2: Regulation**

	AB	BC	MB	NB	NL	NS	ON	QC	SK	NT	NU	YT
Percent of exploration and deposit appraisal expenditures (averaged over 1997-2001) spent on environmental compliance (%)	13.6	7.7	0.6	1.1	9.7	8.3	1.1	1.1	3.3	6.2	n/a	8.0
Page count of environmental acts and regulations (standardized)	464	354	186	312	128	146	471	417	612	539	459	722
Page count of mining acts and regulations (standardized)	182	178	293	67	211	109	243	141	95	92	92	94
Initial term granted for mineral claim (years)	10	1	2	1	5	1	1	2	2	2	2	1
Initial term granted for mining lease (years)	15	30	21	20	25	20	21	20	10	21	21	21
Maximum area granted for mineral claim (ha)	9216	500	256	16	25	16.19	256	Variable	6000	1045	1045	20.9
Maximum area granted for mining lease (ha)	2304	No max	800	No max	No max	No max	No max	100	6000	1045	1045	20.9
Reclamation bond requirements	Cumulative	Cumulative	Cumulative	Up front	Cumulative	Up front	Cumulative	Cumulative	Up front	Cumulative	Cumulative	Cumulative
First year expenditure obligation (\$/hectare)	2.50	4.00	0.00	6.250	8.00	12.35	0.00	15.62	0.00	0.00	0.00	4.78
Annual expenditure obligation (average \$/ha over ten years)	5.50	6.80	11.25	15.63	18.00	12.35	22.5	18.75	10.80	4.45	4.45	4.78

## Labour

The labour category (see table 3) contains two indicators: the extent of unionization of the general labour force, and, to get a rough indication of the volatility of the labour situation in each region, the number of labour disputes that have occurred in the mining sector in the past decade (1992 to 2001). To put this number into perspective, we have also included the number of mines that were operating in that region on January 1, 2002. The data for strikes and lockouts come from the Human Resources Development Canada Workplace Information Directorate. The number of mines operating in each jurisdiction comes from Natural Resources Canada, while the unionization data comes from Statistics Canada.

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**Appendix Table 3: Labour**

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	<b>AB</b>	<b>BC</b>	<b>MB</b>	<b>NB</b>	<b>NL</b>	<b>NS</b>	<b>ON</b>	<b>QC</b>	<b>SK</b>	<b>NT</b>	<b>NU</b>	<b>YT</b>
Unionization (%)	24.6	35.1	36.7	28.8	40.0	29.3	27.8	40.4	36.2	n/a	n/a	n/a
Number of mines in operation January 1, 2002	19	28	11	5	6	16	39	38	30	3	3	1
Number of labour disputes in last ten years (1992-2001)	0	4	2	1	1	4	13	24	2	2	0	0

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## Land Access

Three variables form the land access category (see table 4). First, the index uses data from Indian and Northern Affairs Canada to determine the percentage of land claims that remain unsettled in each province. A better indicator might be the percentage of the land base that is covered by land claims, but the data is unavailable in that format. The second variable is the percentage of the land base in a jurisdiction that is off limits to exploration because it is protected. The final variable, which is used to assess uncertainty concerning new land to be set aside, looks at how much growth there has been in protected areas in the last year. Data on protected areas come from the Canadian Conservation Areas Database, which, at the time of publication, had not yet been updated for Quebec.

## Infrastructure

There are five indicators in the infrastructure category this year (see table 5): railway density, road density, and ports (provided by Transport Canada), geoscience availability (provided by the respec-

**Appendix Table 4: Land Access**

	<b>AB</b>	<b>BC</b>	<b>MB</b>	<b>NB</b>	<b>NL</b>	<b>NS</b>	<b>ON</b>	<b>QC</b>	<b>SK</b>	<b>NT</b>	<b>NU</b>	<b>YT</b>
Percent of native land claims that remain unsettled (%)	41	68	41	55	n/a	43	54	54	36	22	22	22
Percent of land protected (%)	16.2	15.9	12.9	5.8	4.6	11.5	9.5	8.5	10.3	17.4	15.7	13.8
Protected area growth (%)	0.1	0.2	0.0	0.0	0.02	0.04	0.02	n/a	0.0	0.02	0.0	0.0

tive branches of the Geological Survey), and the percent of exploration and deposit appraisal expenditures (averaged over five years, 1997 to 2001) spent on land access. There are a number of other indicators that could be added to this category in the future, including the availability and cost of power, and further information about geologic data. Another possible indicator is the ease of access of geologic and infrastructure data. For example, how readily available are area maps, and how much information is available on-line?

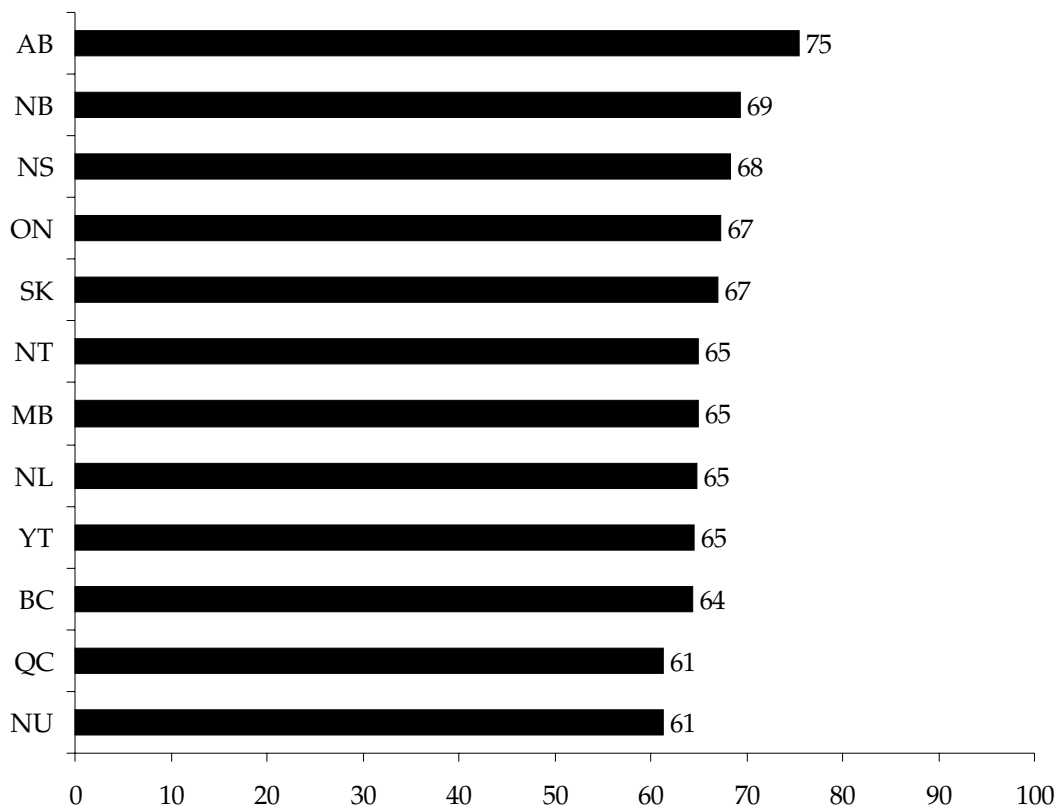
**Appendix Table 5: Infrastructure**

	<b>AB</b>	<b>BC</b>	<b>MB</b>	<b>NB</b>	<b>NL</b>	<b>NS</b>	<b>ON</b>	<b>QC</b>	<b>SK</b>	<b>NT</b>	<b>NU</b>	<b>YT</b>
Railway density (rail km/area km <sup>2</sup> ) (%)	0.011	0.008	0.008	0.014	0.001	0.021	0.011	0.003	0.015	n/a	n/a	n/a
Road density (road km/area km <sup>2</sup> ) (%)	0.334	0.213	0.163	1.051	0.067	0.881	0.213	0.148	0.384	.008	0.000	0.033
Ports	3	103	2	45	58	128	54	72	4	46	n/a	n/a
Geoscience availability—percent of province mapped to 1:50,000 scale	5	15	30	85	27		33	65	7	15	5	18
Percent of exploration and deposit appraisal expenditures (averaged over 1997-2001) spent on land access	0.83	1.30	0.22	0.21	2.72	1.18	0.68	0.17	0.50	1.35	n/a	0.64

## Index Results

An “objective index” comparing the policy attractiveness of Canadian jurisdictions was constructed using the available data described in this appendix. The greatest weight was placed on regulatory and taxation variables, these being the most directly influenced by policy makers in each jurisdiction. The results are shown in Appendix Figure 1 below. Although there is a positive correlation between the survey results and the objective index results, it is a fairly weak correlation. In some cases, such as Alberta, the results are consistent with the opinion index in the first section of the report. In other cases, most noticeably Quebec, the results are inconsistent. There are many possible explanations for this. The objective data used cannot capture the attitudes of the regulators in each jurisdiction, or the ease with which permits can be obtained. Further, it could be that the data used to create the index do not adequately capture the concerns of exploration managers, or it could be that the opinions about operating in some jurisdictions differ from the reality of operating there. We will continue to investigate these concerns in future editions of this report. Improvements to the index might include adding additional variables, as we did this year, or even additional categories. It is also possible that the key data are not yet being gathered, but will become available in future years. The results presented below should, therefore, be considered a “gem in the rough,” still in need of polishing.

**Appendix A Figure 1: Objective Index**



## Appendix B: Survey Questions

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### A. EXPLORATION INVESTMENT

**Note:** For the purposes of this survey, **exploration investment** includes both basic and advanced exploration. This includes all exploration expenditures (financing costs, option payments, finders fees, etc.) incurred in searching for and delineating mineral deposits on properties where no production is taking place.

1. What percentage of your **annual exploration budget in 2001** was spent within:

<b>LATIN AMERICA</b>	<b>NORTH AMERICA</b>	Kazakhstan _____
Argentina _____	Canada _____	New Zealand _____
Bolivia _____	USA _____	Papua New Guinea _____
Brazil _____	<b>WORLD</b>	Philippines _____
Chile _____	Australia _____	Russia _____
Colombia _____	China _____	Ghana _____
Mexico _____	Ghana _____	South Africa _____
Peru _____	India _____	Zimbabwe _____
Venezuela _____	Indonesia _____	<b>Other (not listed)</b> _____

*Should total 100 percent*

2. Has that percentage changed over the 5 years from 1996-2001? If so, please indicate whether there was a positive (+), or negative (-) change, or no change (0).

<b>LATIN AMERICA</b>		<b>NORTH AMERICA</b>	Kazakhstan _____
Argentina _____		Canada _____	New Zealand _____
Bolivia _____		USA _____	Papua New Guinea _____
Brazil _____		<b>WORLD</b>	Philippines _____
Chile _____		Australia _____	Russia _____
Colombia _____		China _____	Ghana _____
Mexico _____		Ghana _____	South Africa _____
Peru _____		India _____	Zimbabwe _____
Venezuela _____		Indonesia _____	<b>Other (not listed)</b> _____

3. Has your total (worldwide) exploration expenditure increased, decreased, or remained the same over the five years from 1996-2001?

Increased \_\_\_\_\_ Decreased \_\_\_\_\_ Remained the Same \_\_\_\_\_

## B. INVESTMENT FACTORS

The following pages list factors such as mineral potential, taxation, and regulations that influence investment decisions. Please use the scale provided to rate each jurisdiction with respect to the factor listed in bold at the top of each page. You need only rate those regions with which you are familiar. If you are unfamiliar with a jurisdiction, leave the question blank or circle "6," the 'do not know' option.

### Scale:

- 1 = encourages exploration investment
- 2 = not a deterrent to exploration investment
- 3 = mild deterrent to exploration investment
- 4 = strong deterrent to exploration investment
- 5 = would not pursue exploration in this region due to this factor
- 6 = do not know

## I. TAXATION REGIME\*

Please circle the appropriate rating, according to the scale in the box below, for the following regions' **TAXATION REGIME** (personal, corporate, payroll, capital taxes and the complexity of tax compliance).

*(See above for key to scale)*

<b>CANADA</b>						
Alberta	1	2	3	4	5	6
British Columbia	1	2	3	4	5	6
Manitoba	1	2	3	4	5	6
New Brunswick	1	2	3	4	5	6
Newfoundland	1	2	3	4	5	6
Northwest Territories	1	2	3	4	5	6
Nova Scotia	1	2	3	4	5	6
Nunavut	1	2	3	4	5	6
Ontario	1	2	3	4	5	6
Quebec	1	2	3	4	5	6
Saskatchewan	1	2	3	4	5	6
Yukon	1	2	3	4	5	6
<b>UNITED STATES</b>						
Alaska	1	2	3	4	5	6
Arizona	1	2	3	4	5	6
California	1	2	3	4	5	6
Colorado	1	2	3	4	5	6
Idaho	1	2	3	4	5	6
Minnesota	1	2	3	4	5	6
Montana	1	2	3	4	5	6
Nevada	1	2	3	4	5	6
New Mexico	1	2	3	4	5	6
South Dakota	1	2	3	4	5	6
Utah	1	2	3	4	5	6
Washington	1	2	3	4	5	6
Wisconsin	1	2	3	4	5	6
Wyoming	1	2	3	4	5	6

<b>LATIN AMERICA</b>						
Argentina	1	2	3	4	5	6
Bolivia	1	2	3	4	5	6
Brazil	1	2	3	4	5	6
Chile	1	2	3	4	5	6
Colombia	1	2	3	4	5	6
Ecuador	1	2	3	4	5	6
Mexico	1	2	3	4	5	6
Peru	1	2	3	4	5	6
Venezuela	1	2	3	4	5	6
<b>OTHER COUNTRIES</b>						
Australia	1	2	3	4	5	6
China	1	2	3	4	5	6
Ghana	1	2	3	4	5	6
India	1	2	3	4	5	6
Indonesia	1	2	3	4	5	6
Kazakhstan	1	2	3	4	5	6
New Zealand	1	2	3	4	5	6
Papua New Guinea	1	2	3	4	5	6
Philippines	1	2	3	4	5	6
Russia	1	2	3	4	5	6
South Africa	1	2	3	4	5	6
Zimbabwe	1	2	3	4	5	6

*\*Repeated for all other factors.*

### **C. INVESTMENT CLIMATE**

1. How would you weight the importance of mineral potential versus policy factors when considering a new exploration project (assuming some basic mineral potential exists)?

Mineral \_\_\_\_\_ %      Policy \_\_\_\_\_ %      (Total 100%)



2. What country or jurisdiction do you think has the **most favourable** policies towards mining?

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Why? \_\_\_\_\_

3. What country or jurisdiction do you think has the **least favourable** policies towards mining?

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Why? \_\_\_\_\_

4. If there could be one policy change in this jurisdiction, what should it be?

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5. If you have an example of either a regulatory “horror story” related to operating in a particular jurisdiction or an example of what you would consider an exemplary policy climate, please describe in the space below. Please attach another sheet if you need more room.

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#### **D. BACKGROUND INFORMATION**

1. Are you a **Junior** or **Senior** mining company?

**Junior** \_\_\_\_\_ **Senior** \_\_\_\_\_

2. What is your position with the company? \_\_\_\_\_

3. What commodity is currently assigned the greatest percentage of your exploration budget?

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4. What jurisdictions, if any, would you like to see added to the survey next year?

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5. What was the value of your **2001 annual exploration expenditures\*** (please specify **\$US** or **\$Canadian**) within:

<b>LATIN AMERICA</b>		<b>NORTH AMERICA</b>		Kazakhstan	_____
Argentina	_____	Canada	_____	New Zealand	_____
Bolivia	_____	USA	_____	Papua New Guinea	_____
Brazil	_____	<b>WORLD</b>		Philippines	_____
Chile	_____	Australia	_____	Russia	_____
Colombia	_____	China	_____	Ghana	_____
Mexico	_____	Ghana	_____	South Africa	_____
Peru	_____	India	_____	Zimbabwe	_____
Venezuela	_____	Indonesia	_____	<b>Other (not listed)</b>	_____

*\*Please note that individual surveys are strictly confidential.*

The information from this question is used to determine the total exploration budgets of all of the companies participating in the survey. If you are uncomfortable giving a specific amount, please give a range.

Thank you for participating in *The Fraser Institute's Annual Survey of Mining Companies*. To ensure that your opinions are included with the results, and to be entered into the thank you draw for Cdn\$1,000, please return your questionnaire with the response card or your business card promptly.

## The Fraser Institute's Annual Survey of Mining Companies

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**Yes, my opinion counts! Please include me in next year's survey.**

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