# Fostering Foreign Investment in Mineral Exploration and Development in Russia

Analysis and recommendations prepared for the Russian Government in connection with the activities of the Foreign Investment Advisory Council of Russia (FIAC)

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# INTRODUCTION

The Russian Federation has one the richest mineral endowments of any nation. While already a major producer of mineral commodities, Russia has the opportunity to increase domestic mining development significantly – and the rewards that go with it — by taking the right steps to encourage greater investment in mineral exploration, the necessary starting-point for all mining activity. This paper explores this opportunity, and the related opportunity for developing a Moscow-based mining capital market.

Mineral exploration is by definition a high-risk, capital intensive activity in which only one in several hundred targets meet the technical and economic criteria for development. In return for assuming this risk, investors require a degree of certainty on their right to develop any discovery that may result from exploration, and to earn a return on their investment.

At present, the vast land area of Russia is considerably under-explored. On the basis of exploration expenditure per unit of land area, Russia is the lowest of the major exploration target destinations. By increasing its exploration density to the average of the world's top 10 mining countries, Russia would generate exploration investment of $1.6 billion per year, rivalling Canada, the global exploration leader.

Canada provides an instructive example for mining capital market development, an area of significant opportunity for Russia. Between 2005 and 2009, 82% of all mining equity deals were completed on Canadian stock exchanges. This is due in large part to the investor confidence provided by Canada's rigorous securities regulatory framework, including National Instrument 43-101, which provides specific rules and guidelines for the disclosure of mineral reserves and resource information.

Speaking at a joint address to the Sudbury Chamber of Commerce, the head of the Mining Association of Canada stated in August 2011 that Canada's mining industry will invest $130 billion over the next five years. Ontario Mining Association president Chris Hodgson said: "The next 20 years present a window of opportunity for a jurisdiction with the geology, environmental protections, strong safety record and government policies to build a deliberate and well-planned strategy for new mines."

"The existing 20-year window of opportunity can be spent on permitting and approvals, or it can be spent opening mines. Our environmental and safety record will not be placed in jeopardy by compressing development timelines. We will align interests to ensure the province, industry and community all benefit," Hodgson added.

Canada and other mining jurisdictions also provide useful examples of tax policies that encourage investment in domestic exploration, such as Canada's Flow-Through Share Policy, which transfers tax credits from junior explorers to individual investors, and has resulted in $5 billion in exploration investment over the past 15 years.

Russia has a significant opportunity to foster greater exploration investment through a combination of regulatory reform, capital market development and increased foreign investment. This can be done without a major overhaul of investment rules or a shift in philosophy regarding state ownership of mineral resources. The paper discusses a number of specific recommendations, including:

- encouraging foreign investment that benefits the state, and revisiting strategic sector laws which discourage foreign investment, such as the limit of less than 10% investment in mining companies without government approval;
- redefining strategic commodities as only those truly of strategic importance to the state;
- implementing changes to existing rules and introducing new measures to protect the property rights of companies that invest in exploration;
- implementing financial reforms, including revisiting current restrictions under the Subsoil Law, to encourage the development of mining capital markets;
- basing mineral taxation on profit vs. revenue;
- adopting internationally recognized mineral resource and reserve classification systems; and
- other specific detailed recommendations summarized on pages 10-11 of this paper.

Russia is already taking significant steps to improve the country's overall investment climate and to transform Moscow into an international financial centre. By introducing some relatively minor improvements to existing legislation, and providing greater protection and predictability for investors, Russia has an unparalleled opportunity to significantly increase domestic exploration and mining investment, as well as the potential to become a world centre for mining finance.

# FOREWORD

## BY TYE W. BURT, PRESIDENT AND CEO, KINROSS GOLD CORPORATION

This White Paper was initiated during the 2010 Plenary Session of the Foreign Investment Advisory Council (FIAC), in discussions with Prime Minister Vladimir Putin. It seeks to introduce a number of topics for debate and further discussion in Russia, with the hope that it can help to stimulate changes that will increase foreign and domestic investment in the exploration and mineral resource development sector.

As the largest Canadian investor in the Russian Federation, with a history of development of gold mining properties since 1995, Kinross Gold Corporation has demonstrated that the Russian economic, legislative and regulatory framework can allow successful foreign investment in the country's mineral resource sector.

However, when considering the mining industry as a whole, Kinross' record of sustained investment in Russia has proved to be the exception rather than the rule. In recent years, there has been a significant reduction in foreign investment in mineral exploration and development in the Russian Federation.

This stems in part from a perception among investors that Russia does not welcome foreign investment in its rich mineral endowment. This negative perception persists, despite significant efforts by the Russian government to introduce and implement reforms in recent years.

As a committed long-term investor in Russia and a member of FIAC, Kinross is keen to help Russia realize its potential as a global mineral powerhouse, attracting investment from abroad and eventually becoming a preferred source of risk capital for the mineral exploration and mining industry.

Our aim with this White Paper is to advance that process. We hope that it will help Russian policy-makers and regulators more fully understand the competitive dynamics of attracting foreign investment in exploration and mining, provide relevant lessons from countries whose regulatory frameworks encourage exploration and mining investment, and provide practical recommendations on changes to the Russian regulatory framework to create a more attractive climate for investors.

The paper describes the global nature of the mineral exploration investment environment, including the dynamics of supply and demand, the risks and

costs of exploration, and the importance of properly incentivizing exploration activity. It also describes regulations and measures introduced in countries such as Canada and Australia designed explicitly to attract international companies to explore and develop their mineral resources. Notably, these include internationally accepted codes and procedures which assure investors of the reliability of the declaration and registration of mineral reserves and resources. Increasingly, the transparency and predictability that define these jurisdictions are attracting mining activity and capital.

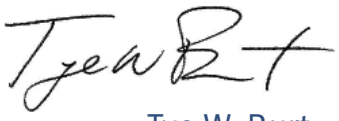
Our intention is not to present the Canadian mining investment model as the sole example for Russia to follow. However, we believe Canada provides an instructive example of how countries can protect and safeguard their national mineral wealth while at the same time ensuring robust capital formation and investment. Canada's relatively straightforward rules and regulations have helped to make Toronto the premier global centre for raising capital for mineral exploration and mining. In particular, they have helped to foster the growth of "junior" exploration companies that raise capital in Canada for exploration and mining development projects around the world.

With its vast mineral wealth, technical skills and improving investment climate, Russia has a bright future as a destination for foreign investment in exploration and mining development. Moreover, Russia's expected accession to the WTO later in 2011 or early 2012 will significantly improve the investment attractiveness of Russia, in all sectors of the economy. With some relatively minor improvements to subsoil and strategic industries legislation, an emphasis on greater transparency and predictability for prospective investors, and a concerted effort to improve capital market regulation, Moscow has a realistic chance of developing into a vibrant centre for international mining finance.

Since we initially released this paper for review by Russian government officials, mining and exploration companies, mining service providers and investment banks, we have received a large number of comments and suggestions for additional review and study. We are grateful to those who took the time to respond and for the high quality and substantive nature of the suggestions we have received.

In the Appendix, we have included recommendations and suggestions (many in edited and abridged form) which in our view enhance the scope and importance of this White Paper. The degree of interest in our initiative confirms that the industry is keen to work with the Russian government to define more specifically the changes to existing regulations and new initiatives needed to stimulate additional foreign and domestic investment in mineral exploration and development. It is our hope that this paper has provided a useful starting point for discussions about the way forward. On behalf of Kinross Gold Corporation and FIAC, I encourage further constructive criticism and additional suggestions for the continued improvement of the investment climate in Russian mining.

Yours sincerely,



Tye W. Burt

President and CEO
Kinross Gold Corporation

Toronto, 16 September 2011

## OBJECTIVES OF THE WHITE PAPER

The objectives of the White Paper are threefold:

- To provide an overview of the global mineral exploration business and examples of policies and regulations in successful mining jurisdictions;
- To examine exploration and mine development from the perspective of capital markets and to provide insight into how Russia could expand its expertise in this area; and
- To consider ways that Russia could encourage increased levels of FDI in mineral exploration and development through changes to current laws and regulations.

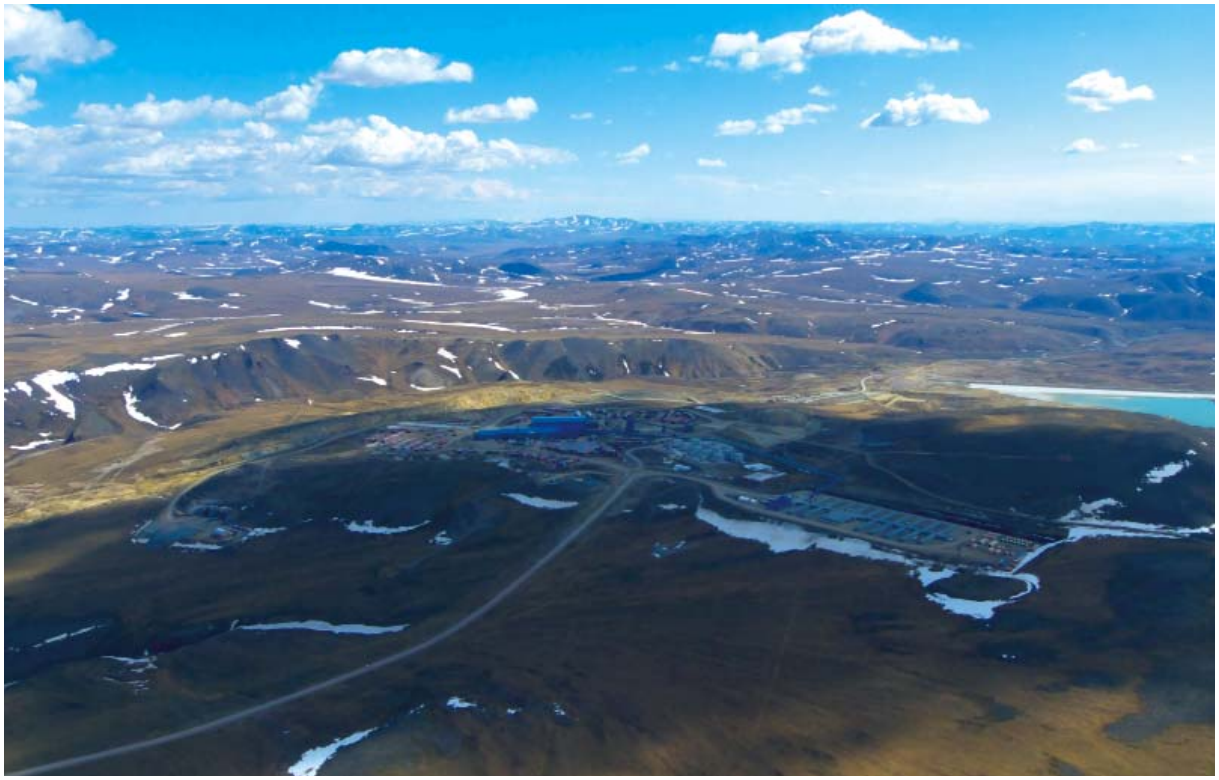
## METHODOLOGY AND SCOPE

Research for this paper was carried out in a collaborative manner drawing on experts in Canada and Russia with specific professional experience in:

- The mineral exploration business;
- Mining capital markets;
- Government relations;
- Mineral policy; and
- Foreign direct investment.

Empirical analysis was carried out using public data and mineral industry databases available for a charge. Canadian policy and government relations examples draw heavily on the experience of a former senior government official at Natural Resources Canada. Capital market assessments are based on the experience of senior researchers at HanOcci Mining Advisors Inc. Discussion of Russian mineral policy and legislation is based on work by the law firm MacLeod Dixon augmented by the experience of Kinross Gold Corporation.

Following an Executive Summary, the study begins with a broad overview of the exploration industry and capital markets, and then gradually narrows the focus on specific issues to improve Russia's competitive position in attracting exploration investment.



## THE WHITE PAPER IN BRIEF

Russia is a country with substantial mineral endowments and is a significant global producer of a wide range of mineral commodities. Nevertheless, the vast land area of Russia is considerably under-explored. Russia has the opportunity to foster greater exploration investment in its mineral industry through a combination of regulatory reform, capital markets development and increased foreign investment. This would result in substantial economic benefits to the country. Russia would rival global leader Canada and generate exploration investment of approximately $1.6 billion per year, if it increased its exploration density simply to the average of the top 10 mining countries globally.

### 1. The Risk Profile for Exploration Investment is Unique

Mineral exploration is by definition a high-risk business requiring access to large tracts of land and time to carry out the sequential investigative process to move from mineralized targets to economic mines. Typically only one in a few hundred targets that are examined will meet the technical and financial requirements to justify development. As a result, the average cost of discovery can be many tens of millions of dollars. For example, the average cost of making an economic gold discovery was about $70 million during the 1992-2008 period. The average cost for copper deposits over this timeframe was more than $100 million. In addition, the average time to make a discovery is typically more than 10 years.

To accept this risk, companies and their stakeholders need to be reasonably confident of receiving a risk-adjusted return on investment. This, in turn, requires a degree of certainty regarding the right to develop discoveries, recoup their investment and generate a profit.

The underlying geological variability of mineral deposits gives rise to a wide range of possible returns on investment with a few exceptional deposits earning a large portion of overall returns. The small chance of finding one of these world-class mines is a prime motivator in driving high-risk mineral exploration investment.

### 2. Exploration is a Competitive Global Business

Over the past 15 years, exploration and mining companies have invested approximately $84 billion in the search for new economic hard-rock mineral deposits. Nearly half of this money has been spent by junior exploration companies, which have little or no cash flow and depend on capital markets for financing.

The destination of exploration expenditure is largely a function of the perceived geological potential for making new discoveries offset by country risk issues. For the most part, however, a strong correlation exists between land area and level of exploration activity. In terms of absolute total exploration expenditures over the past five years, Russia ranks 6th among all nations, although expenditures are only one quarter of Canada's, the leading country for exploration. On the basis of exploration density ($/km$^2$) – defined as exploration expenditure per unit of land area — Russia is the lowest of the major target destinations. The average exploration density among the top 10 countries over the past 5 years is nearly $100/km$^2$, while expenditure in Russia accounts for only $28/km$^2$. By comparison, exploration density in Canada averaged $178/km$^2$. If Russia could increase its exploration density to the average of the top 10 countries, it would rival Canada in terms of dollar amount of exploration investment at about $1.6 billion per year.

### 3. A Balanced Approach to Sharing Mining Wealth is Required

There is no evidence that countries are better off leaving their natural resources in the ground for future generations on the expectation of higher resource prices. In fact, there is a large opportunity cost incurred by society when less than efficient use is made of the capital of its natural resources. It is possible to reap the rewards of resource development and share this wealth among all stakeholders – mine finders, mine builders and the state.

The long lead-times and high costs associated with overcoming exploration risk to find new economic deposits require some certainty and expectation of securing downstream economic returns. If exploration activity does not take place, most potentially economic deposits will not be discovered and developed and the potential revenues to the state and society will be delayed or lost. Ultimately, the critical question is whether 100% ownership of undeveloped and undiscovered mineral resources is more valuable to the state at sometime in the future than having a smaller ownership in operating mines that generate tax revenues and employment in the present. Countries also benefit directly from exploration activities in the form of lease acquisition and renewals and through employment and expenditures in more remote areas of the country.

In nearly all countries, mineral resource ownership resides with the state. Tax and royalty structures vary widely, however. The effective rates of profit and production taxes and royalties suggest that 20% to 60% of the value of mining operations is shifted from the corporation to the state. While companies generally prefer to pay tax on the basis of profits rather than sales revenue or production output, many mining tax jurisdictions apply a combination of profit taxes and revenue-based royalties. The state receives its fair share of the benefits from leasing its mining resources and employing a balanced mining tax regime that is also flexible enough to encourage investment.

## 4. Successful Mining Capital Markets Depend on the Integration of Technical, Financial and Regulatory Skill Sets and Systems

The primary role of the capital markets is to raise long-term funds for corporations, governments, and institutions, while providing a platform for the trading of securities. The mineral exploration and mining capital markets is a subsector of the broader capital market focused on raising capital for mineral exploration programs and mining projects, and the subsequent trading of mining shares on the secondary market.

In the global mining capital markets, Canada is a leader on most fronts but is being challenged by emerging competitors in various parts of the world. Between 2005 and 2009, 82% of all mining equity deals were completed on Canadian stock exchanges (TMX Group Inc.). Most of these deals related directly to the raising of capital for mineral exploration both domestically and internationally. In Canada, early-stage high-risk exploration funding is typically raised by junior mining exploration companies listed on the TSX Venture Exchange (TSXV). Later-stage development and production-stage mining companies are usually listed on the more senior TSX Exchange (TSX) and are primarily concerned with raising capital for the development of new mining projects or existing operations.

At the end of 2010, there were 1,538 public mining companies listed on the TMX Group Inc., including 358 mining companies on the TSX and 1,180 companies on the smaller TSXV. The average market capitalization of a mining company on the TSX is $1.6 billion, versus an average market value of $35.6 million on the TSXV. There is a skewed distribution of value among mining companies, reflecting the inherent variability of returns found among economic mineral deposits. The top 10% of mining companies control 90% of the market value.

In practical terms, while many junior mineral exploration companies are prepared to face the large discovery risks associated with finding an economic deposit, only a few will be successful in making a large multi-billion dollar discovery. Exploration success therefore needs to be rewarded.

Australia, Hong Kong, Johannesburg, New York, and London (and its smaller cap offshoot AIM) compete aggressively for mine financings and mine company listings. The value of equity financings on the London Stock Exchange (LSE) tends to rival that of the TMX on the basis of many fewer but typically larger financings. For example, in 2009 the TMX carried out nearly 2,000 financings worth slightly more than $22 billion. By contrast, the LSE and AIM collectively carried out 162 financings to raise a similar amount of funds.

With respect to the mining investor, specific securities legislation in Canada in the form of National Instrument 43-101 provides rules and guidelines for disclosing geotechnical information. This is particularly relevant in the reporting of resources and reserves for mineral properties and represents a substantial difference from the Russian classification system for resources and reserves, which is based largely on technical resident economic criteria.

With its vast mineral deposits and a leading role in global production, Russia is well positioned to develop capital markets for domestic mining to compete with Canada and

other international financial centres. The first step towards achieving this goal could be addressing more general legislative and judicial issues. Encouraging foreign capital markets and companies to invest in exploration in Russia will expose Russians to the investment culture and allow them to emulate and adapt in the gradual creation of a domestic capital market for mining.

## 5. Positive Examples from the Canadian Experience

In addition to being the largest destination for exploration expenditures and the dominant centre for mining equity deals, Canada plays a key role in exploration worldwide. Canadian companies annually account for between 30% and 45% of total global exploration activity. Canadian federal and provincial governments actively encourage investment in the mineral sector from both foreign and domestic sources. With respect to FDI, foreign companies have invested between $50 billion and $70 billion annually into the Canadian mining industry during the past five years. This amount rivals the international investment by Canadian companies.

With respect to domestic investment, the Canadian government uses tax policy to encourage investment in exploration. The most successful policy in this regard is the Flow-Through Share Policy, which transfers tax credits from junior explorers directly to the individual investors in the company. This policy has resulted in approximately $5 billion invested over the past 15 years. The Canadian government has also moved from revenue-based to profit-based taxation of mining income and introduced other measures to become internationally competitive in terms of effective rates of taxation on mining projects. This is in contrast to Russia where taxation is largely focused on royalties applied to revenues, resulting in higher effective rates of taxation.

## 6. Regulatory Reform in Russia Would Spur Increased Exploration and Development Investment

Mining companies and investors choose the destination for their investment dollars based on many factors, including the laws and regulations of the host country. In this regard, Russia competes with Canada, the United States, Australia, South Africa, China and many other countries for global mining investment resource allocations.

There are a number of measures that the Russian government can undertake to encourage greater investment in its vast known and unknown mineral deposits. The government is already actively pursuing some of these initiatives, while others are being followed up on at a slower pace and work has not begun on others. In the table overleaf, we have identified a number of areas that we believe should be the primary focus of Russia's regulatory reform efforts.

## GENERAL ECONOMIC POLICY / FOREIGN INVESTMENT POLICY

**1. Encourage Foreign Investment that Benefits the State.** The current Strategic Sector Laws could not be conceived as encouraging foreign investment. For example, the limit of less than 10% investment in or control of mining companies without requiring government approval seems too low. Additionally, the streamlining of the process for considering applications for foreign investment in strategic industries could be advisable.

**2. Property Rights Protection to Encourage Exploration Investment.** Russia would be able to attract more investment in exploration if companies investing in high-risk exploration activity could count on capturing equity-type returns from mine development and production, particularly given the fact that the chances of discovering an economically viable mine are small. We have identified the following specific steps for the protection of property rights:

- It would be logical for exploration companies to have the right to convert, without hurdles, exploration licenses into production licenses once a discovery is made;
- It would be rational if the state were to surrender its rights to terminate an exploration license as a result of a discovery without other justifiable reasons, or to grant rights to more than one user for the same field; and
- In cases where control by a foreign party is deemed a threat to state security, the investor could be given one year to decrease its interest below the relevant ownership threshold. The question of whether the state should also be obligated to buy out such interest at market value if the requisite third-party sale could not be completed within one year is also worth considering.

**3. Tax Policy to Encourage Exploration and Development.** Russia's mineral extraction tax is generally calculated on an ad valorem basis. A tax on profit, rather than revenues (or sales), would serve to encourage more exploration and development investment in Russia. Taxes on profits are more reflective of the cyclical nature of commodities pricing and would not discourage development and investment at a time of low prices.

**4. Greater Emphasis on Established Civil Laws.** The establishment and application of rules by regulatory agencies is having the effect of further departure from the limited but important civil protections contained in Russia's Subsoil Law. Both subsoil users and the state would benefit from an increased emphasis on civil law oriented legislation, rather than primarily administrative regulation.

## MINERAL RESOURCES AND EXPLORATION

**1. Further Definition of Strategically-Important Mineral Deposits.** We believe it would make sense to revisit the definition of strategic commodities and apply it only to those deemed truly strategic by the state. Additionally, we believe it would be positive if the size limits imposed were to be revised. We believe it would be rational to increase these limits to a level that reflects true strategic importance while still encouraging exploration investment.

**2. Encourage Expansion of Mining Development.** Russia could also allow companies with mining development licenses to mine other minerals found in the licensed area or in land adjacent to the licensed area (and not mentioned in the license) by simply amending their license. These practices are not allowed under current law and lead to inefficiencies in the mining process.

**3. Definition of Investment Operatorship Agreements in Russian Law.** The "operatorship" concept, which is common in international law, is not in Russian law. The introduction of relevant changes would make the rights of operators more flexible based on Russian civil legislation.

**4. Internationally-Recognized Mineral Resource and Reserve Classification System.** Russia is currently aligning its Mineral Resource and Reserve Classification System with the internationally-recognized Committee for Mineral Reserves International Reporting Standards (CRIRSCO), which establishes minimum standards for international reporting requirements. Russia might consider adopting a classification system more in line with Australia's or Canada's, which are considered more rigorous mineral disclosure policies than CRIRSCO standards.

**5. Clarification on Project Infrastructure Turnover and Transfer.** Russian law does not, in our view, sufficiently regulate how project infrastructure is transferred or dispersed when the owner of a license loses its right to use the subsoil. This leads to potential conflicts between the former subsoil user, who holds the title to all project infrastructure, and the new subsoil user, who has the right to use the subsoil.

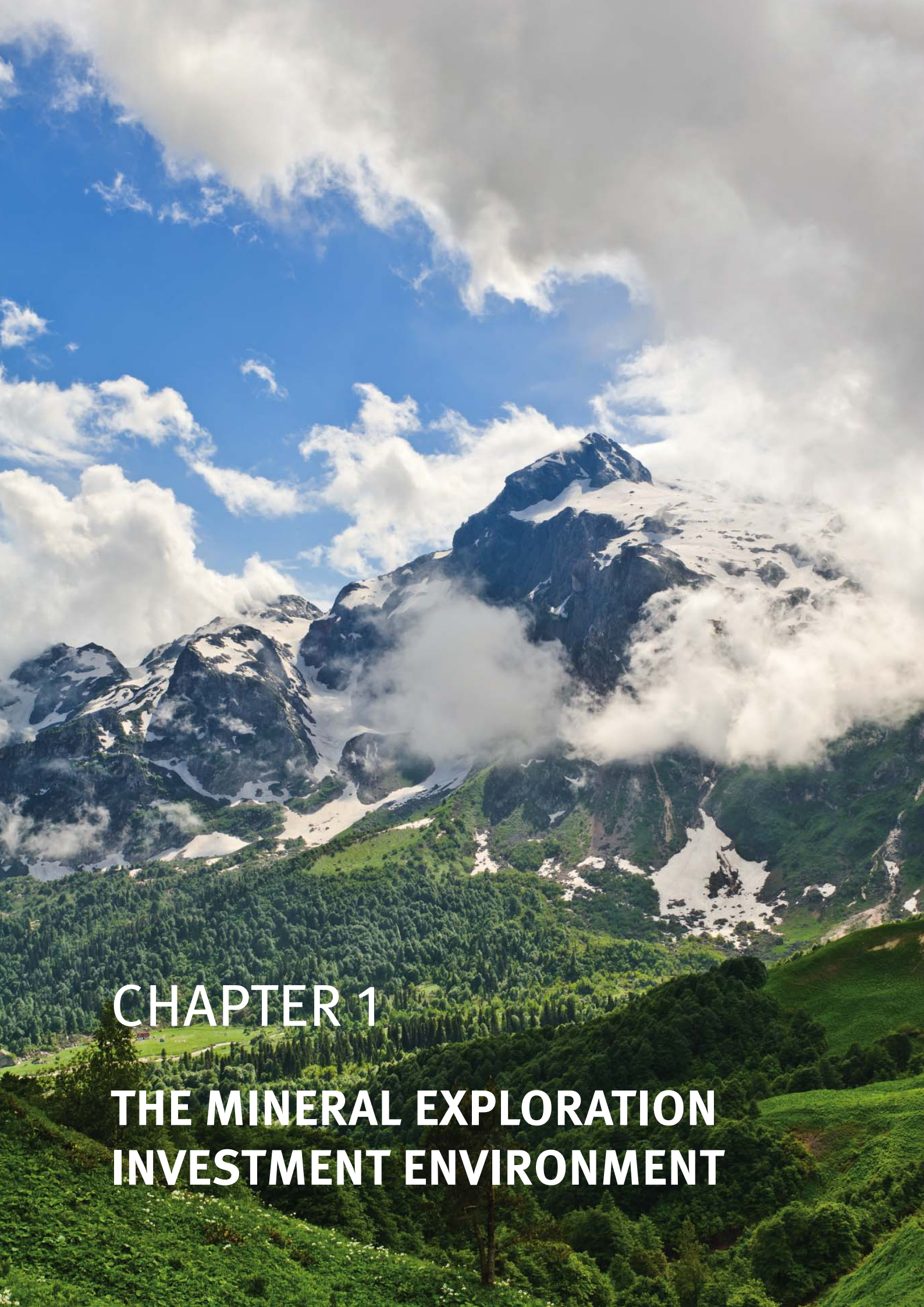
| LICENSING AND LAND USE | CAPITAL MARKETS |
|---|---|
| **1. More Open and Transparent Tender Process.** If Russia considers it expedient to continue to award production licenses based on auctions or tenders rather than on a first-come, first-obtained basis, it would be desirable to make these tender processes more open and transparent. | **Development of Russia's Mining Capital Markets.** Russia is currently undertaking an aggressive agenda to improve the country's investment climate and transform Moscow into an international financial centre. Beyond its broader financial markets reform efforts, Russia can implement a number of financial reforms to encourage development of mining capital markets. For example, subsoil plots deemed to be strategic properties solely on the basis of their commodities significantly hamper the ability to attract third-party financing, especially equity financing, or to transfer the license to its existing or new subsidiary. |
| **2. Narrowing of License Revocation Provisions.** Currently, the Russian government can revoke exploration and production licenses, even in cases when they were issued without any violations, for a wide range of reasons. However, the conditions for termination are rather broad, and in some cases they can also be used in the administration of arbitrary decisions. Narrower and better-defined license revocation provisions would provide greater assurances and safeguards to investors. | |
| **3. Clarification of Land Use Issues.** It would be expedient to clarify laws and regulations granting license holders access to land within their license area. Currently, there is no legal act that provides for any consistent procedure for guaranteeing a subsoil user access to relevant land. | |
| **4. More Open and Transparent Access to Geologic Information.** Making information more accessible and available can benefit both exploration companies and the state. In practice, geological information is still made available only to participants in auctions or tenders. Additionally, this information cannot be exported without an export license. Finally, some geologic information is still classified as a state secret. | |
| **5. Clarifying Gaps and Overlaps in Russian Laws Regulating Subsoil Investments.** Currently, there are some overlaps and gaps in Russian law governing subsoil investment and activities. Merging the two subsoil laws into one would streamline procedures and overcome confusions. | |

# CONCLUSION

The Russian Federation is among a host of countries that have been working to introduce modifications to their regulatory and financial markets to attract foreign investment. Mining is a sector that currently exhibits strong demand and price characteristics. Its forecasted strong growth over the coming decades carries a high opportunity cost for any country, including Russia, that does not establish an investment climate that balances financial regulatory reform and the state's other responsibilities of resource protection and revenue generation.

Mineral exploration and mine development companies are prepared to invest in many jurisdictions with less than ideal investment climates if the perceived geologic potential is high and the right to mineral tenure is guaranteed. The Russian Federation has a real opportunity to join other large countries in attracting sufficient exploration funding on a per $km^2$ basis to enhance the development of its mineral resource base. This will not require a complete overhaul of investment rules or a major shift in philosophy or ideology regarding state ownership of mineral resources. The right to develop deposits that are discovered through the exploration activities of foreign or domestic companies and the right to maintain a reasonable share of even the largest and best discoveries would significantly increase the levels of investment in exploration activity in Russia. The resultant discoveries from this activity would ultimately be an economic benefit to the state and people of the Russian Federation. Furthermore, this investment and interaction with foreign exploration entities and associated capital markets would be the first steps towards building a domestic market that could raise funds and establish companies to compete for new discoveries and development.

Once considered an obsolete industry, the mineral sector has been transformed by incorporating new technologies and adopting stronger environmental and social standards. Mining has emerged as the engine of growth for many economies and the springboard for reform of financial regulation and foreign investment. This is an opportunity waiting to be embraced and fully realized by the Russian Federation.



# CHAPTER 1

# THE MINERAL EXPLORATION INVESTMENT ENVIRONMENT

# 1.1 | THE MINERAL SUPPLY PROCESS

The role of the mineral sector in the economy is to find and develop economic mineral deposits, then mine, process and market products from these deposits and ultimately reclaim the environment disturbed in the mining process. The basic stimuli for this four-stage mineral supply process result from the physical occurrence of mineral deposits in nature and the demand for mineral commodities in the market place. The result is wealth creation for the countries and societies in which the mineral resources occur and the companies which undertake the risks and financing of the various stages of the process.

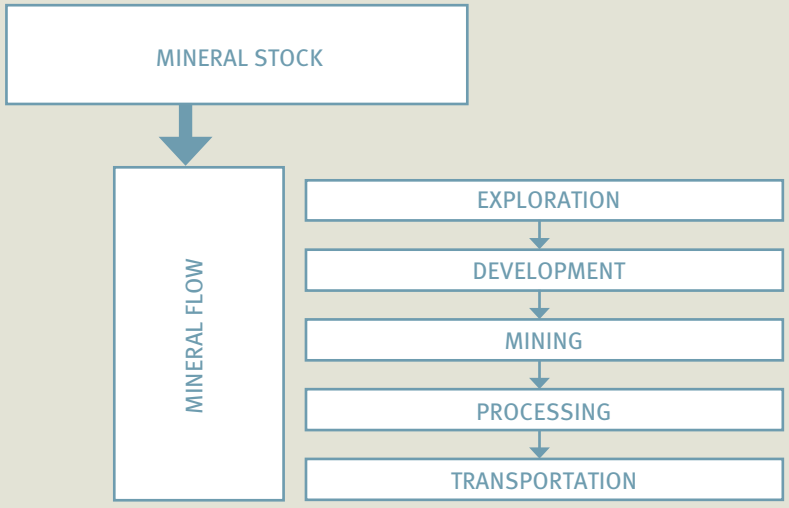
The economic overlay for resource assessment concerns the process by which minerals are converted from initially unknown geological resources into marketable products. A geologic stock of resources in the form of mineral deposits flows through a series of mining sector activities to supply the end mineral market (Figure 1-1). The economic consequences of mineral conversion reflect the underlying costs and risk and return characteristics of mineral exploration, mine development, mining, mineral processing, and transportation.

## UNIQUE FEATURES OF MINERAL SUPPLY

Unique features of mineral supply are inevitably traced back to a single distinctive influence: the geological environment and its four factors. Mineral deposits are:

1. Initially unknown;
2. Fixed in size;
3. Variable in quality; and
4. Fixed in location.

**Figure 1-1. Resource Assessment in the Context of a Supply Process**




Source: HanOcci Mining Advisors Inc.

Mineral exploration is the most strategic upfront and integral component of the mining industry. From a long-term perspective, the process of mineral supply starts with the search for mineral deposits, where there is typically a long period of investment and a high risk of total loss through failure to make an economic mineral discovery. A significant implication of the high-risk nature of exploration is that there is a strong random element associated with exploration success.

Mineral deposits, once discovered, are fixed in size, and therefore are subject to exhaustion during the course of production. The fixed dimensions of mineral deposits impose technical and economic constraints on production capacity rates. For every tonne of ore mined, there is one less tonne for future consumption. Therefore, on-going exploration is required to maintain existing production levels. The exhaustible nature of mineral deposits raises issues of resource scarcity, limits to growth, and the role of mining in economic development.

Not only are mineral deposits geologically fixed in size, they also vary in quality. There is no such thing as a typical mineral deposit. The variability of quality within individual mineral deposits gives rise to planning opportunities in terms of cut-off grade and sequence of mining decisions. The variable nature of mineral resources among deposits also has a critical influence on a wide spectrum of broader mineral policy issues, for example, economic rent and mining taxation policy.

Lastly, mineral deposits are fixed in location and cannot be moved to convenient market locations. Development, mining, and possibly some degree of mineral processing, must occur where deposits are located. This creates transportation, power, water and social infrastructure requirements, which, in remote locations, can be a major component of capital and operating costs. More generally, the fact that mineral deposits are fixed in location means there is a distinction between resource-rich regions and countries and those that are heavy consumers of minerals. This geological feature explains why mineral commodities are such a prominent feature of domestic and international trade, and the source of various global socio-political issues.

## 1.2 | THE ROLE OF MINERAL EXPLORATION

The ultimate purpose of investment in mineral exploration is the discovery and delineation of economically viable mineral deposits. For exploration to be justifiable, the expected value of that investment in economic terms needs to be positive, and the real rate of return on the investment must be greater than the cost of capital.

Exploration cannot be justified as an end in itself. It needs to take into account all finding, development and production costs as well as returns. Exploration represents a strategic up-front investment, which needs to provide a sufficient downstream economic return for a given level of risk.

At the beginning of the search process, all finding, development, and production activities represent controllable choices. This is the only time a mining company or organization is not committed to particular programs, projects or mines. Thus, there is the widest possible scope for focusing exploration to encourage success through selection of commodities, deposit types, geologic environments and geopolitical jurisdictions. Government policy aimed at growing the domestic mineral industry can also have a significant impact by encouraging the requisite investment in the upfront exploration phase of mineral supply.

Exploration is not simply a linear process of spending money to find new reserves. Instead, exploration is a sequential information-gathering and decision-making process of choosing whether to advance or discontinue projects on the basis of money spent and information acquired. A typical mineral exploration program will see successful projects move from reconnaissance to early-stage exploration and then through several phases of drilling and finally economic assessment involving scoping and feasibility. As a result of the risks inherent in this process, most exploration expenditures are associated with failure. Only a small number of projects will ever move past the exploration phase into mine development and production.

# 1.3 | COST-RISK-REWARD BALANCE

## 1.3.1 EXPLORATION COSTS

According to the Metals Economics Group (MEG), the industry has collectively spent approximately $84 billion in the search for and delineation of new mineral deposits between 1996 and 2010 (Figure 1-2). Expenditures ranged from a low of $1.9 billion in 2002 to a high of $13.2 billion in 2008. Approximately 40% of the total was related to gold exploration, while the remainder was spread across a wide range of nonferrous metal targets. More than 40% of the total expenditure was recorded by junior exploration companies. The level of expenditures in the past five years is significantly higher than historical investment, reflecting the increased value and anticipated rising demand for mineral commodities.

## 1.3.2 | EXPLORATION EXPENDITURE LOCATION

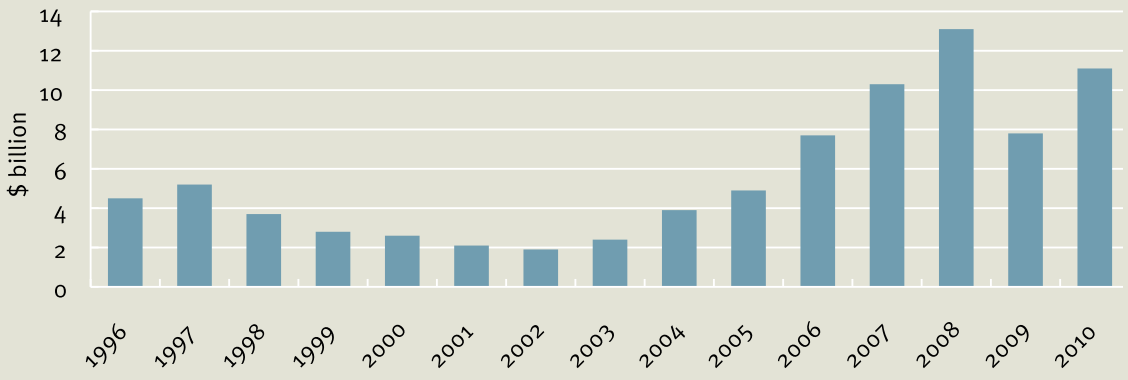
The location of exploration expenditures is determined by the perceived geological potential on the upside and geopolitical risk on the downside. With a few notable exceptions, expenditure levels tend to reflect country size, with geographically large jurisdictions attracting proportionately more exploration. For example, from 2006-2010, the top six countries of the world by land area accounted for 47% of global exploration expenditures. The top 10 destination countries collectively accounted for two-thirds of exploration expenditures during this time. Furthermore, the top two destinations (Canada and Australia) accounted for 30% of all expenditures.

By exploration density, which is the exploration expenditure per km² of land area, Russia, China and Brazil are the lowest of the top 10 destination countries for exploration (Table 1-1). Russia ranks at the bottom with an average 5-year density measure of $29/km². The average exploration density measure for the top 10 countries is $96/km². If Russia were able to increase exploration density to the average value of the top 10 destinations, it would rival Canada as the top destination for global exploration expenditures in absolute dollar terms with more than $1.6 billion.

## 1.3.3 | DISCOVERY COSTS

Successful exploration requires a significant investment of both time and money, as proven by recent empirical studies for gold and copper. According to one study of gold discovery costs during the period 1992-2008,

**Figure 1-2. Global Exploration Expenditure 1996 - 2010**




Source: Metals Economics Group

## Table 1-1. Exploration Spending by Destination

| Country | Exploration Expenditures 2006 — 2010 | | | Land Area ($km^2$) | Exploration Density ($/$km^2$) |
|---|---|---|---|---|---|
| | Total ($M) | % of Global Total | 5-Year Average ($M) | | |
| Canada | 8,892 | 18.0% | 1,778 | 10.0 | 178 |
| Australia | 5,836 | 12.0% | 1,167 | 7.7 | 152 |
| United States | 3,522 | 7.0% | 704 | 9.6 | 73 |
| Mexico | 2,851 | 6.0% | 570 | 2.0 | 291 |
| Peru | 2,537 | 5.0% | 507 | 1.3 | 390 |
| Russia | 2,353 | 5.0% | 471 | 17.0 | 28 |
| Chile | 1,989 | 4.0% | 398 | 0.8 | 526 |
| Brazil | 1,573 | 3.0% | 315 | 8.5 | 37 |
| China | 1,570 | 3.0% | 314 | 9.6 | 33 |
| South Africa | 1,393 | 3.0% | 279 | 1.2 | 228 |

Source: Metals Economics Group

$46 billion in global gold exploration expenditures yielded 678 gold discoveries for an average cost per discovery of $68 million.[1] This cost does not include any consideration of the time associated with discovery or the additional time to move from discovery to development and production. Another study showed similar results for the discovery costs for copper deposits.[2] Average exploration cost associated with the 100 new copper mines that came into production between 1989 and 2008 was $117 million. When adjusted to account for time from discovery to production, these costs increased to $221 million per deposit.

## 1.3.4 | RISKS

Risks are hurdles that need to be overcome to move from investment in exploration to returns from exploration. There are four risk categories that are particularly relevant to the exploration process.

### MARKET RISK

In the mining industry, mineral market risk refers to short-term fluctuations and longer-term trends in the prices of commodities.

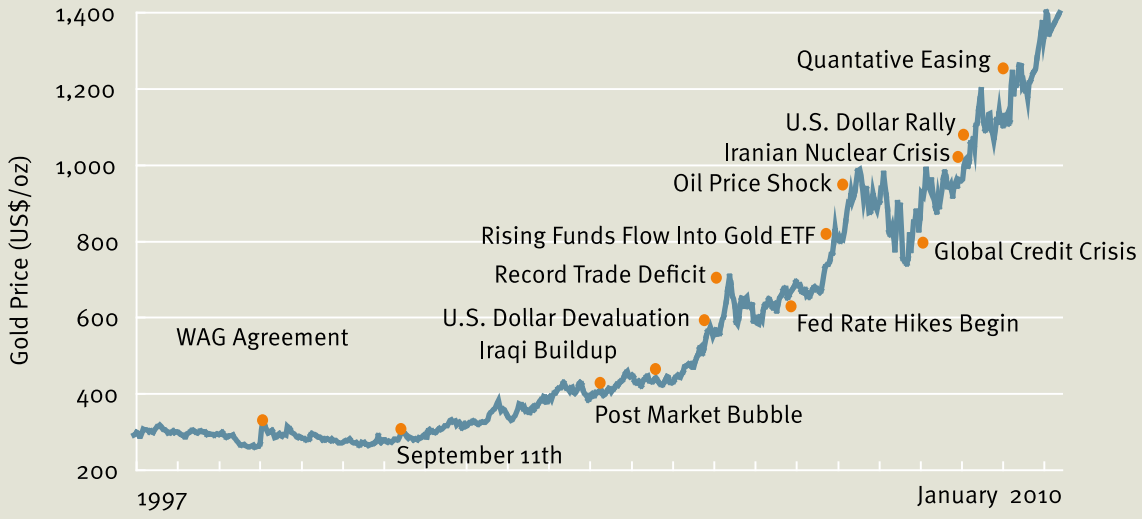
The price of gold has been rising for the more than 10 years (Figure 1-3). Many factors impact the price of gold ranging from the fundamentals of physical supply and demand, to more intangible aspects including global geopolitical developments, macroeconomic issues and the dynamics of central bank policy, currency markets, and gold investment demand. The current bullish outlook for gold primarily reflects rising investment demand in the wake of geopolitical volatility, the global credit crisis and the subsequent volatility in capital markets, and currency values. Loose monetary policy and the debasement of fiat money supply are also causing increased investment demand for gold. An equally important consequence of these macro-economic developments is the impact on the relative value of currencies and exchange rates.

### EXCHANGE RATE RISK

Exchange rate risk, which is the change in the relative value of currencies, can have a substantial impact on the competitive position of mining projects and countries. Generally, the price of a commodity is inversely correlated to the U.S. dollar (Figure 1-4). A weak U.S. dollar implies that the costs denominated in currencies outside of the United States that are not fixed to the U.S. dollar exchange rate will increase, all other factors being equal. This is partially offset by a rise in commodity prices denominated in local currency terms. The interplay between changing domestic costs offset by changing commodity prices in local currency terms as a consequence of exchange rate movements ultimately determines the economics of mining projects and the competitive position of countries.

[1] McKeith et al, (2010).
[2] Doggett and Leveille (2010).

**Figure 1-3: Gold Price Trend; 1997 to Jan 2011**




HanOcci Advisors Inc., World Gold Council

## DISCOVERY RISK

Discovery risk considers the probability of making an economic mineral discovery and the timelines associated with this process. Exploration can be thought of as a pipeline where many early stage targets are screened to reveal the few deposits with economic potential. These deposits are further screened to find the select few that can cover the costs of development and provide a competitive return on investment. The process of moving from early-stage target to economic mine varies on the basis of commodity, deposit type, infrastructure, and level of exploration maturity. On average, a few hundred targets will have to be examined to reveal one that could yield an economic mine. This statistical reality means that companies require access to large areas of prospective land and many targets in order to overcome the high discovery risk. Overcoming discovery risk also requires considerable amounts of both money and time.

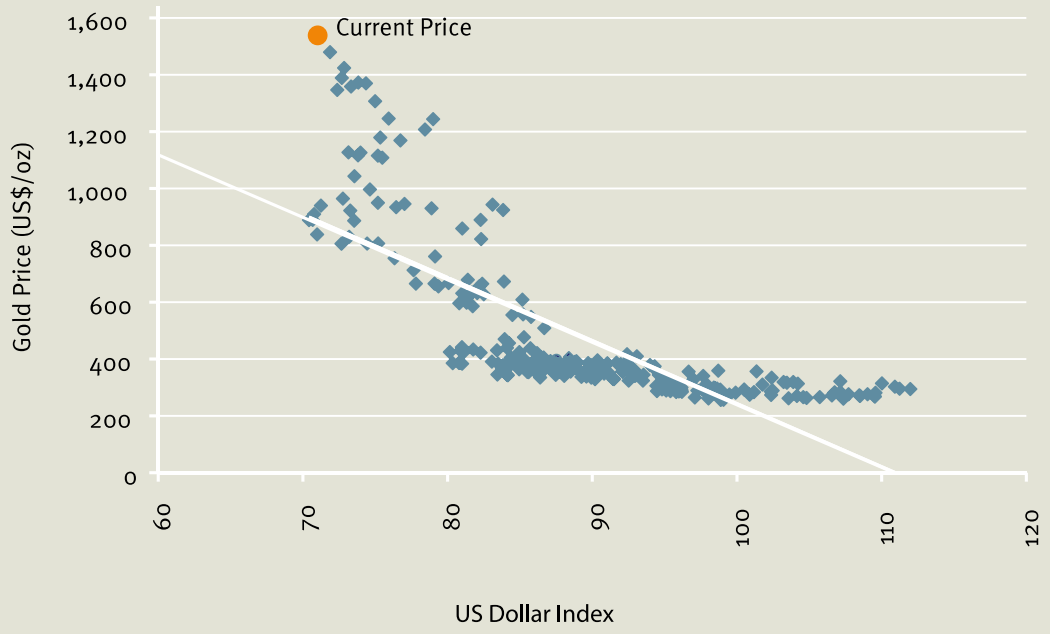
## GEOLOGICAL RISK

Geological risk is the variability in deposit size and quality in any given geographic or geologic setting. Most mineral deposits are small; the few exceptionally large deposits account for a large share of returns from mining. For example, a study completed by Natural Resources Canada shows that 30 of the largest deposits accounted for more than half of the gross metal value of the 900 metal deposits discovered in Canada from 1946 to 1982. Thus, there is a high concentration of value in relatively few giant ore deposits.

This is further illustrated by examining the distribution of gold deposit size measured in terms of proven and probable gold reserves (Moz) (Figures 1-5 and 1-6). A few very large deposits are complemented by a large number of smaller deposits. Almost three quarters (73%) of gold deposits have reserves of four million ounces or less. The top 10% of gold deposits hosts more than 50% of total cumulative gold reserves (687.5 mm oz).

The practical implication of this from exploration planning and government policy perspectives is that, while companies hope to find the few giant deposits, the statistical reality is that most discoveries will be relatively small. As a result, the discovery risk increases significantly when companies set minimum size targets that eliminate most of the overall distribution. From an industry perspective, the chance (however small) of finding one of the exceptional deposits is a key motivator behind investment in exploration. Most investors in the exploration process are prepared to accept the inherent

**Figure 1-4. Trade Weighted Dollar Index Vs Gold Price (US$/oz) (Monthly 1990 to Present)**



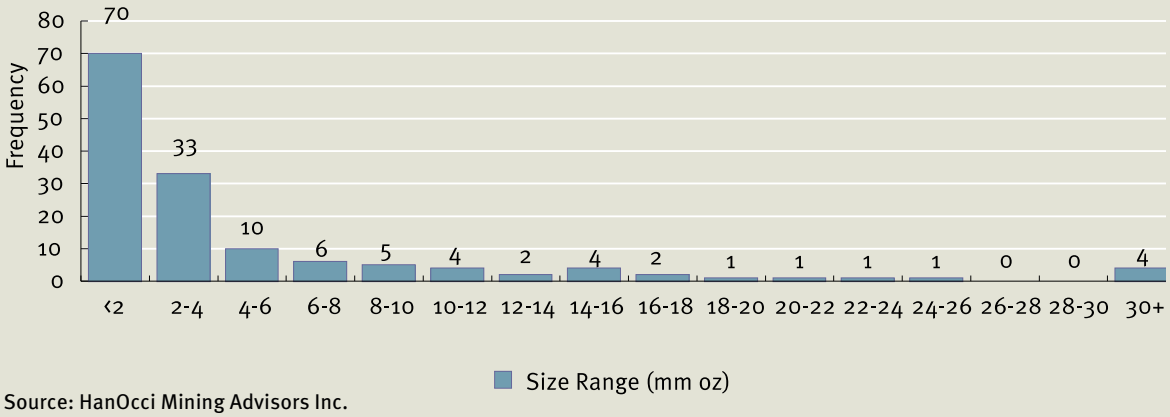

Source: Bloomberg; US Federal Reserve Statistics; HanOcci Mining Advisors Inc.

risks because of the opportunity to occasionally make an exceptional return. This tends to drive the level of investment beyond the point of marginal cost and marginal benefit equivalency. If the few exceptional finds are not available to exploration investors, much of the incentive to incur the high levels of risk disappears.

## POLITICAL RISK

Political risk is the geopolitical aspects of exploration including mineral tenure, right to withdraw profits, and safety issues, among others. Exploration companies are, by definition, somewhat risk tolerant. However, accepting additional country-specific risk usually requires

**Figure 1-5. Distribution of Gold Deposit by Size (mm oz) (Total of 144 Gold Mines)**



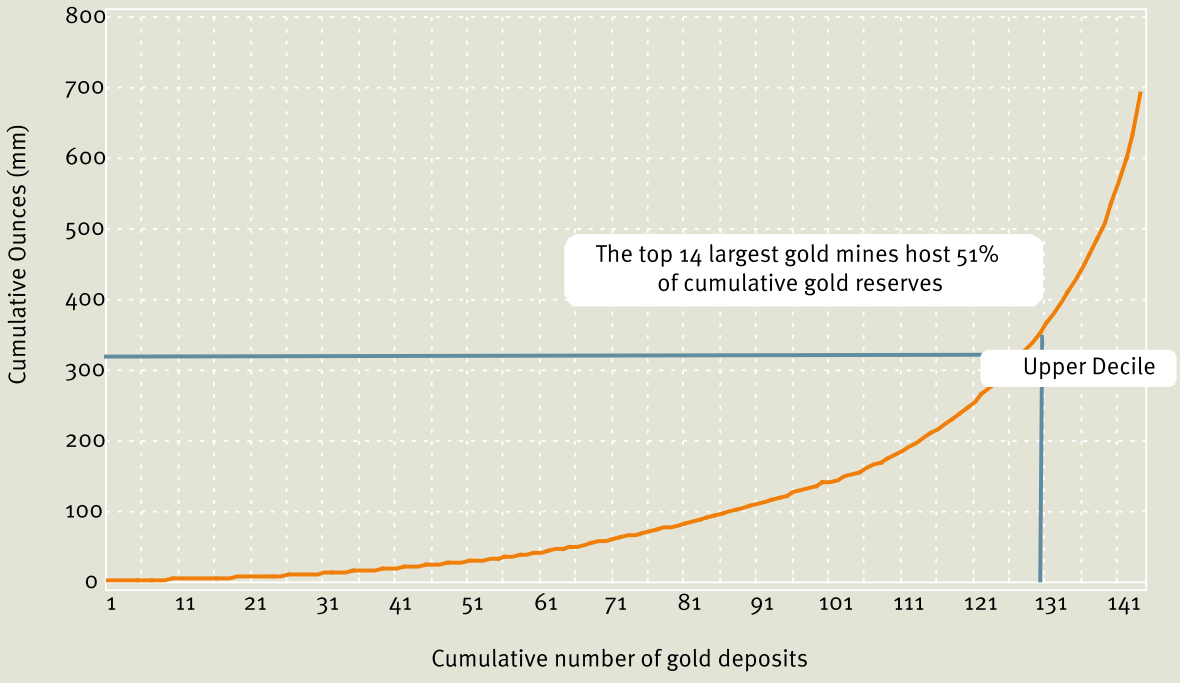

Source: HanOcci Mining Advisors Inc.

an offsetting decrease in discovery or geological risk. In other words, perceived geological potential in the form of less time and money to make discoveries or an increased chance of finding very large or high quality deposits can partially balance many aspects of higher political risks.

The Fraser Institute, a Canadian independent research and educational organization, publishes an annual survey of exploration companies, which ranks exploration attractiveness on the basis of a policy index and a geologic index. Mining industry advisory firm Behre Dolbear has also carried out an annual survey since 1999 to measure political risk in the mining business. Their weighting scheme incorporates seven categories: economic system, political system, social issues, permitting delays, corruption, currency stability, and tax regimes. The two surveys measure risk from slightly different perspectives, with the Fraser Institute capturing risk perceptions more from the exploration stage and Behre Dolbear capturing broader financial risk relevant to the mining stage of mineral supply. The results of their respective 2010 surveys (Table 1-2) show that the two surveys are remarkably similar, with 21 of the 25 countries displaying differences of less than four ranking positions. Two of the four exceptions (Namibia and Russia) display considerably lower perceived risk in the Fraser Institute survey than in the Behre Dolbear survey. One interpretation of this result is that explorationists with a longer-term perspective of the industry are more optimistic about broader regulatory and financial reform in Russia. This, in turn, suggests that policy improvements at the earlier stage of mineral supply (mineral rights and tenure for example) could be highly productive in inducing further exploration investment in Russia.

The level of exploration expenditure in 2010 (third column in Table 1-2) also correlates with risk ranking but is also influenced by the size of the country (Table 1-1). The top six countries for investment, as ranked by both Fraser Institute and Behre Dolbear, account for more than half of total expenditures in all countries.

**Figure 1-6. Cumulative Gold Reserves for 144 Gold Mines (Total Gold Reserves = 687.5 mm ounces)**




Source: HanOcci Mining Advisors

### Table 1-2. Country Risk Rankings

| Country | Fraser Institute Ranking | Behre Dolbear Rank | MEG 2010 Exploration Expenditure ($M) |
|---|---|---|---|
| Australia | 2 | 1 | 1,276 |
| Canada | 1 | 2 | 2,031 |
| Chile | 3 | 3 | 544 |
| Mexico | 4 | 4 | 630 |
| United States | 5 | 5 | 829 |
| Brazil | 7 | 5 | 353 |
| Columbia | 14 | 7 | 182 |
| Ghana | 7 | 8 | 123 |
| Botswana | 5 | 8 | 52 |
| Mongolia | 22 | 8 | 85 |
| China | 11 | 11 | 393 |
| Peru | 9 | 12 | 582 |
| Tanzania | 12 | 13 | 74 |
| Namibia | 8 | 14 | 43 |
| Argentina | 18 | 14 | 281 |
| India | 19 | 16 | 41 |
| Philippines | 25 | 17 | 131 |
| Kazakhstan | 15 | 18 | 76 |
| Zambia | 16 | 19 | 106 |
| South Africa | 23 | 19 | 173 |
| PNG | 17 | 21 | 191 |
| Indonesia | 20 | 22 | 213 |
| Russia | 13 | 23 | 376 |
| DRC | 24 | 23 | 183 |
| Bolivia | 21 | 25 | 28 |

Source: Fraser Institure; Behre Dobear; Metals Economics Group

## 1.3.5 | RETURNS ON EXPLORATION

Returns on exploration are predicated on the successful discovery and development of economic mineral deposits. The profits generated from the few deposits finally developed must offset the cost of failure on all other deposits and provide both companies and governments with sufficient benefits to justify the exploration process in that particular jurisdiction.

## 1.3.6 | RETURNS TO COMPANIES

Returns to exploration companies are highly variable reflecting both discovery risk and geological risk. For most exploration companies, the returns on exploration are highly negative in that they are never able to overcome the low probability of success. For the few successful companies, the returns can be substantial but still highly variable. On average, 100 new copper mines developed between 1989-2008 generated $395 million in returns to development.[3] This compares favourably with an average exploration cost per mine of $221 million. Hidden in the average, however, is the variability of returns based on deposit size and quality. Of the 100 mines developed, 10 accounted for more than 40% of the overall value to development. Only 41 mines returned positive values to exploration assuming the average cost per discovery.

Investing capital in exploration is only possible with the returns associated with the very best deposits. Jurisdictions which refuse to grant the right to develop these deposits jeopardize the exploration investment process.

## 1.3.7 | RETURNS TO THE STATE

The returns to the state from exploration are threefold. First, in most jurisdictions, there is a charge associated with acquiring and holding exploration and mining leases. Second, the exploration activity itself creates

[3] Doggett and Leveille (2010).

employment and purchases of local goods and services. As much exploration takes place in more remote areas of countries where economic opportunities are limited, the impact on local communities can be significant. The third return to the state is to share in the wealth (economic rent) created through the revenues and profits generated from the development of new mines. Governments are entitled to share this economic rent on the basis of being owners of the resources that are being developed. The balancing act for governments is to capture a fair share of this new wealth without discouraging companies from taking the upfront discovery risk and providing capital for new mine developments.

Behre Dolbear (2010) found that anything more than a 50% overall tax burden will result in companies withholding investment. More generally, the concept of a fair share of mineral profits changes with the economic realities and price cycles of the industry. Throughout the late 1990s and early 2000s, many jurisdictions modified their mining tax regimes to make them more competitive in light of low metal prices and reduced investment. In the high metal price environment of the past five years, the opposite reaction has occurred, with many countries introducing new royalty provisions to capture a larger share of mineral profits.

In a broad sense, mineral resource taxes and royalties can be based on production, revenue or profit. Production-based royalties usually focus on bulk commodities and are applied as a set fee per tonne of production. For most base and precious metal mines, governments collect a combination of taxes on revenue and profit. Collecting taxes and royalties on revenue or profit is a straightforward way of assuring that the state captures its fair share of value from all mining operations. Most mining companies prefer taxes to be levied on profit rather than revenue, particularly during periods of low commodity prices when revenue-based royalties may be higher than profits earned on the mine.

Tax policy must also take into account the wide distribution of size and quality of mineral deposits underlying new mines. At the lower quality end, it is important not to tax away all profits so as to make mines uneconomic for companies to construct. At the other end of the quality spectrum, the few world-class mines provide a different challenge. On the one hand, these exceptional deposits provide the incentive for companies to undertake the high-risk activities of exploration and the capital-intensive process of mine development. On the other hand, most of the value created by the industry results from these world-class deposits so it is important for governments to share these prizes. Also, as these deposits are often the ones to get attention in the media and among the broader base of the population, it is important that government be seen as capturing a fair share of the value of the resources belonging to the state. Historically, Australia provides an interesting example of applying special policy considerations to deposits, which are sufficiently large to be strategic to national or state interests. Many of the world-class deposits discovered and developed in Australia are subject to specially designed one-off tax and royalty schemes. For example, the Olympic Dam deposit and the Broken Hill deposit each have their own specially designed royalty plan.

## 1.3.8 | GOVERNMENT EQUITY INTERESTS

A key consideration with respect to sharing benefits and risks in the mineral business is the degree that exploration and mining companies engage in joint venture agreements in the form of options and earned interests on mineral properties. In this context, another method for the government to capture a share of returns from mining operations is to become a partner in the development of the mine and to share in profits generated on the basis of earned equity interests. Examples of this type of participation in mining projects can be found across many jurisdictions. A recent example is the equity participation of the Mongolian government in the development of the Oyu Tolgoi deposit. From a corporate perspective, an equity interest means that the government is sharing in the project risk as well as profits. On the other hand, governments can be capricious. They can require a carried interest and, in some cases, unilaterally increase their equity position once a project is shown to be highly profitable. Governments also often establish their equity interest participation rate on a specific project rather than as a set policy.

# CHAPTER 2

# THE ROLE OF CAPITAL MARKETS IN THE MINERAL EXPLORATION ENVIRONMENT

# 2.1 | ROLE OF RUSSIA'S CAPITAL MARKETS

The development of policies designed to foster investment in the exploration and mining sector of the Russian Federation requires a clear understanding of the sources of and the mechanisms behind the raising and distribution of capital. For new entrants, like Russia, there are both opportunities and challenges to build capacity to compete for a share of both domestic and international capital markets in the exploration and mining sector.

# 2.2 | OVERVIEW OF MINING-RELATED CAPITAL MARKETS

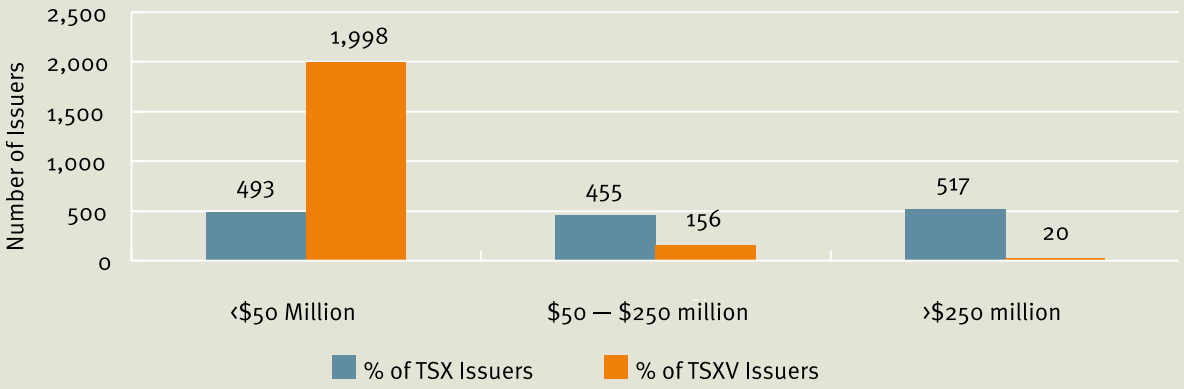
The primary role of capital markets is to raise long-term funds for corporations, governments, and institutions while providing a platform for the trading of securities. This fundraising is governed by the performance of the stocks and bonds within capital markets. Member organizations of capital markets typically issue stocks and/or bonds to raise funds for their business endeavours. Investors can then participate in capital markets by purchasing and selling these financial instruments.

The unique economic features of the mineral exploration and mining business are shaped by the underlying geological characteristics of mineral deposits found in nature. Early-stage, high-risk exploration funding is typically raised by junior mining exploration companies. Later-stage development and production-stage mining companies are typically concerned with raising debt and equity capital for the development of new mining projects or the expansion of existing operations.

# 2.3 | COMPARISON OF CANADA AND GLOBAL RESOURCE CAPITAL MARKETS

The TMX Group Inc. (TMX) owns and operates Canada's two national stock exchanges, the Toronto Stock Exchange (TSX), serving the senior equity market, and the TSX Venture Exchange (TSXV), serving the venture equity market. As of March 31, 2011, the TMX had 3,639 issuers in all industries of which 285 (7.8%) were international (i.e. non-Canadian domiciled). These issuer listings are split between the TSX and the TSXV. The TSX had 1,465 issuers representing a market capitalization of $1.8 trillion of which 155 (10.6%) were international listings and represent a market capitalization of $80.5 billion (4.5%). The TSXV had 2,174 issuers representing a market capitalization of $39.9 billion, of which 130 (6%) are international and represent a market capitalization of $3.6 billion (9%).

**Figure 2-1. Market Capitalization, TSX and TSXV (as at March 31, 2010)**




Source: TMX Group

The TSXV allows for smaller cap, venture-type companies to efficiently raise growth capital. Many of these companies will eventually graduate to the TSX. From January 1, 2000 to March 31, 2010, 459 companies graduated from the TSXV to the TSX while an additional 77 TSXV companies were fed into the TSX through mergers or acquisition.

Approximately one-third of companies listed on the TSX have market capitalizations of greater than $250 million, one-third have market capitalizations of between $50 and $250 million and the remaining third have market capitalizations of less than $50 million (Figure 2-1). Of the 2,154 issuers on the TSXV, 92% have market capitalizations of less than $50 million, 7% have market capitalizations between $50 and $250 million and only 1% have market capitalizations greater than $250 million.

The TMX is the eighth largest exchange group by market capitalization, sixth largest by equity capital raised and the second largest by number of issuers. As of October 2010, the Russian stock market (MICEX Group) by comparison had 243 issuers versus 3,639 on Canadian exchanges (TMX). Turnover on the MICEX Group was US$364.5 billion versus US$1,103.3 billion on the TMX Group.

## 2.3.1 | THE SOPHISTICATION OF THE CANADIAN CAPITAL MARKETS COMPARED TO GLOBAL PEERS

According to the 2009 Financial Development Report written by the World Economic Forum, Canada is third among 55 countries with respect to financial access/sophistication, including access to capital in the form of venture capital, equity, credit and loans. The country's business environment, as defined by human capital, technology, taxation and the cost of doing business, ranks fourth globally. Canada scores particularly high with respect to the quality of its business schools, marginal tax variation and infrastructure. Canada ranks seventh in financial stability, which captures currency, banking and sovereign debt crisis risk.

With respect to non-banking financial services (brokers, dealers and asset managers and insurance companies), Canada ranks seventh. According to Towers & Watson, 26 of the largest 500 asset managers (public & private including insurance-related funds) are domiciled in Canada managing over US$2.5 trillion in assets. Of this amount, just under US$600 billion is managed by public mutual funds. This compares to the US$3.5 billion managed in Russia by public mutual fund managers. Canada also hosts 20 of the 300 largest pension and investment funds in the world that manage approximately US$550 billion in assets.

Canada's institutional environment is ranked 12th. This encompasses laws and regulations that allow for the development of efficient financial intermediaries, markets and services, including quality of contract enforcement and corporate governance, both of which safeguard investors' rights. Canada ranks seventh with respect to financial markets (bonds, stocks, foreign exchange and derivatives) that encourage long-term growth by allowing for risk allocation and diversification. Canada's greatest strengths are its official supervisory power over corporate governance and the strength of its legal rights — specifically the time, number of procedures and cost of enforcing a contract.

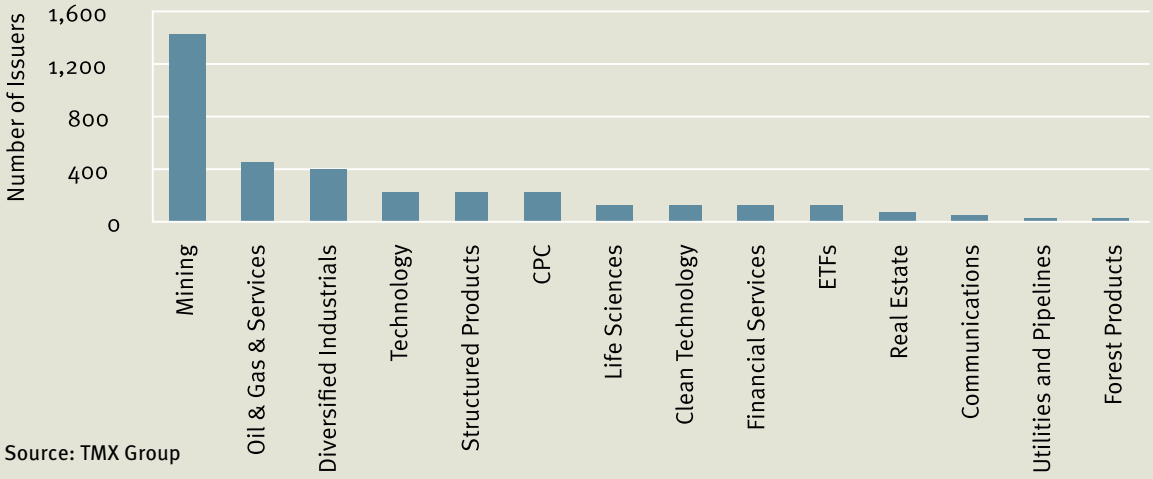
## 2.3.2 | RESOURCE CAPITAL MARKETS IN CANADA AND GLOBALLY

By sector, the TMX has a diverse group of issuers (Figure 2-2). However, the distribution is highly weighted toward resources, with the mining and energy sectors accounting for about half of all issuers. Mining alone has 1,428 issuers accounting for 39% of the total. An even higher percentage of the international issuers on the TMX (46%) is in the mining sector. Furthermore, the TMX acts as a channel for investment in the mining sector from the United States as approximately 40% of proceeds for mine financings on the TMX are sourced from that country. In the context of global mining equities, the number of listings on the TMX accounts for 55% of the worldwide total.

On the global scale, the TMX is the dominant player in terms of new mine listings and number of financings in the mineral sector (Table 2-1). By 2009, 78% of new mining listings took place on the TMX. With respect to equity mine financings, in 2009, $22.4 billion in equity was raised by TMX-listed mining companies in 1,962 transactions representing 84% of the total number of mining financings and 34% of the total equity capital raised.

The five-year trend in mine financings (2005-2009) shows that the TMX accounted for 32% of the $200 billion in

**Figure 2-2. TMX — Number of Issuers by Sector**




Source: TMX Group

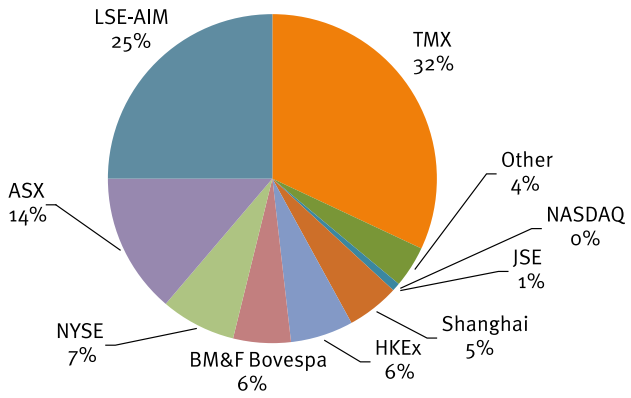
**Table 2-1. Comparison of New Mining Listings of the TMX vs Global Peer Group**

| | TSX | TSXV | TSX & TSXV | LSE | AIM | LSE & AIM | ASX | JSE | HKEx | NYSE | NYSE Amex | NYSE & Amex |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Number of Mining Issuers Listed | 331 | 1,103 | 1,434 | 37 | 134 | 171 | 610 | 55 | 36 | 60 | 58 | 118 |
| Quoted Market Value (C$ billions) | 347 | 20 | 368 | 420 | 15 | 435 | 553 | 378 | 122 | 1,030 | 22 | 1,052 |
| New Mining Listings | 18 | 86 | 104 | 2 | 2 | 4 | 22 | 0 | 1 | 1 | 1 | 2 |
| Equity Capital Raised (C$ billions) | 19.4 | 2.8 | 22.2 | 20.8 | 1.5 | 22.3 | 13.5 | 0.007 | 3.0 | 4.5 | 0.0 | 4.5 |
| Number of Financings | 395 | 1,567 | 1,962 | 4 | 162 | 166 | 186 | 2 | 3 | 8 | 0 | 8 |

Source: TMX Group Inc.; Exchange Websites; World Federation of Exchanges

total mine financings, followed by LSE-AIM (25% of equity raised) and the ASX (14% of equity raised) (Figure 2-3). By comparison, the Johannesburg Stock Exchange (JSE) hosts mining companies with similar market value as Canada, $378 billion on the JSE versus $367.5 billion on the TMX. However, in 2009, there were just two mining financings on the JSE compared to the nearly 2,000 completed in Canada. The Hong Kong Stock Exchange lists mining companies with quoted market value of $122.2 billion and completed three mining-related financings in 2009. Hong Kong exchange officials have indicated that they wish to materially increase the size of the exchange's mining capital markets business, in view of the growing demand for resources in Asia.

**Figure 2-3. TMX Leads in the Value of Mining Financings (2005-2009)**



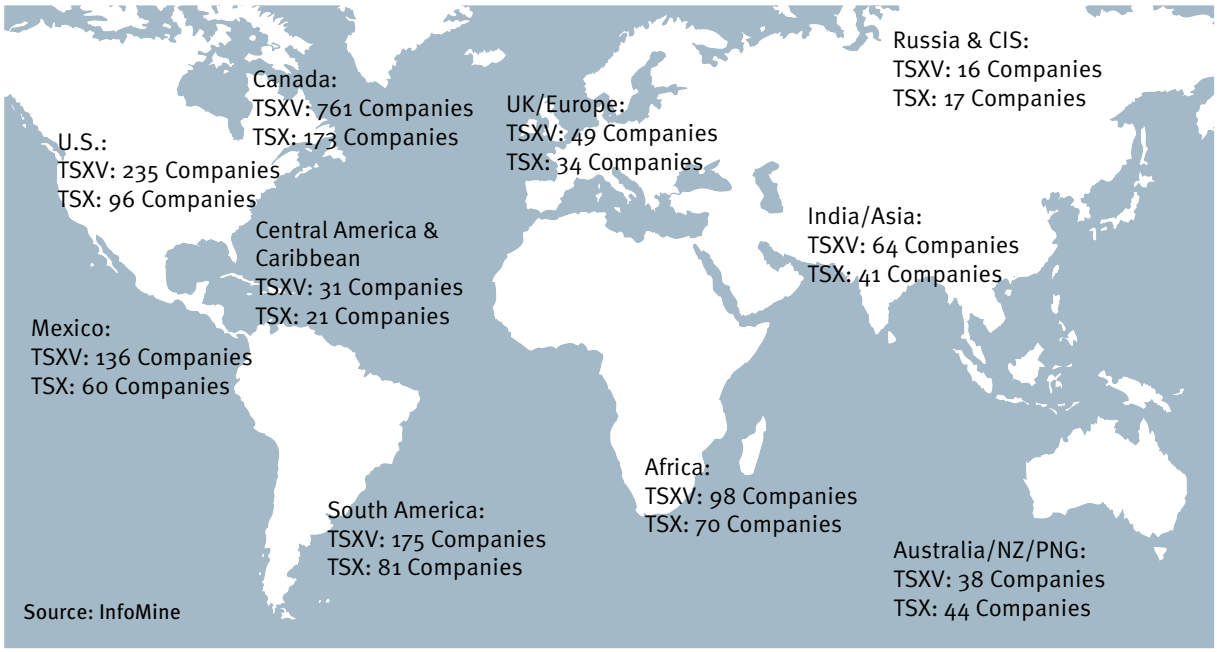

TMX-listed mining companies operate around the world (Figure 2-4). Mining companies listed on the TSX operate more than 325 producing mines worldwide, of which only 79 are in Canada[4]. Fifty percent of the 9,700 exploration projects owned by companies listed on the TSX and the TSXV are outside of Canada. The most popular destinations for mining capital flows outside of Canada include Mexico, the U.S., South America, Africa, India/Asia, and the U.K./Europe. Russia has received relatively little attention vis-à-vis its global competitors.

## 2.3.3 | DISTRIBUTION IN SIZE AND VALUE OF MINING ISSUERS

The distribution of the size and value of mining issuers within the TMX reflects the make-up of the two exchanges – the senior TSX and the junior TSXV. As of December 31, 2010, there were 358 mining companies listed on the TSX, and 1,180 companies on the TSXV. The total market valuation of these companies was $564.7 billion, 92% ($522.7 billion) on the TSX, and just 8% ($42 billion) on the TSXV. On average, the market capitalization value of a mining company on the TSX was $1.58 billion compared to $35.6 million on the TSXV.

However, these average values do not capture the distribution of values across individual companies. Only 11 mining companies have a market value greater than $10 billion, six companies have a market capitalization of between $5 and $10 billion, 64 companies have a

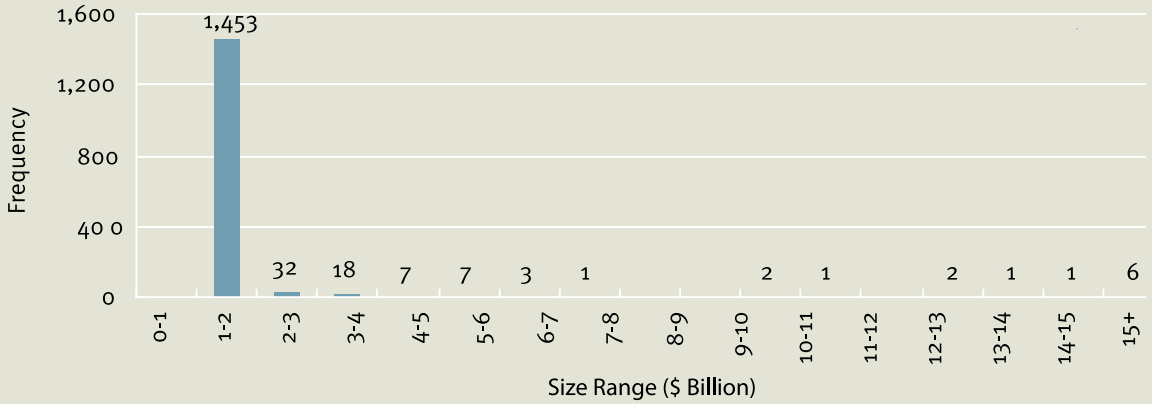
**Figure 2-4. TMX Listed Companies Operate Around The World**




[4] Mining Weekly (September 4, 2009).

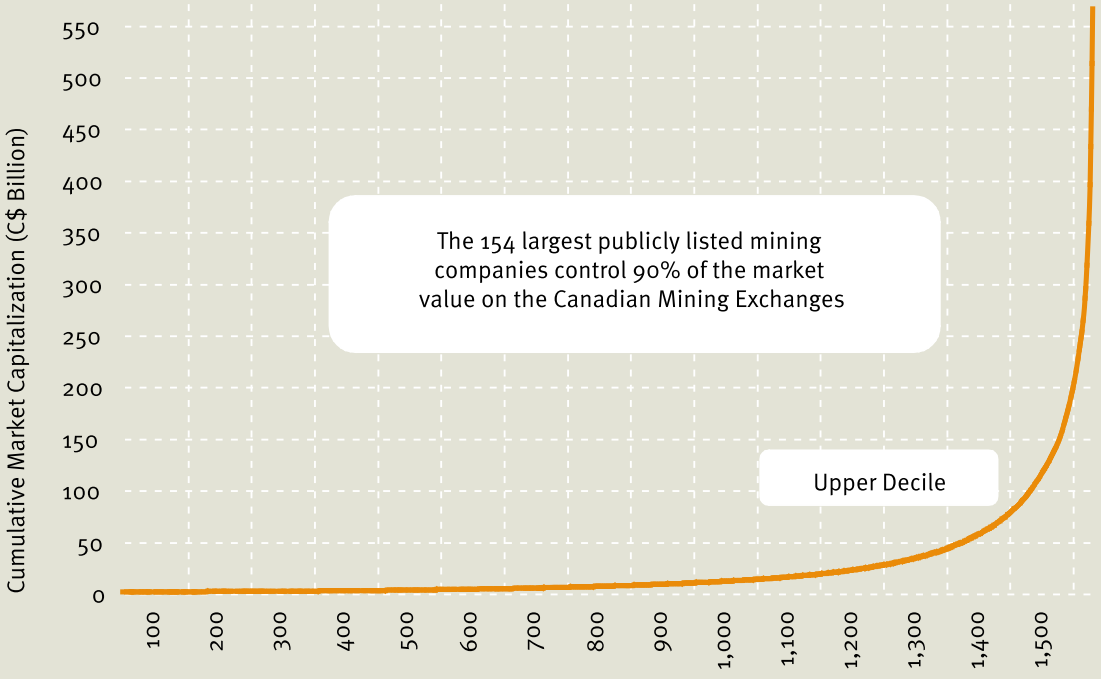
market value of between $1 billion and $10 billion, and 1,453 companies have a market value of less than $1 billion (Figure 2-5). The structure and market value distribution of the Canadian mining capital markets reflects the skewed distribution of returns available from mineral deposits in nature. In practical terms, this means that thousands of junior mineral exploration companies are prepared to face the large discovery risk associated with finding an economic mineral deposit; however, only a few will make a large multi-billion dollar mineral discovery. The result is that a few large mining enterprises control a disproportionate amount of mineral wealth in a few of the largest mineral deposits. Just 10% (154) of the companies account for approximately 90% of the overall market capitalization (Figure 2-6). Or, from the perspective of the smaller companies, 90% of these companies capture only 10% of the market value.

**Figure 2-5. Distribution of Mining Company Market Capitalization ($ billion) (Total of 1534 Mining Companies)**




Note: Data for the market capitalization of four junior companies was removed reflecting the non-trading status of these companies at the time of the analyis.

**Figure 2-6. Cumulative Market Value (C$ Billion) for 1,534 Publicly Listed Mining Companies in Canada**




Source: HanOcc Mining i Advisories Inc.; TMX Group

# 2.4 | INSTITUTIONAL INFRASTRUCTURE AND SUPPORT SERVICES FOR MINING CAPITAL MARKETS

Canada is the clear leader on global mining capital markets. This is due to not only the sophisticated nature of Canada's legal and financial institutions, but also to the skill, knowledge and expertise that has developed to support the mining industry. A significant professional support system and network of mining expertise has been developed around these capital markets, including:

## EDUCATIONAL SUPPORT

Canadian universities and colleges offer undergraduate and graduate degrees in geological sciences, geological engineering, and mining and metallurgical engineering in all regions of the country. Approximately 25 schools offer degrees in geology while nine offer degrees specifically tailored to mining and processing engineering.

## THE LEGAL MINING PROFESSION

The level of sophistication of the Canadian mining capital markets industry combined with the global outreach of Canadian companies has resulted in the development of a sophisticated legal profession that supports the underlying mining capital markets.

## PROFESSIONAL GEOSCIENTISTS AND ENGINEERS

The majority of Canadian provinces and territories have regulated the practice of geosciences and have created professional geoscientist and engineering associations. Legislation has been designed to protect the public and investors by establishing regulated associations with the power to admit only qualified persons, to encourage continuing professional competence, to discipline members for professional misconduct and to prevent unqualified individuals from practicing.

## PROFESSIONAL INDUSTRY ORGANIZATIONS

Professional industry organizations and groups exist at the national level and in most regions of Canada. The two most prominent groups are:

1. The Prospectors and Developers Association of Canada (PDAC), with 6,000 individual members and 950 corporate members. Among other activities, the PDAC encourages the highest standards of technical, environmental, safety and social practices in Canada and internationally. The association's activities and services generally fall into three categories: advocacy, information, and networking.
2. The Canadian Institute of Mining, Metallurgy and Petroleum (CIM), is the leading technical society of professionals associated with the Canadian minerals and materials industry with 11,000 members from industry, government and academia who are dedicated to the discovery, production, utilization and economics of minerals, metals and petroleum. Thousands more are also involved as CIM Branch members all across Canada and 1,000 live abroad.

## PROFESSIONAL MINING ENGINEERING FIRMS AND TECHNICAL SERVICES

A multitude of Canadian-based technical services and mining engineering firms support the mining industry in Canada and around the world. These groups provide a wide variety of services and support to the exploration, mining, corporate, and government sectors responsible for the mining and metals industry. Exploration services include mineral resource and reserve estimates and audits, NI 43-101 and JORC Compliant Technical Reports, Property Evaluations, Exploration Project Management, Remote Sensing and GIS Services, and Database Management. Mining services encompass such activities as metallurgical investigation and Flowsheet Design, Mineral Resource and Reserve Estimates and Audits, NI 43-101 and JORC Compliant Technical reports, and Strategic Mine Planning and Design. Services provided for the government include Independent Qualified Person Reviews, Institutional Strengthening, and First Nations Services.

### INVESTMENT BANKS

A wide array of large institutional and smaller specialty boutique investment banks support and provide capital markets services to the mining industry. Mining analysts, which typically have degrees in geology or mining engineering along with advanced degrees in business or mineral economics, bridge the geoscientific aspects of a mining project with financial criteria to make predictions about the size of mineral resources, future production and cost estimates, and ultimately expectations about future cash flow, earnings and valuation of publicly trading companies and assets.

More than 200 mining research analysts cover TMX-listed mining companies. Of the five top mining analysts identified in the 2009 and 2010 global annual surveys published in 2009 and 2010 by Forbes and Zacks Investment Research (Zacks), four were Canadian. In the Wall Street Journal Best on the Street survey, three of the top five mining analysts were Canadian.

### FUND MANAGERS AND INVESTMENT PROFESSIONALS

The capital markets are also characterized by "buy-side" fund managers and portfolio managers that create funds to invest in publicly listed mining companies. Fund managers can be "generalists" who have no specialized knowledge of the mining sector, but make investments in mining-related equities for portfolio diversification and strategic reasons. There are also numerous specialty mining resource funds with a mandate to invest exclusively in mining and mineral resource related companies.

## 2.4.1 | SECURITIES REGULATORS

In Canada, capital markets are regulated by provincial securities regulators, the largest of which is the Ontario Securities Commission, located in Toronto. Like in other jurisdictions, the primary roles and objectives of securities regulators are to:

### PROTECT THE INVESTOR

Regulators are charged with ensuring that investors are protected from being mislead or manipulated or from fraudulent practices including insider trading and misuse of client assets. They are also responsible for ensuring that only duly authorized persons are permitted to present themselves to the public as providing investment services and for setting minimum standards for market participants.

### ENSURE THAT THE MARKETS ARE FAIR, EFFICIENT AND TRANSPARENT

Laws, regulations and rules to protect investors also ensure that the market is fair and transparent. The degree and rate that information is transmitted and propagated through the market defines the transparency of the market. Ideally, both pre-trade and post-trade information is made available to the public as the transactions occur.

### REDUCE AS MUCH AS POSSIBLE SYSTEMIC RISK (MARKET RISK THAT CANNOT BE ELIMINATED THROUGH DIVERSIFICATION)

Regardless of the level of regulatory oversight, there is always the risk of financial failure of a market intermediary. When a failure does occur, the regulator seeks to reduce the impact of that failure and attempts to isolate the risk solely to the failing institution. Market intermediaries are required to meet adequate and ongoing capital requirements along with any other prudent requirement that may be necessary. This ensures the winding-up of an intermediary without loss to customers and counterparties and without systemic damage.

The objectives of securities regulation have developed around several principles:

1. Responsibilities should be clearly and objectively stated;
2. Regulators should have operational independence and accountability in the exercise of its powers and functions;
3. They should adopt clear and consistent regulatory processes; and
4. Regulators should observe the highest professional standards including appropriate standards of confidentiality.

## 2.4.2 | LISTING REQUIREMENTS

Companies choose to list on a particular stock exchange for a variety of reasons including: the listing process and cost, liquidity of the underlying stock market, access to investors, corporate governance requirements and company and market regulation. The TMX adopts a much stricter approach to listings than other stock exchanges. The TMX evaluates companies for listing purposes across various categories (Table 2-3). A Tier 1 mining company must have a material interest in a property in order to be listed. Tier 2, TSX Non-exempt Exploration and Development Stage listing companies, must have a minimum 50% ownership in the property with ownership under 50% being evaluated on a case-by-case basis dependent upon program size, stage of development of the property and strategic alliances. Other requirements include:

- The TSXV also requires sponsors for mining applicants to be responsible for reviewing and commenting on such things as material agreements relating to land tenure for the company's principal properties (including the legal system), ability to mine, terms for maintaining mineral rights, legal and other impediments to maintaining or securing property;
- The TSX recommends a work program ranging from $200,000 on Tier 2 property to commercial level mining operations on a TSX Exempt mining company;
- With respect to capital requirements, the TSXV requires Tier 1 mining exploration companies to have enough working capital to execute the business plan for at least 18 months and for Tier 2 at least 12 months. In addition, net tangible asset requirements range from none for Tier 2 up to $7.5 million for a TSX Exempt company; and
- Both the TSX and TSXV require the management and board of directors to have expertise relevant to the company's business and the capital markets. Additionally, at least two directors must be independent.

The Australian Stock Exchange (ASX), by comparison, requires that an entity have A$1 million in net profit over the last three years plus A$400,000 net profit over the last 12 months or A$2 million in Net Tangible Assets or A$10 million in market capitalization. Mining exploration companies are typically listed under the A$2 million Net Tangible Asset Test. If more than half of their total tangible assets are in the form of cash, the company must prove that it has firm commitments consistent with its business objectives to spend at least half of its available cash, which for mining and exploration companies is satisfied by setting out an expenditure program in its prospectus. Companies under the asset test must also have working capital of at least A$1.5 million post-IPO after allowing for the first full year's budgeted administrative costs and the cost of acquiring plant, equipment and mining tenements. The company must also sign a statement that it has enough working capital to carry out its stated objectives. All resource companies must include in their prospectus independent technical reports that adhere to the Joint Ore Reserves Committee (JORC). It is standard practice for a mining company to provide details of its mining tenements.

## Table 2-3. TMX Listing Requirements for Exploration & Mining Companies

| | TSX Venture Tier 1 | TSX Non-exempt Exploration and Development Stage | TSX Venture Tier 2 |
|---|---|---|---|
| Property Requirements | Material Interest in a Tier 1 property[4] | Advanced Exploration Property[2] Minimum 50% ownership in the property[3] | Significant interest[5] in a qualifying property, or, at discretion of the Exchange, a right to earn a significant interest[5] in a qualifying property; sufficient evidence of no less than $100,000 of exploration expenditures on the qualifying property in the past three years |
| Recommended Work Program | $500,000 on the Tier 1 property[4] as recommended by geological report | $750,000 on advanced exploration property[2] as recommended in independent technical report[6] | $200,000 on the qualifying property as recommended by a geological report[6] |
| Working Capital and Financial Resources | Adequate working capital and financial resources to carry out stated work program or execute business plan for 18 months following listing; $200,000 in unallocated funds | Minimum $2 million working capital, but sufficient to complete recommended programs plus 18 months G&A[1], anticipated property payments and capital expenditures; appropriate capital structure | Adequate working capital and financial resources to carry out stated work program execute business plan for 12 months following listing; $100,000 in unallocated funds |
| Net Tangible Assets, Earnings or Revenue | $2,000,000 net tangible assets | $3,000,000 net tangible assets | $3,000,000 net tangible assets |
| Other Criteria | Geological report[6] recommending completion of work program | Up-to-date, comprehensive technical report[6] prepared by independent qualified person and 18 month projection (by quarter) of sources and uses of funds, signed by CFO | Geological report[6] recommending completion of work program |
| Management and Board of Directors | Management, including board of directors, should have adequate experience and technical expertise relevant to the company's business and industry as well as adequate public company experience; companies are required to have at least two independent directors | | |
| Distribution, Market Capitalization and Public Float | Public float of 1,000,000 shares; 250 public shareholders each holding a board lot and having no resale restrictions on their shares; 20% of issued and outstanding shares in the hands of public shareholders | $4,000,000 publicly held 1,000,000 free trading public shares; 300 public holders with board lots | Public float of 500,000 shares; 200 public shareholders each holding a board lot and having no resale restrictions on their shares; 20% of issued and outstanding shares in the hands of public shareholders |
| Sponsorship | Sponsor support may be required | Required (may be waived if sufficient previous 3rd party due diligence) | Sponsor support may be required |

(1) General and administrative expenses.
(2) "Advanced exploration property" refers to one on which a zone of mineralization has been demonstrated in three dimensions with reasonable continuity indicated. The mineralization identified has economically interesting grades.
(3) A company must hold or have the right to earn and maintain a 50% interest in the property. Companies holding less than a 50% interest will be considered on a case-by-case basis looking at program size, stage of advancement of the property and strategic alliances.
(4) "Tier 1 property" means a property that has substantial geological merit and is:

a) a property in which the issuer holds a material interest, and;
b) a property on which previous exploration, including detailed surface geological, geophysical and/or geochemical surveying and at least an initial phase of drilling or other detailed sampling (such as trench or underground opening sampling), has been completed;
c) a property on which drilling or other detailed sampling on the property has identified potentially economic or economic mineralization;
d) an independent geological report recommends a minimum $500,000 Phase 1 drilling (or other form of detailed sampling) program based on the merits of previous exploration results; or an independent, positive feasibility study demonstrates that the property is capable of generating positive cash flow from ongoing operations.

(5) "Significant interest" means at least 50% interest.
(6) "Geological report" or "technical report", in the case of a mining property, is a report prepared in accordance with National Instrument 43-101 - Standards of Disclosure for Mineral Projects or any successor instrument.

Source: TMX.

## 2.4.3 | ISSUERS OF SECURITIES

Mining companies listed on Canadian exchanges are deemed issuers of securities. The main principles and responsibilities related to the issuers of securities are:

1. There must be full, timely and accurate disclosure of financial results and other information that will assist the investor in making decisions;
2. Investors holding securities in a company should be treated in a fair and equitable manner; and
3. Accounting and auditing standards should be of internationally acceptable quality.

In addition to financial results that must be audited by a professionally Charted Accountant and a discussion of corporate activity that is disclosed quarterly, publicly-listed mining companies are also required to accurately and fully disclose any material information that may impact the value of a company on an on-going basis. In terms of the disclosure of geotechnical information required for mining projects, Canadian securities regulation requires mining companies to report their reserves and resources according to National Instrument 43-101 (NI 43-101). These 43-101 independent technical disclosure requirements must be prepared by a Qualified Person (QP) and properly filed in such a manner that the investing public can access the documents.

## 2.4.4 | NATIONAL INSTRUMENT 43-101

NI 43-101, developed by the Canadian Securities Administrators and administered by the provincial securities commissions, governs how issuers disclose scientific and technical information about their mineral projects to the public. It ensures that the investing public can be reasonably confident that information is as accurate and truthful as possible. Any mining company listed on a Canadian exchange or the over-the-counter market must adhere to NI 43-101 not only when reporting in Canada but also when reporting anywhere in the world. This level of reporting gives investors a greater level of confidence in Canadian-listed mining stocks and is responsible, in part, for the success of the TMX in regards to new listings and financings.

NI 43-101 covers oral statements, written documents, presentations and websites. It requires that all disclosure be based on advice by a Qualified Person (QP) and in some circumstances that the person be independent of the issuer and the property. This QP, in the spirit of the National Instrument, is required to be a reputable professional who is knowledgeable of the mineral property concerned, and who has sufficient experience and qualifications to make the statements which are made within the report. Often the QP need not be the author of the report, but deems the report as being compliant with the National Instrument, including that a QP verified the data disclosed (including sampling, analytical and test data underlying the information or opinions contained in the written disclosure), a description of how the data were verified and any limitations on the verification process, and an explanation of any failure to verify the data. This is a matter of professional integrity and carries legal risk, as misleading statements can result in legal sanctions in Canadian and other jurisdictions.

A QP is defined in the National Instrument as an engineer or geoscientist:

1. With at least five years of experience in mineral exploration, mine development or operation or mineral project assessment, or any combination of these;
2. Has experience relevant to the subject matter of the mineral project and the technical report; and
3. Is in good standing with a professional association and, in the case of a foreign association, is of recognized stature within that Organization.

One key aspect of NI 43-101 is the codification of form and content of a compliant report (i.e. a report that complies with the Reporting Standard). The prescribed disclosure relates to:

1. Scientific or technical information, including disclosure of a mineral resource or mineral reserve, concerning a mineral project on a property material to the issuer must be based upon information prepared by or under the supervision of a QP;
2. What the National Instrument is to be used for, such as which types of mineral properties must be covered by a compliant report;
3. The terminology to be used to describe various features, both geologically and financially, within the report;

4. The type of information to be discussed and the technical data which must be portrayed, for various levels of reporting;
5. Lists of approved Competent Persons, and the definition of Groups and Associations which may qualify to certify such a person as "Qualified";
6. Statement that a QP vouches for the accuracy and completeness of the contained information and the manner in which it is presented; and
7. Guidance on reporting historical mineral resource estimates.

Prescribed disclosure within the National Instrument precludes a company from reporting:

1. Quantity, grade, or metal or mineral content of a deposit that has not been categorized as an inferred mineral resource, an indicated mineral resource, a measured mineral resource, a probable mineral reserve or a proven mineral reserve;
2. Results of an economic analysis that includes inferred mineral resources; or
3. The terms of a preliminary feasibility study, pre-feasibility study or feasibility study when referring to a study unless the study satisfies the criteria set out in the National Instrument.

## 2.4.5 | THE JOINT ORE RESERVES COMMITTEE (JORC) CODE

JORC is another form of reporting on exploration results, mineral resources and ore reserves used in Australia and New Zealand. The Code sets minimum standards for public reporting and its underlying principles are:

- Transparency – clear and unambiguous presentation of information;
- Materiality – all the information reasonably required and expected; and
- Competence – public reports based on work undertaken by Competent Persons.

The Code was first released in 1989, with the latest edition included in the ASX Listing Rules on December 17, 2004. JORC provides a mandatory system for classification of tonnage/grade estimates according to geological confidence and technical/economic considerations in reports prepared for the purposes of informing investors, potential investors and their advisors. The Code requires public reports to be based on work undertaken by a Competent Person and the Code describes the qualifications and type of experience required to be a Competent Person. The Code also provides extensive guidelines on the criteria to be considered when preparing reports on exploration results, mineral resources and ore reserves. However the JORC Code does not regulate the procedures used by Competent Persons to estimate and classify mineral resources and ore reserves. Nor does it regulate companies' internal classification or reporting systems or deal with breaches of the Code by:

- Companies which are the responsibility of the ASX; or
- By individuals, as these are dealt with under the Code of Ethics of the Australasian Institute of Mining and Metallurgy, the Australian Institute of Geoscientists or the recently introduced Recognized Overseas Professional Organizations.

## 2.4.6 | COMPARISON OF NI 43-101 WITH THE JORC CODE

The NI 43-101 is widely considered to be the most rigorous mineral disclosure policy in the world. The NI 43-101 requires substantially more technical disclosure to the market than the equivalent JORC Code because the JORC Code is primarily designed for reporting the status of a mineral resource, whereas the NI 43-101 is a code of securities disclosure. This distinction is based on the derivation of the two codes: the JORC Code is derived from the Joint Ore Reporting Committee, an independent mineral industry body formed from industry professional associations. The NI 43-101 is a code derived from the Canadian Securities Authorities. The JORC Code, were it equal with the NI 43-101 would be derived from the Australian Securities and Investment Commission, not the relevant industry bodies. The NI 43-101 holds legal status in Canada; therefore, the QP responsible for overseeing the design of the company's exploration programs and for monitoring the company's reporting of results must be named and can be held legally responsible in the event that a particular report or press release is found to be deliberately misleading or otherwise fraudulent.

The technical information required in a reserve declaration under the NI 43-101 exceeds that within the JORC Code, primarily by stipulating that certain geological parameters of the mineral reserve must be presented within a report, published in full, and presented in a particular way. Conversely, JORC compliant technical reports are not commonly published in full upon the Australian Stock Exchange as this is not required by Australian regulatory authorities. Rather than be published in full, often a summary of the key points is published, which can preserve commercially sensitive information, and often allow deleterious information to remain out of the public forum.

### 2.4.7 | OTHER REPORTING SYSTEMS

The two other mineral resource and reserve classification systems generally accepted by the international mining industry are the South African Code for the Reporting of Exploration Results, Mineral Resources and Mineral Reserves (the SAMREC Code) and the Code for Reporting of Mineral Exploration Results, Mineral Resources and Mineral Reserves (the European Reporting Code). These four codes — National Instrument 43-101, JORC Code, SAMREC Code and European Reporting Code — are referred to as the JORC-type codes or CRIRSCO family codes. CRIRSCO was formed in 1994 as a grouping of representatives from organizations that are responsible for developing mineral reporting codes and guidelines in Canada, Australia, Chile, South Africa, the UK, the US, and Western Europe. Listed on the stock exchanges of these countries can be found 80% of the mining industry's capital. CRIRSCO has developed an International Minerals Reporting Code Template in the hope that countries that attempt to create their own codes will use this template, thus creating some consistency among reports issued by mining companies and more fairness and transparency for the investor.

Recently, Russia announced its intention to adopt the CRIRSCO International Minerals Reporting Code Template. While this endeavour will bring the current Russian standard system for classification of mineral reserves and resources closer to internationally accepted standards, adopting a more stringent code similar to NI 43-101 would result in greater transparency and investor protection. The CRIRSCO template sets the required minimum standard. Additionally the NI 43-101 has legal status, making a QP legally accountable for the disclosed technical information. It provides the government with more regulatory remedies and gives investors added confidence knowing that companies that provide fraudulent and misleading information can be pursued through legal means.

## 2.5 | FOREIGN DIRECT INVESTMENT IN MINING

Favourable mineral resource endowment in its own right is not sufficient in attracting FDI. Layered on top of mineral resource endowment must be constructive economic policies, a stable socio-political and regulatory environment and a competitive investment and operating environment. Russia and South Africa provide two examples where the development of large endowments of natural resources is hindered by difficulty in tapping global mining capital markets to attract the requisite FDI. An example of how to modify legislation and capital markets to entice the flow of FDI in the mining sector is provided by Chile.

### CASE STUDY OF CHILEAN REGULATORY REFORM

In 2002, Anglo American, a London-based mining company, invested US$1.3 billion to acquire the Disputada mine in Chile (now Minera Sur Andes) while abandoning the Konkola Deep project in Zambia.[5] The reason cited for this decision by Anglo American was that, despite the huge potential of the Konkola Deep project, they opted to invest where the return was more near-term and certain. Interestingly, Chile would have been perceived as a much riskier place to invest than Zambia if this decision was made in the early 1970s when

[5] Lyal White, "Why do Investors Invest? The Rationale for South African Firms in Latin America", Brenthurst Discussion Paper, Brenthurst Foundation, January 2007.

the Chilean government expropriated mining company assets. Over a two-decade period beginning in the mid 1970's, Chile transformed its closed economy with strong interventionist tendencies into a liberated, world integrated economy with a free and open market. Several actions taken by Chile to attract FDI include that it:

- Adopted an open trade regime;
- Reduced and made more uniform its import tariffs;
- Eliminated exchange and trade controls and minimized restrictions on capital movements;
- Liberalized and modernized the financial sector by privatizing banks and deregulating the mutual fund and insurance industry thus allowing for the creation of new financial institutions; and
- Adopted OECD standards with respect to corporate governance and enhanced regulation of the financial system.

These reforms — along with the fact that the Chilean government allows for full ownership of companies across most sectors, permits the repatriation of earnings, and offers foreign investors favourable tax treatment — were instrumental in attracting 8.9% of the FDI directed to Latin America between 1991-1998, of which the mining sector accounted for approximately 58%.

One example of Chilean reform and policy continuity related to FDI is the Decree Law 600 of 1974 that binds the Chilean government to ensure a transparent, non-discriminatory, and non-discretionary environment for foreign investors. This legislation is interwoven with the Chilean Constitution and supporting institutions making it difficult to change and offering transparency and stability to foreign investors. As a result of this evolution in Chile, foreign investment continues to flow into the country.

Multiple studies indicating that FDI in Latin America has lead to increased economic growth and capital formation, through the introduction of new technologies including production techniques, managerial skills, and new capital goods and ideas.[6] Additionally, the attraction and growth of FDI is directly correlated with healthy capital markets. Stock market development, as measured by stock market capitalization as a percentage of GDP, has a positive and significant impact on FDI as does domestic value traded. The more developed the banking sector, the more FDI a country will also attract. Naturally, other factors such as openness of the economy to foreign trade, infrastructure, inflation, economic policies, technology, etc., will also have an impact.

From 1978–2003, Chile and Bolivia attracted the most FDI as a percentage of their respective GDP; however, Chile has been able to translate its FDI into the largest GDP growth of all of the Latin American countries while Bolivia has been unable to parlay this investment into strong economic performance. Strong financial markets facilitate the efficient distribution of capital and provide entrepreneurs and companies risk and growth capital. Chile has the most developed capital markets as measured by market capitalization as a percentage of its GDP. The country also has one of the strongest banking systems in Latin America as measured by the bank's liabilities, assets and private credit as a percentage of GDP.

The 2009 Financial Development Report written by the World Economic Forum ranked 55 countries according to their level of financial development. The report defines financial development as, "the factors, policies, and institutions that lead to effective financial intermediation and markets, as well as deep and broad access to capital and financial services." The top 10 countries with respect to the degree of financial market development, in order of ranking, are as follows: the United Kingdom, Australia, the United States, Singapore, Hong Kong SAR, Canada, Switzerland, the Netherlands, Japan and Denmark. Chile ranks 31st and the Russian Federation 40th.

Chile ranks fourth with respect to its financial stability, specifically its banking system stability. It ranks 25th with respect to its business environment, showing high rankings with respect to its ease of hiring foreign labour and taxes; however, it ranks 39th in terms of non-banking financial services and 47th with respect to financial markets. Within the non-banking financial sector, it is disadvantaged by its lack of initial public offerings (IPOs), mergers and acquisitions (M&A) and insurance products. Within the financial markets pillar, Chile exhibits weakness in its foreign exchange (FX), derivatives and bond markets. While its stock market capitalization to GDP ranks 18th, both its stock market turnover and value traded to GDP rank relatively low, 46th and 38th respectively.

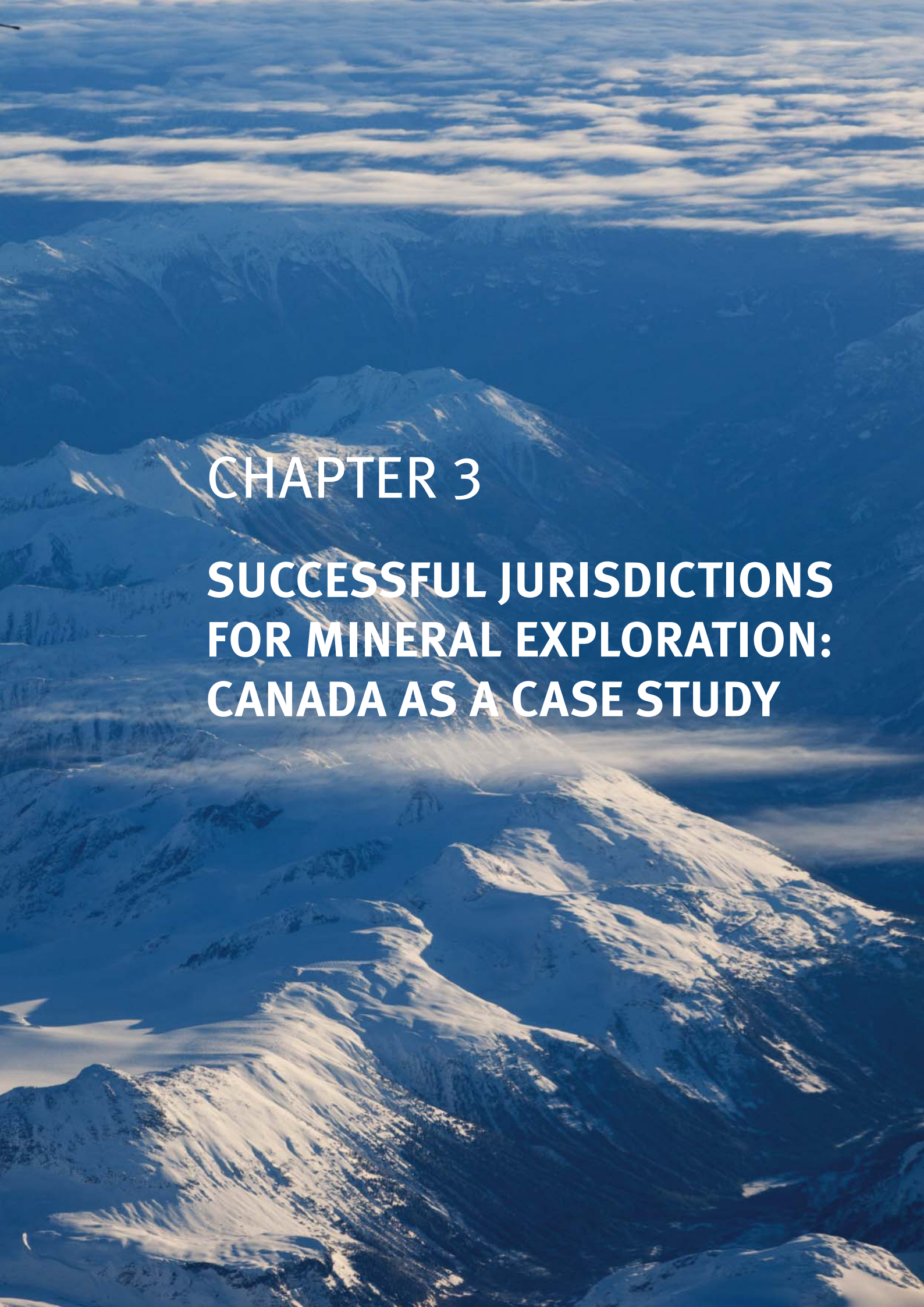
In contrast, the Russian Federation ranks fourth with respect to its non-banking financial services. Within this category, the Russian Federation shows strength

[6] Omar M. Al Nasser and Xavier Garza Gomez, "Do Well-Functioning Financial Systems Affect the FDI Flows to Latin America?", EuroJournals Publishing Inc., 2009.

across all categories, IPO and M&A activity, insurance and securitization. However, the Russian Federation ranks last at 55th within the pillar of banking financial services, lagging behind the leaders on size (when measured by banking assets, liabilities and private credit as a percentage of GDP) and efficiency, which is measured by profitability, overhead and operating costs and public ownership.

***

In summary, the mineral exploration and mining capital markets is a subsector of the broader market and is concerned with raising money for exploration programs and mining projects. Canada has relatively small overall capital markets as compared to the United States and others but dominates in the mining markets in which it has become very efficient at seeding junior mining companies on the TSXV and eventually graduating them to the TSX. Its dominance can be measured in the number of listed mining companies and in the number of mining finances completed. The ability for "venture capitalist" mining explorers to tap equity capital markets to fund exploration is of crucial importance given the high-risk high-return nature of mineral exploration. Canada's sophisticated mining capital markets operate hand in hand with a strong support network of technical, legal and financial professionals as well as industry and professional associations. The Canadian capital markets authorities have put in place very strict listing and reporting regulations around mining companies offering fairness and transparency to mining investors. Building strength in the mining capital markets on the basis of a sound financial and banking system has been self-reinforcing as Canada has been able to attract and deploy both FDI and domestic investment to continue to grow this sector and its competitive advantage within it. For other resource-rich countries such as Russia, the opportunity to attract FDI and develop strong domestic mining capital markets hinges on improvement of transparency and regulation of the broader financial sector. Stability in these areas in conjunction with the underlying mineral endowment should result in major increases in investment in the exploration and mining sector.



# CHAPTER 3

# SUCCESSFUL JURISDICTIONS FOR MINERAL EXPLORATION: CANADA AS A CASE STUDY

# 3.1 | EXPLORATION AND MINING IN CANADA

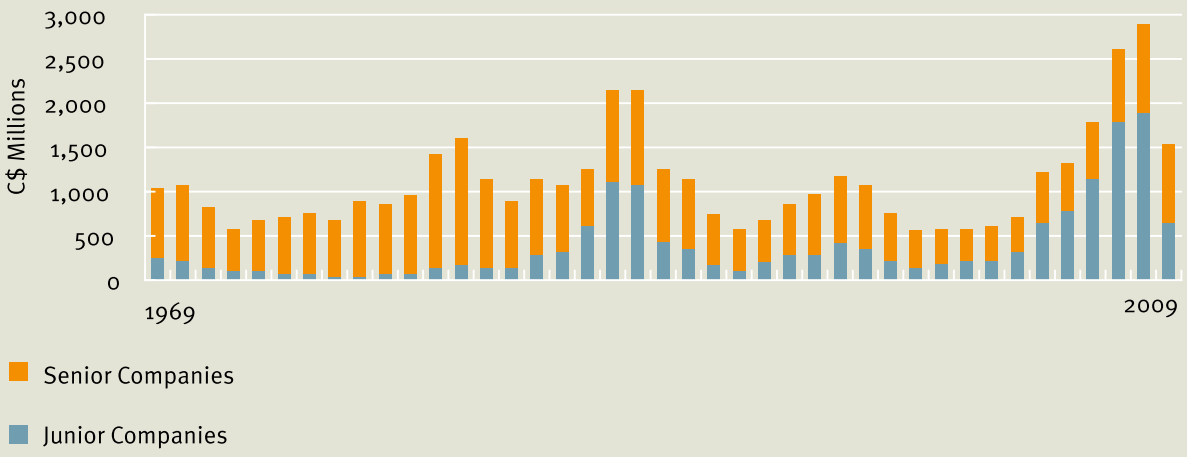
The Canadian mining industry is well-developed, with domestic exploration and mining companies focusing solely on Canada, domestic exploration and mining companies that have global mandates working in more than 100 other countries, and foreign companies that explore and mine the resource base in Canada. There are also domestic and foreign-owned enterprises comprising forward and backward linkage services such as equipment suppliers, mining services, and the financial service companies that enable the broader industry to function.

The Canadian economy benefits significantly from the development of its domestic mineral industry from both the perspective of foreign investment into Canada and from domestic investment in mining. Such benefits include employment, general economic development, and contributions to State revenues. The realization of such benefits is obtained through clear and fair "policies for sustainable development" in the areas of taxation policy, environmental policy, and social-community policy.

## GROWTH AND SIZE OF EXPLORATION, DEVELOPMENT, AND MINING IN CANADA

In 2010, the value of production of metallic and non-metallic minerals and coal (excluding oil and gas and the oil sands) was $41 billion (preliminary figure), up from $30 billion in 2009. Minerals and mining are important throughout Canada and provide the basis of economic activity in almost every region including remote areas. Mining and mineral processing accounted for 2.7% of GDP. Mineral exports represent approximately 20% of total Canadian exports. Some 60 minerals and metals are produced in 200 mining establishments and 50 smelters, refineries and steel mills. More than 300,000 people are employed in mining and downstream processing.

**Figure 3-1. Exploration and Deposit Appraisal Expenditure in Canada 1996 - 2009 (Constant 2008 C$ Millions)**




Notes: Includes field and overhead expenses only.

Source: Natural Resources Canada

Exploration in Canada is carried out by large integrated mining companies (senior companies) and by junior exploration companies (juniors), of which there are more than 1,000 active companies. Exploration and deposit appraisal spending in Canada has always been cyclical (Figure 3-1). The main determinant of the level of exploration spending in a given year is the price of mineral commodities in the previous year. This correlation exists because mineral prices influence the amount of financing available by investors and the level of exploration spending companies are willing to provide for the next year's exploration season. The 47% drop in exploration expenditure from 2008 to 2009 was primarily a function of the reduction in capital available following the 2008 worldwide financial crisis. The junior exploration sector was particularly hard hit by the market weakness in 2009, especially when compared to exploration levels in Canada after 2005 when junior companies contributed to more than 60% of Canadian exploration. The strengthening of the commodity markets in late 2009 and 2010 led to a significant (35%) year-over-year increase in exploration expenditures in Canada in 2010. Canada remained the country leader in exploration expenditures with its share of the total at 21% in 2008, 16% in 2009 and 18% in 2010.

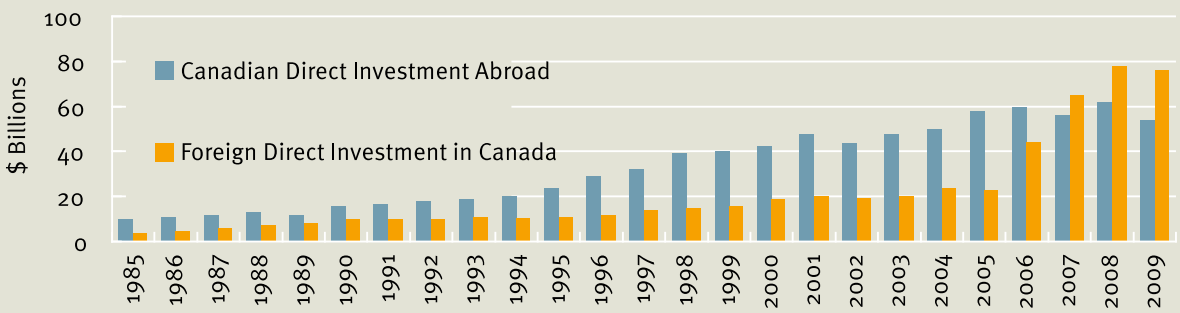
## 3.2 | FOREIGN DIRECT INVESTMENT (FDI) INTO CANADA AND CANADIAN DIRECT INVESTMENT ABROAD (CDIA)

Canada is a leading destination for mining investment and is a capital markets leader, raising mining finance for spending by companies around the world.

The Canadian investment and regulatory environment is supportive of FDI, including in the mining sector. Under the Investment Canada Act, any foreigner can set up a new business, including a mining business, with simple notification. Acquisition of existing Canadian businesses, including mining, are conditioned only that the investment provide a net benefit to Canada as described in Section 20 of the Investment Canada Act. Major recent acquisitions of Canadian mining companies include Alcan, Inco and Falconbridge. This supportive regulatory system has resulted in a net inflow of FDI in recent years (Figure 3-2).

Once a foreign investment is made in Canada, domestic and foreign investors receive equal treatment under the law. Foreign and Canadian companies have the same access to information and statistics on minerals and are subject to the same taxation regime and other legal requirements.

**Figure 3-2.Cumulative Direct Investment, Metallic Minerals and Metal Products ($ Billions)**



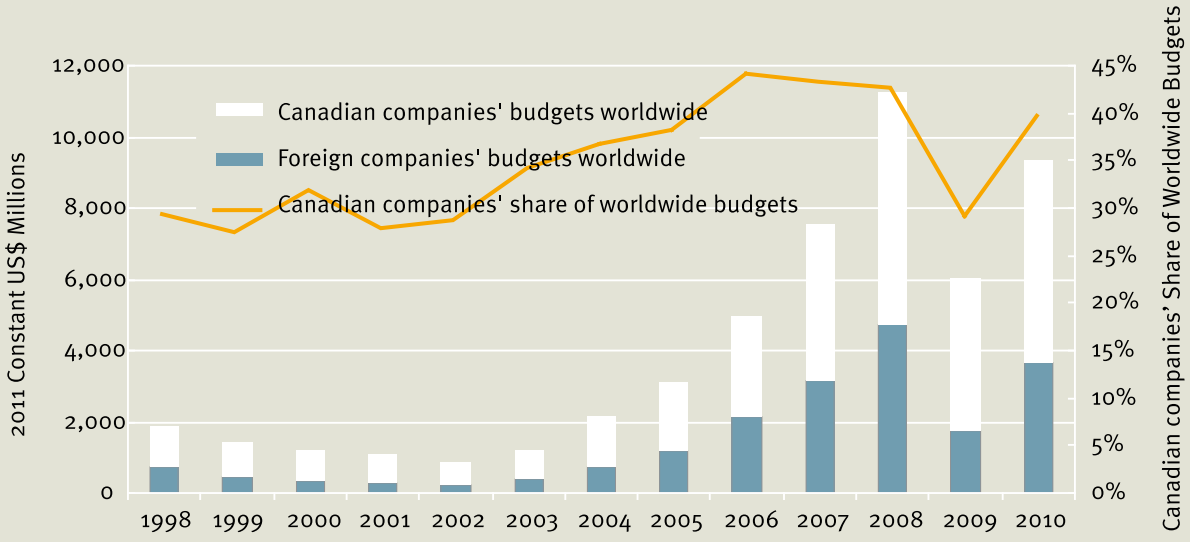

Source: Natural Resources Canada, based on data collected by Statistics Canada

## 3.2.1 | CANADIAN FOREIGN INVESTMENT IN EXPLORATION AND MINING PROPERTIES

Not only is Canada the leading destination for exploration expenditure, companies domiciled in Canada also account for a significant portion of global exploration activity. Canadian companies have accounted for between 30% and 45% of total exploration expenditures worldwide for more than a decade (Figure 3-3).

The result of this expenditure is that Canadian companies control a significant number of exploration and mining projects worldwide. Canadian companies represent more than $110 billion in valuation of exploration and mining assets across nearly 5,000 individual properties and projects (Table 3-1).

**Figure 3-3. Exploration Worldwide by Canadian Companies and Non-Canadian (foreign) Companies (2010 constant US$ millions)**




Natural Resources Canada, Mineral Economics Group

## Table 3-1. Distribution of Canadian Exploration and Mining Assets Abroad

| Country | $ Billions | Number of Properties |
|---|---|---|
| United States | 17 | 1,228 |
| Mexico, Latin America, & Caribbean | 57 | 1,789 |
| Europe | 6 | 310 |
| Africa | 21 | 769 |
| Russia/Asia | 5 | 314 |
| China | 1 | 125 |
| Australia | 4 | 359 |

Notes: Exploration and mining assets include properties, plant and equipment and deferred exploration expenditures, based on 2008 audited reports.

Source: Natural Resources Canada: Mining Assets-NRCan; Properties-InfoMine; Compiled by TSX January 2008

### 3.2.2 | INDUSTRIAL CLUSTERS, VALUE ADDED, FORWARD AND BACKWARD LINKAGES

Mining and its ancillary industries comprise one of the best examples of a value-added cluster in Canada. Not only is the industry vertically integrated with respect to having operations from the earliest stages of prospecting right up to the production of products and recycling, but there are side-ways linkages as well. Within Canada, mining expertise has been developed across many supporting industries and sectors such as the suppliers of mining and exploration equipment, legal, tax advisory, accounting, financing services, capital markets, stock exchanges, securities regulators, and professional schools, universities and associations.

Mining companies themselves vary with respect to their focus and scope. In Canada, there are large miners (some with foreign holdings), mid-level producers, and single mine and exploration companies. Canada's junior exploration/mining companies represent a very efficient and specialized industry that acquires equity financing for exploration in Canada and abroad. Some of these Canadian junior mining companies are financed in international finance centres such as London and Europe for mineral projects outside Canada. However, much of the financing is completed on the Canadian stock exchanges that dominate within this industry specialization.

Canada's comprehensive mining structure proves that free entry on the part of Canadian and foreign investors can provide expertise and skills, resulting in both cost effectiveness and efficiencies.

The Canadian industry does not consist solely of large firms with expertise in every facet of mining, from finance and research to exploration and production. A junior exploration company often has no cash flow from operations because it has no mines; its assets are the title it has obtained and has securely registered, and the finance for its exploration program comes from investors in the equity shares of the company. The work program of a junior exploration company over a few years might involve exploration on one or more properties, with budgets in the hundreds of thousands of dollars to a million dollars and more. The Canadian junior that is successful in its exploration and has succeeded in adding value to its mineral asset is likely at some stage to sell its interest to the highest bidder and is not constrained by a potential requirement to revert the title back to government or be forced to try to proceed to development and production. Neither of these options is efficient: reverting title back to the government would eliminate any upside potential and thus interest in exploration in the first place, and development and production of the mineral asset may be better suited to a company already having this in-house expertise.

Canada's efficient and effective industry structure has built up over time. It has reached this level of sophistication because the industry participants have a high degree of confidence that the proper institutional and legal measures are in place to ensure transparency and to allow for fair returns. In essence, this means that ownership of mineral assets can be protected, that ownership confers the right to sell all or part of the asset, and that reputable dispute settlement mechanisms are in place to which anyone can appeal. The private sector can therefore invest and work inside a functioning governance framework with a high level of confidence.

## 3.3 | THE POLICY APPROACH TAKEN BY CANADA

The large integrated set of institutions, laws and regulations that make up the Canadian investment climate is considered stable, but it is not static. Incremental changes are made continually, with government bringing in improvements to the investment climate when changes are needed.

### 3.3.1 | POLICIES GENERAL TO THE ECONOMY

Canada's general economic policies allow the economy to operate according to WTO criteria of openness and free flow of investment, in and out of the country. The engine of growth is private sector initiative and finance, inside a framework of stable legal structures and court protection

of title and asset ownership. Government sets the rules and regulations under which the private sector operates rather than government being the stimulus to growth. At the heart of this approach is enabling financial and human resources of the economy to fulfil their potential.

In this framework, the system of taxation becomes the mechanism by which the state receives its fair share from state ownership of the mineral resource in the ground. The government's system of taxation needs to balance economic development and revenue generation through taxation. This balance includes limiting the tax burden on private sector companies responsible for exploration, mining and sales of finished product and providing revenues to the state to fund its responsibilities and commitments.

In summary, the basic approach in Canada is to allow private sector initiative inside a proper government framework of sustainable development laws and regulations to provide the momentum for growth. These measures include tax policy to compensate the State, regulation around environmental protection and social policy to protect employees in the work environment, and infrastructure and regional development policy, which are critical especially in remote regions.

## CANADIAN CONSTITUTION AND DIVISION OF POWERS

The relationship between the central government and regional levels of government is defined by the Constitution. The Canadian Constitution sets out how Canada links the taxation powers of different levels of government with the responsibilities for their respective expenditure programs. Of special relevance is the treatment of the mineral resource base in Canada, which falls under provincial jurisdiction. Even with clearly defined division of powers, overlap and conflict do arise. These commonly occur with issues related to water use and environmental policies relating to mine development and production plans.

## 3.3.2 | POLICIES SPECIFIC TO MINING

At the federal, provincial and municipal levels, there are laws and regulations specific to the mining industry, including mines and minerals acts, exploration regulations, surface lease regulations, boundaries of mineral lands regulations, and work requirements regulations. These rules and regulations apply equally to foreign investors and to domestic investors.

In all jurisdictions, certain lands are clearly withdrawn from mineral activity. These include city lands, designated parks and protected areas, and railway lands. Other lands are available for mineral activities including exploration and ultimately mine development and production. Whereas the exact process differs slightly across the various provincial and territorial districts of Canada, the following general procedure is applicable anywhere in the country.

### Preliminary Licenses, Prospecting and Claim Staking

A person may apply for and obtain a prospector's license, which permits the individual to stake a claim. It does not convey any ownership interest in land or minerals. Individuals or corporations can apply for exploration licenses to acquire the mineral interests for specific areas. Limitations are applied for the size of exploration areas that can be held by any one company or person. These rights are obtained through ground staking, which involves physically visiting the property, or by map-staking, which can be accomplished from a government office or over the internet. This process of staking claims is known as the free-entry system whereby all available land is available to be staked by any Canadian or foreign enterprise. This process is on a "first come – first served" basis; any staked land is not available to any other party until such time as the claim is forfeited. Similarly, lands which have already been lawfully occupied for mining purposes are withdrawn from staking or disposition by another party.

This free-entry system contrasts with the "concession system" of acquiring exploration rights, which is in place in some parts of the world for minerals and is used in Canada for the petroleum industry. Under that system, auctions are held to obtain exploration rights from governments.

Companies that are granted exploration licenses have a set of obligations and rights that include the following:

### Obligations

- Pay a nominal fee for the granting of the mineral interests;

- Perform minimum work commitments each year in terms of exploration expenditure. A certain amount of work has to be performed every year to keep a mineral claim or similar interest in good standing. The notion is that the initial annual expenditure requirements are not high, as governments want to promote investment.
- Pay an annual fee to maintain claims in good standing. The annual work requirement accelerates in subsequent years. This policy is in place to discourage the speculative accumulation of mineral rights. The acceleration has the purpose of giving a subsequent party a chance to carry development further.
- Apply for and obtain required permits related to disturbance of the land due to exploration activities.
- If all of these obligations are not met, the government can enforce the cancellation of the mineral interests. This happens in cases of failure to comply with legislation or failure to perform work requirements. The holder of an interest has the right to a hearing and the right to appeal.

### Rights

- Exclusivity for exploration and mine development activities as well as the exclusive right to apply for a mining lease. Mineral claims may be valid for an initial term of one or two years, with annual extensions, up to some limit before going to a development license and eventually to lease.
- Transferability of licenses through sale or joint-venture arrangements with other companies. The holder of a mineral interest may generally transfer the interest to another party with few restrictions, whether by assignment of all or part of the interest, or by mortgage, charge, option, or otherwise. The right to transfer is extremely important in that it enables financing to occur because investors have the assurance of their name on title.
- Access to the property for the purposes of mineral exploration activities. Regulations specify how a mineral operator may acquire a right to enter lands for exploration, development, or production purposes, and the way compensation must be paid and security posted to acquire that right.
- Performance of the usual range of exploration activities including mapping, surveys, sampling, trenching, and drilling subject to receiving requisite permits.

Overall, the policies put in place by all levels of government in Canada are aimed at promoting exploration activities through the process of acquiring larger tracts of land originally and paring down the holdings over time to focus on the most prospective areas. These policies inherently recognize the high-risk nature of exploration as reflected in the low probability of any given mineral property or claim hosting an economic mineral deposit. The economic burden of fees, licenses and taxes on companies is increased as the projects become less risky through advancement toward development and production.

### Mining Leases and Production

Companies holding the mineral rights to a property have the exclusive right to apply for a mining lease. While the government can reject an application for a mining lease on various grounds, it cannot put the property up for auction or tender so long as the applying company has maintained their mineral interests in good standing. Generally speaking, the granting of a mining lease will require the completion of a feasibility study outlining the technical, financial and environmental plans for mine development, production and reclamation. Companies are required to post bonds or letters of guarantee from financial institutions to cover expected mine site reclamation costs. Once a mining lease is granted, the company has the exclusive right to produce minerals from that lease. Expansions or major alterations to the proposed mine plan will also be subject to the approval process but will typically not require any additional licenses.

For the most part, all regulations apply equally to Canadian and foreign companies. The one exception would be the transfer of mining leases through the sale of a company. In the case of a Canadian company being sold to a foreign investor, the transaction may fall under the review of the Foreign Investment Review of the Investment Canada Act, which applies a “net benefit to Canada” test to determine if the sale goes ahead. Most foreign investments in Canadian mining companies in recent years have been accepted under the Investment Canada Act (e.g. Inco, Falconbridge, Alcan), while one notable foreign takeover (BHP and Potash Corp.) was rejected.

# 3.4 | BALANCING ECONOMIC DEVELOPMENT WITH STATE REVENUES RECEIVED AS RESOURCE OWNER

Mining taxation ensures that the government and its people are receiving value for the state ownership of the resource in the ground. Mining taxation requires a continual balancing act. There is an inverse relationship between the level of taxation receipts and their timing on the one hand, and the level of exploration and mining activity on the other hand. If taxes are too high, then private sector activity diminishes. If taxes are too low, the state does not get its fair share. Government entities in Canada expend considerable effort to achieve the proper balance, taking into account the cyclical nature of the mineral industry and the fact that new minerals come on stream with different pricing and marketing issues. Uranium mining provides an example of a commodity that has a unique taxation system under the Saskatchewan Uranium royalty system.

Canada's Department of Natural Resources has measured the tax burden of mining tax regimes around the world in the mid-1990s and mid-2000s. Canada is in the mid-range of global tax burdens, primarily due to generous tax deductions available to mining company despite Canada's nominal high tax rates. Between 25% and 35% of corporate profits are paid in corporate taxes, mining taxes and royalties combined (Effective Tax Rate).

## 3.4.1 | TAXATION REVENUE SHARING BETWEEN FEDERAL AND PROVINCIAL GOVERNMENT

Under the Constitution of Canada, the provinces have ownership of the minerals inside their borders, and the power to levy direct taxation on those minerals. Provinces levy corporate income taxes and mining taxes/royalties. The differing economic circumstances and the unique geological endowments of the various provinces necessitate different personal and corporate income tax rates, and different mining taxes and royalty rates and deductions.

In regards to the offshore and the Canada Lands north of 60 degrees latitude, the federal government acts as a "province." The federal government also collects corporate income tax and allows deductibility of provincial mining taxes and royalties.

The explicit division of mining revenues determined by the Constitution is a source of stability and it allows both federal and provincial governments to better plan their budgets.

## 3.4.2 | TYPES AND LEVELS OF TAXATION

In Canada, income taxes are based on profits. This is important in a cyclical industry such as mining, since no income taxes will be payable unless there are profits during the taxation period.

Provincial governments have also largely converted mining royalties to profit taxes, as they realize the negative consequences of ad valorem royalties in keeping mines operating in periods of low prices. Currently, companies producing base metals and gold are subject to income taxes by the federal government and the relevant provincial government, and to the profit-based royalty (i.e., mining taxes) system of the provincial government.

However, potash, uranium, and diamond production are subject to higher effective mining tax rates. Instruments used include: basic gross royalties on sales revenue, taxes on profits, tiered royalties which increase with product price, and graduated tax rates. These measures capture permanently higher rents than normal for the government. The collective experience shows that exceptionally high tax rates result in lower investment expenditures for new discoveries and the expansion of existing mining operations.

A consequence of resorting to more complicated administration of the tax system is the complexity of

the rules and regulations, the intricacy of the formulae, and the subsequent administrative bureaucracy. For Canada, the integrity and efficiency of the tax collection apparatus works hand in hand with tax policies and specific taxation instruments. This system functions smoothly and yields reasonable revenues to the state, while promoting investment and mineral development. It also allows the mining industry to mine the resource base for the benefit of Canadians and the state as well as for individual companies and their shareholders.

## 3.4.3 | TAX POLICY AS AN INCENTIVE MECHANISM: FLOW-THROUGH SHARES

Over the years, Canada has used a number of tax-based measures to successfully lead to increased exploration from the private sector, Canadian and foreign. These have involved corporate tax systems as well as personal tax systems.

One mechanism is the flow-through share policy. This policy stems from the inequality between junior companies and producing companies with respect to tax deductions and associated tax credits related to exploration expenditure. In Canada, exploration expenditures are treated effectively as operating costs in that they can be 100% deducted in the year incurred (expensed) for tax purposes subject to the availability of sufficient income against which to use the deduction. For junior companies, which have no income against which to use the deductions, there is no tax credit associated with exploration. The introduction of flow-through shares has allowed junior companies to effectively forego any present or future tax deduction associated with exploration by having the deduction pass (or flow-through) to individual investors in the shares of the company. Since 1983, the tax deduction associated with exploration has been transferable to individual investors in special flow-through shares in the company. For example, an individual citizen who purchases $1,000 worth of flow-through shares of a junior exploration company could deduct $1,000 from their tax base in determining their personal income tax payment for the year. For individuals with high marginal tax rates, the impact of the deduction can be significant. If the marginal tax rate is 40%, then the after-tax cost of the $1000 dollar share purchase would be $600 with the remaining $400 being effectively subsidized by the government in the form of a reduction in personal income tax.

To further incentivize investors, federal and provincial governments in Canada often provide a bonus on top of the 100% deduction. For example, the 1983 introduction of flow-through shares included a special bonus deduction of 33 1/3% known as a mineral-earned depletion allowance. Provincial governments in some jurisdictions added a further deduction in some cases matching the federal deduction so that 167% of investment could be deducted against personal taxes. In this case, the $1,000 investment in flow-through shares combined with a 40% tax rate could result in a tax credit of $668 leaving the after tax cost of the investment at just $332. This policy effectively encourages individuals to finance exploration by investing in exploration companies. In Canada, many thousands of private citizens invest in exploration for minerals by means of flow-through shares issued by exploration companies. Foreign investors also find this incentive attractive provided they have taxable Canadian income against which to write off the exploration tax deduction.

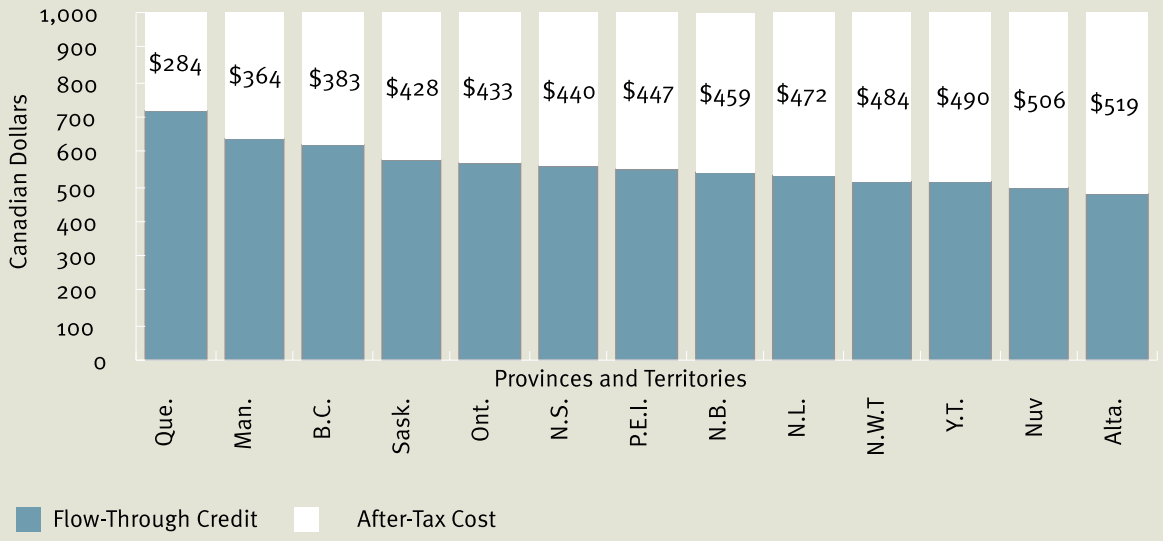
Several changes have been made to the flow-through share tax policy in the past three decades. The most recent version, enacted in 2000, is termed “super” flow-through and it provides a 15% federal bonus deduction as well as variable extra deductions from provincial governments. The after tax cost of $1,000 worth of flow-through shares varies across jurisdictions from a low of $284 in Quebec to a high of $519 in Alberta (Figure 3-4). The reason for the different refunds is that, while the federal government rates of tax are uniform across Canada, provinces choose tax rates that they consider appropriate to the economic conditions in their province.

A key to the success of flow-through shares has been the fact that government essentially shares in the risk of exploration by means of a program that contributes financing along with the investor. This is a program that is driven by domestic investors. The government is not proactive in pushing exploration but allows the private sector to determine where, how, and how much to invest in exploration programs of the investor’s choosing. The government takes

from the investor some of the risk of exploration by providing the investor with a refund through the tax system. From 1996-2010, approximately $5 billion in flow-through shares were purchased in Canada. This amount represents about 25% of the total exploration expenditures recorded during this 15-year timeframe and reflects a considerable contribution by all levels of government in the form of foregone tax revenue.

The offsetting benefits are in the form of increased discoveries and the growth of the exploration and mining sector and the creation of a large investor base. Overall, the flow-through share is one of Canada's most successful policy initiatives in developing the mining industry over the past 30 years.

**Figure 3-4. After-Tax Cost of a $1,000 Investment in Flow-Through Shares Top Marginal Tax Rates (October 2009)**




Source: Keith Brewer personal communication

# CHAPTER 4

# REGULATORY REFORM IN RUSSIA

# 4.1 | RUSSIA'S OPPORTUNITIES TO ATTRACT INVESTMENT

Competition for mining exploration and development investment occurs globally. Mining companies and investors choose the destination for their investment dollars based on many factors, including the laws and regulations of the host country. In this regard, Russia competes with Canada, the United States, Australia, South Africa, China and many other countries for global mining investment resource allocations.

Total investment in the Russian mining sector grew at a compound annual growth rate (CAGR) of 17% from 2004-08, with a decline in 2009 due to the global financial crisis. However, total foreign investment in that timeframe grew only at a CAGR of 1.3%.[7]

Russia could significantly increase its flow of exploration and development investment in mining — and thereby increase taxes and other economic value of its mineral resources — by modifying and updating its current regulatory regime. Doing so would not require a complete overhaul of investment rules or a major shift in philosophy or ideology regarding state ownership of mineral resources.

The right to develop deposits that are discovered via the exploration activities of foreign or domestic companies and the right to maintain a reasonable share of even the largest and best discoveries would significantly increase the levels of investment in exploration activity in Russia. New discoveries of economically viable mineral deposits would ultimately be of significant economic benefit to the state and people of the Russian Federation.

# 4.2 | RUSSIAN LAWS AND REGULATIONS IN THE MINING INDUSTRY

The Law on Subsoil (Subsoil Law) 2395-1, adopted in 1992, together with the Regulations on the Licensing of the Use of Subsoil No. 3314 (Licensing Regulations) provide the underlying regulatory framework for Russia's exploration and mining sector. This framework remained largely unchanged until 2008.

Laws 57 and 58, the Strategic Sector Laws (SSL), were enacted in March 2008 and are designed to work in tandem. Law 57 sets strict restrictions for foreign investment in the mining sector, as well as in other industries deemed strategically important for Russia. Law 58 amends a number of Russian laws, including the Subsoil Law, to bring them into compliance with the intent of Law 57.

## 4.2.1 | LAW 57

Under Law 57, transactions that result in a foreign investor or group of persons controlling a company that has strategic significance are subject to prior approval by the Government

[7] "The Russian Mining Sector — Market Opportunity and Entry Strategies, Analyses and Forecasts to 2015", Research and Markets, March 25, 2010

Commission on Foreign Investments chaired by the Prime Minister. Approval may also be conditional upon the foreign investor meeting certain additional obligations, such as agreeing to the downstream processing of minerals in the Russian Federation. The Commission's failure to approve a transaction or establishment of control may be contested in the Supreme Arbitration Court of the Russian Federation.

Law 57 basically limits foreign control to less than 10% over any strategic company engaged in subsoil use of federally significant properties. Any control greater than 10% requires prior approval. The 10% control is defined as:

- The right to directly or indirectly dispose of 10% or more of the aggregate number of votes attributed to the voting shares in a company's charter capital; and/or
- The right to appoint a sole person executive body of the strategic company; and/or 10% or more of the members of the executive body; and/or
- An unconditional opportunity to elect 10% or more of the members of the Board of Directors or other management body.

Other restricted transactions, including sales and purchases, donation, barter, trust management and similar agreements, include:

- Transactions where the foreign investor or its group of persons acquires shares in a company, provided that the foreign investor or its group of persons already has a right to directly or indirectly dispose of 10% or more of the aggregate number of votes attributed to the voting shares of the company;
- Transactions or contracts where the foreign investor or its group of persons assumes the obligation to function as a manager (management company) of the strategic company;
- Transactions where the foreign investor or its group of persons acquires the right to determine the decisions of the management bodies, including the right to establish the terms of the company's commercial activities; and
- Transactions in relation to third parties that have control, either directly or indirectly, of a specific strategic company, which then allows the foreign investor or its group of persons to assume control over the company.

When the Russian government owns more than 50% of a strategic company, the approval requirements do not apply to foreign acquisitions of 10% or greater. However, the law is unclear on the conditions under which a foreign company can acquire more than 50% ownership in such a company.

One unintended consequence of Law 57 is that based on the concept of a "group of persons," the majority of Russian companies can be classified as "foreign investors" subject to the same restrictions as true foreign investors. It would be a logical step to remove the possibility of Strategic Sector Laws being applied to companies whose shareholders are Russian and whose main activity and domicile are in Russia.

### 4.2.2 | LAW 58

Law 58 classifies subsoil plots as being federally significant (i.e. strategic properties) if they:

- Contain deposits and manifestations, irrespective of the amount of reserves of: uranium, diamonds (especially pure raw quartz), rare earths of the yttric group, nickel, cobalt, tantalum, niobium, beryllium, lithium and the platinum group of metals;
- Contain no less than 70 million tons of recoverable oil reserves, no less than 50 billion cubic metres of gas reserves, no less than 50 tons of hard-rock gold reserves and no less than 500,000 tons of copper reserves;
- Situated within internal sea waters, the territorial sea and the continental shelf of the Russian Federation; or
- Operations that involve the use of land allocated for defence and security purposes.

The list of subsoil plots of federal significance is recorded in an official publication of the Ministry of Natural Resources.

# 4.3 | REGULATORY REFORM TO EXPAND INVESTMENT IN RUSSIA'S MINING INDUSTRY

There are a number of measures that the Russian government can undertake to encourage greater investment in its vast known and unknown mineral deposits. The government is already actively pursuing some of these initiatives, while others are just beginning to be developed.

## 4.3.1 | ENCOURAGE FOREIGN INVESTMENT THAT BENEFITS THE STATE

Most countries have laws to review foreign investment in key industries to ensure that the investment will bring benefits to the country and its people. For example, Canada, which has a liberal investment regulatory environment for FDI, can still review foreign acquisitions of a Canadian business, including mining, to ensure that they provide a net benefit to the country.

Foreign investment in Russia's mining sector would bring much needed capital into the country, particularly in the exploration process, as well as management skills and new mining technology. The current SSL, however, generally serve as a hindrance to foreign investment:

- The 10% threshold for requiring government approval seems too low and is not associated with sufficient corporate control. For example, in Joint Stock Companies, a meaningful level of control starts at 25% plus one share. By contrast, acquisitions in companies engaged in strategic activities other than subsoil use (about 40 different types) are subject to a 50% threshold. Raising the threshold for foreign ownership from 10% to 25% would still limit foreign control, while encouraging greater foreign investment.
- We believe that the notion of control could also be better defined. For example, it is not clear if a foreign buyer in a strategic company is required to seek approval if it has a veto right through unanimous vote at the board level or shareholders' meeting. It would also be recommendable if it were clearly stated in Law 57 that negative control through the governing bodies of a strategic company does not require the government's consent.
- Another important area is the streamlining of the process for considering applications for foreign investment in strategic industries. Law 57 states that government review of these applications shall not exceed three months as of the date of registration. Only in exceptional cases can the review be prolonged. In practice, however, the process takes much longer; in some documented cases, more than one year. This delay costs investors significant time and money on procedures that appear to be primarily formalities, since only a few applications thus far have been declined due to national security concerns.

## 4.3.2 | FURTHER DEFINITION OF STRATEGICALLY-IMPORTANT MINERAL DEPOSITS

We believe it would be rational to revisit the definition of strategic commodities so that it would be applied only to those deemed to be of truly strategic importance to the state. For example, it is not entirely clear why silver, particularly, remains off the list, given its current unprecedented price levels, while other commodities, like platinum or copper, remain on it. Rationalizing the definition of strategic commodities could help spur investment in exploration and mining activities.

Additionally, in our view, size limits imposed on strategic properties could also be revisited so that they truly define strategic importance to the state, while still encouraging exploration investment. For example, according to Russian regulation, gold reserves of 50 tonnes are considered mid-size deposits. Foreign ownership of such deposits would have no impact on state security and defence. The government is currently already considering increasing this threshold from 50 to 250 tonnes of contained gold.

Furthermore, areas no longer deemed to be strategic could be updated on the list maintained by the federal government. However, the Subsoil Law (Article 2.1) provides that federal plots maintain their federal status, irrespective of any changes to the requirements that identify subsoil plots as strategic. As such, if the government does amend the Subsoil Laws to increase gold threshold to 250 tonnes, it would be logical to remove properties below 250 tonnes previously classified as strategic because they were larger than 50 tonnes from the federal list.

Additionally, subsoil users are prohibited from transferring their licenses for plots of federal significance to a company incorporated in Russia in which a foreign investor (or group of persons) has more than 10% controlling interest. Such a transfer can only be carried out in exceptional cases based exclusively on a decision by the government. This restriction poses a burden for exploration projects. It is unlikely, therefore, that it should be applied to properties where no commercial discovery has been made. The only exception could be properties situated on military owned or controlled lands.

## 4.3.3 | PROPERTY RIGHTS PROTECTION TO ENCOURAGE EXPLORATION INVESTMENT

To serve as an attractive location for exploration investment, Russia needs to ensure that companies that invest in high-risk exploration activity have the right to capture returns from mine development and production, particularly given the fact that the chances of discovering an economically viable mine are small. In Russia, a number of laws and regulations serve as disincentives, in our opinion, for exploration investment in Russia, including:

- The fact that exploration licenses are not exclusive. Two subsoil users may be given the right to explore the same field. In practice, exploration licenses for a single field are rarely given to more than one subsoil user. However, the mere existence of such an almost inapplicable concept creates further confusion and as such, it could be excluded from the law.
- While exploration rights can be converted to production rights, there are many legal and practical hurdles to overcome. For example, the applicant must prove that it has qualified specialists and sufficient technical and financial abilities to develop the project. The subsoil user must also obtain a certificate of discovery.[8] In practice, most production rights are granted through an auction or tender process with the approval of the subsoil authorities.
- For onshore and non-strategic fields, the Federal Agency for Mineral Resources (Rosnedra) can grant exploration licenses without an auction or tender (Article 10.1) based on the application of an interested party. However, if there are two or more applications, the property must be subject to auction. In the majority of such cases, more than one application is received, depriving the investor of the opportunity to start exploration without bearing significant expenditures to acquire the same field at an auction or tender. Additionally, prior to tendering applications for exploration licenses, a list of eligible fields must be published. External parties, including the potential applicant for an exploration license, can request that a field be put on the list. However, the terms for creating such lists are legally undefined and, in practice, their development may take several years, if issued at all.
- In areas judged to be strategically significant to the atate, the rights to carry out final exploration (*razvedka*) and mining will be granted only by a decision of the government and only upon completion of exploration works. In other words, owners of strategic properties would be required to completely explore their license areas before mining rights are issued for any part of the license area, even though license areas may be in the order of hundreds of square kilometres.
- Exploration licenses, including for deposits not deemed strategic, can be terminated at any time after a commercial discovery has been made and the expert review of reserves has been approved by the state.

Additionally, according to the Subsoil Law, the government can refuse to grant the final exploration and production licenses for a discovery found by a foreign investor or a company with the participation of foreign investors, including under a combined exploration and production license, if it presents a threat to state security and defence. In such circumstances, the subsoil user can receive

[8] See the Order of the Ministry of Natural Resources of the RF dated January 24, 2005 establishing the procedure for examination of applications for obtaining subsoil use rights upon the discovery of a mineral deposit.

compensation for expenses incurred during the exploration process as well as a one-time payment if a combined license was issued.

- While regional authorities are responsible for issuing mining licenses for commonly occurring minerals (COM), they cannot issue exploration licenses. Because of this omission in the law, COM exploration licenses are very rarely issued by federal authorities and those issued by regional authorities are considered not legally valid.

Collectively, these regulations create a high level of uncertainty for exploration companies who do not know if they will ever be able to recoup their exploration investments by receiving the production license for their discoveries. Without these assurances, companies and investors are commonly not prepared to take on the risk associated with exploration.

To attract exploration investments, in our opinion, it would be logical for Russia to set in place clear rights and assurances for exploration companies that include the following points:

- Only one exploration license is provided per subsoil plot.
- Exploration companies are given the right to convert exploration licenses into production licenses once a discovery is made. Additionally, the process of conversion is simplified and made automatic, provided that the subsoil user committed no violation of the material terms of its exploration license and other applicable laws.
- Like in many other jurisdictions, production licenses are granted for specific mineral deposits within a broader exploration license. This gives the company both the right to continue exploration on the non-mining portion of the property and the obligation to meet expenditure requirements to maintain the exploration license in good standing while immediately beginning the mining process.
- The state is not able to terminate exploration licenses as a result of discovery, without other justifiable reasons, such as material violations of licensing provisions and other applicable laws.
- In cases where control by a foreign party is deemed a threat to state security, the investor is given one year to decrease their interest below the relevant ownership threshold. By definition, this would entail selling a portion of the company's ownership to a third-party Russian investor. It would allow the foreign investor to maintain an interest (albeit smaller) in the project and avoid the disruption associated with the confiscation process. As a further protection, the state is encouraged to buy out such interest at market value if the requisite third-party sale could not be completed within one year. Alternatively, such interest may be transferred in trust to a state-owned entity until such interest has been sold to a Russian investor.
- Any compensation for confiscated property is based on, or should at least take into account, the market value of the rights being expropriated by the state. This would be in line with Russian constitutional principles, as well as a number of international treaties to which Russia is a signatory stipulating that property expropriated by the state be offset by rapid, fair and adequate payment based on market or real asset value. These international treaties are part of Russian legislation and take precedence over federal laws. Thus, the concept of compensation for the confiscation of plots of federal significance is contradictory to both Russia's constitutional principles and international treaties for the protection of capital investments. As such, corresponding corrections should be introduced.
- Certain provisions of Subsoil Law related to plots of federal significance are effectively retroactive. It would be fair if licenses granted prior to the enactment of Law 58 were not subject to the restrictions imposed by the law.

## 4.3.4 | NARROWING OF LICENSE REVOCATION PROVISIONS

Under the Subsoil Law and other Russian legislation, the Russian subsoil authorities can revoke exploration and production licenses, even if properly issued, for a wide range of reasons, including:

- The re-issuance of a subsoil use license in breach of the requirements of Article 17-1 of the Subsoil Law;
- The occurrence of a certain condition (if it is set by the licenses), which causes the termination of the subsoil use rights;

- The appearance of an immediate danger to the health of the people employed or who reside in the areas affected by operations related to subsoil use;
- The occurrence of emergency situations (natural disasters, war and others);
- Violation of material terms by the subsoil user;
- Systematic violations of the established rules for subsoil use by the license holder;
- Failure by the license holder to begin planned subsoil operations within the period provided for by the license; or
- Failure of the subsoil user to submit reports required by subsoil legislation.

Because the conditions for termination are so broad, they can also be arbitrarily applied. A narrowing and better definition of the license revocation provisions would provide greater assurances and safeguards to investors.

## 4.3.5 | ENCOURAGE EXPANSION OF MINING DEVELOPMENT

Russia could also consider allowing companies with mining development licenses to mine other minerals found in the licensed area or in land adjacent to the licensed area by simply amending their license. Right now, both of these practices are not allowed under current law and lead to inefficiency in the mining process.

Currently, under the Subsoil Law:

- If a mineral not expressly mentioned in the license is geologically linked to the mineral that is described in the license, then this mineral can be extracted by the subsoil user.
- However, if a subsoil user discovers an independent deposit with commercial reserves of new mineral, which is not described in the license, the mineral cannot be mined. The respective area must be surrendered to the state and put up for an auction or tender. If the subsoil user mines the mineral, it could jeopardize the standing of its license altogether and/or its title to the extracted minerals.

Given the likelihood that different deposit types and mineralization systems will be found in the same geological terrains, it would be logical if a subsoil user who discovered a new mineral within its license area were granted the right (but not the obligation) to extract the mineral by amending its existing license. This would greatly enhance the attractiveness of exploration and improve mining development efficiency.

Until recently, the Subsoil Law (Paragraph 4 Article 6.2) in essence did not permit the expansion of extraction and combined license borders if the discovered deposit was located outside the subsoil plot. Such a possibility was only stipulated in legislation in the case of geological licenses. Amendments were introduced to the Subsoil Law in July 2011 allowing for the borders of any subsoil plot to be altered. However, this norm can only be applied in practice once a government act establishing how changes are made to subsoil plot borders is passed. Such an act, in our view, could set out clear and simple rules for expanding borders defined in licenses to include adjacent territory on the condition that reasonable technical and financial requirements are met and that no other parties hold subsoil use licenses for the land in question.

## 4.3.6 | DEFINITION OF INVESTMENT OPERATORSHIP AGREEMENTS IN RUSSIAN LAW

The word “operator” is used only once in Russian laws regulating subsoil use,[9] (Article 21.1 of the Subsoil Law). It allows state bodies to grant a short-term right (up to one year) to a legal operator to use the subsoil, upon early termination of a subsoil license. While the “operatorship” concept is familiar in international laws, it is not in Russian laws.

Russia’s Licensing Regulations use the word “coordinator.” However, under Russian law, both the coordinator and the license holder own subsoil licenses. Licensing Regulations (Article 16) provides that a license holder has the right to award contractual terms for the execution of certain types of works (*otdelnykh vidov rabot*) connected with subsoil use to those who take responsibility for complying with the standards (norms and rules) for the protection of the subsoil and the environment.

Under these effectively conflicting provisions, the operator is not permitted to fulfil the core rights and obligations of subsoil user and, if it did, it may be interpreted as assigning the rights of subsoil user

[9] As our specific focus is the Russian license regime for use of subsoil, the provisions of the Russian Law on PSAs are outside the scope of our analysis.

in violation of Licensing Regulations (Article 17.1). This could lead to a declaration of the operatorship agreement as a sham transaction and could even jeopardize the standing of the subsoil license.

It would be expedient to make changes to the Subsoil Law to make the rights of the operator sufficiently flexible based on Russian civil legislation.

## 4.3.7 | CLARIFICATION ON PROJECT INFRASTRUCTURE TURNOVER AND TRANSFER

Russian law does not sufficiently regulate how project infrastructure is transferred or dispersed when the owner of a license loses its license. Conflicts are inherent between the former subsoil user, who holds the title to all project infrastructure, and the new subsoil user, who has the right to use the subsoil. This is particularly problematic for infrastructure that is inseparably connected with the subsoil such as wells, quarries, and underground mines. The Russian government has previously attempted to include fair sales or lease provisions for infrastructure into the Subsoil Law, without success. This issue should likely be revisited.

Russian law (Article 17.1) also states that, in case of a re-issuance of license, all assets necessary to conduct the operation must be transferred to the new owner of the subsoil license (this applies to both strategic and non-strategic fields). While this regulation is logical for advanced projects with associated infrastructure and mining/processing facilities, it seems there is no basis to apply this restriction to early stage exploration projects where there is no such infrastructure and equipment.

## 4.3.8 | CLARIFICATION OF LAND USE ISSUES

In our view, there is a need to clarify laws and regulations granting license holders access to land for purposes of subsoil use. Currently, there is no legal act that provides for any consistent procedure for guaranteeing a subsoil user access to the relevant land.

Previously, the Subsoil Law provided that the granting of a subsoil license was conditioned on consent by the owner or disposer of the relevant land to use it for geological studies and other subsoil uses. This provision was deleted in 2008 and, as a result, a legal vacuum has been created that significantly impacts the risk structure of subsoil use in Russia.

It would be logical if license holders were granted the right to access land, with the recognition that mineral exploration is transient in nature, and can successfully co-exist with many other forms of land uses. It would be worthwhile if the state also provided other sufficient guarantees to ensure that subsoil users are granted land necessary for mining, infrastructure development and operations in an expedient and timely manner.

## 4.3.9 | MORE OPEN AND TRANSPARENT ACCESS TO GEOLOGIC INFORMATION

Although rules for access to state-owned geological data have been liberalized since January 1, 2011, in practice, geological information is still made available only to participants of auctions or tenders. Information obtained by a subsoil license holder at its own expense remains the property of the license holder. Copies must be provided to the state, which must maintain its confidentiality (Article 27 of Subsoil Law).

Making information more accessible and available can benefit both exploration companies and the state. By holding existing data in open files for all parties to inspect and copy, the state would effectively encourage exploration activity and the chance of success by focusing expenditures in those areas that have interesting geological information. Furthermore, the necessity to submit information from ongoing exploration activities will allow Russia to enhance and modernize its database on mineral deposits and prospective terrains.

Additionally, according to current Russian law, the export of geological information is subject to licensing. Licensing procedures can be quite complex and contradictory and involve numerous government authorities. These basic procedures are:

- A company must first obtain a permit to export geological information from the Federal Service for Supervision in the Area of Subsoil Use (Rosprirodnadzor). However, the information required to accompany the applications is not clearly delineated in the regulation.

- A special commission within Rosprirodnadzor examines the applications and is authorized to issue permits.
- After obtaining the Rosprirodnadzor permit, the company must apply to the RF Ministry of Industry and Trade for an export license, which is issued by the relevant territorial department of the Ministry.

Requiring a license to export and transfer geological information on non-strategic mineral properties creates unnecessary bureaucratic procedures and delays that hamper investment. Geological information disclosed to a potential investor under a confidentiality agreement or information a foreign shareholder in a Russian joint venture has access to, in our opinion, should be allowed to be exported without obtaining a permit from the state.

What's more, some mineral information is still classified as "state secrets" (Russian Federation Law No. 5485-I and Presidential Decree No. 1203), even though there are few justifiable reasons to keep most of the information classified. This adds even higher burdens for both Russian and foreign investors seeking to gain access to and use available information to discover and mine economically viable deposits. Only persons who have a special permit (*dopusk*) can have access to classified information. Foreign staff may have legal difficulties obtaining such a permit.

Classification of information as a state secret is also not uniformly applied. For example, generally the information on nickel reserves is subject to state secrecy restrictions. Yet Norilsk Nickel, the holder of the most substantial nickel reserves in Russia, had its reserves declassified and are no longer restricted by the country's State Secrets Laws. On the other hand, some independent subsoil users with minimal nickel reserves are still restricted by the secrecy rules.

## 4.3.10 | DEVELOPMENT OF RUSSIA'S MINING CAPITAL MARKETS

Russia is currently undertaking an aggressive agenda to adopt new laws to improve the country's investment climate and create the infrastructure to transform Moscow into an international financial centre. This agenda includes new laws to improve the country's financial infrastructure and regulate the financial markets as well as to reform the judicial system and migration and tax policies.

A fully functioning and transparent capital market is essential to attract mining exploration and development investment. Beyond its broader financial markets reform effort, Russia can implement a number of additional reforms to encourage development of mining capital markets. Areas in need of such reform include the following:

- As noted above, many subsoil plots are deemed to be strategic properties solely on the basis of the minerals contained therein. This significantly hampers the ability of the holder of such properties to seek third-party financing, especially equity financing, or to transfer the license to its existing or new subsidiary.
- State secrecy laws and other regulations on the use and disclosure of information also hamper investment. It is not possible for subsoil users to obtain the required financing without presenting this information to financial institutions.
- The Subsoil Law generally prohibits the transfer of licenses for subsoil land of federal significance to a company incorporated in Russia where a foreign investor (or group of persons) has a 10% controlling financial interest. Such transfers can only be carried out in exceptional cases, based exclusively on a decision by the government.
- Under current law, the federal and regional governments have the right-of-first-refusal to precious metals and precious stones (PMPS) mined in Russia. Only after this can mine operators and producers use the PMPS in their own production or for sale in Russia or internationally on external markets. In our view, the right-of-first-refusal requirements create difficulties for completing economic assessments and arranging external financing. A more transparent and simple mechanism that provides investors with clearer rights to pledge or sell PMPS, if the state does not plan large-scale acquisitions in the near future, would be beneficial to the development of Russia's mining capital markets.

## 4.3.11 | TAX POLICY TO ENCOURAGE EXPLORATION AND DEVELOPMENT

Russian law allows for the following types of subsoil use payments: one-time payments, regular royalties, and fees for participation in tenders. Mining companies in Russia are also subject to a mineral extraction tax.

Subsoil use payments apply to the following activities: geological study and appraisal, exploration of deposits, and pre-construction or construction works related to subsoil use activities. Russian law prescribes minimum and maximum rates for each type of activity, depending on the area of subsoil use. Within these frameworks, Russian regional state executive bodies set specific rates, which are reflected in the corresponding mineral license.

One of the ways of calculating Russia's mineral extraction tax is on an ad valorem basis — it is based on the prices (excluding VAT and excise taxes) that extracted minerals are sold, subject to Russian transfer pricing rules and as long as they are not lower than the market price. Taxes are due monthly. Currently, a 4.8% tax applies to ferrous metal ores, a 6% tax to gold, a 6.5% tax to other precious metals (including silver), and an 8% tax to most non-ferrous metal ores.

Mineral extraction tax based on profit, rather than sales prices, would serve to encourage more exploration and development investment. Taxes on profits are more reflective of the cyclical nature of commodities pricing and would not discourage development and investment when prices are low. Any tax imposed on exploration and mining activities in Russia should be competitive internationally, as well as transparent and fixed for the duration of the term.

Additionally upon a successful conversion from an exploration license to a production license, the subsoil user must pay a minimum one-time payment which is calculated as 10% of the projected amount of mineral extraction tax payable based on the average annual output capacity of the mining company. While the application of this payment has improved in recent years, it would be logical to abolish or at a minimum shift this to a stage when the subsoil user generates profit.

## 4.3.12 | INTERNATIONALLY-RECOGNIZED MINERAL RESOURCE AND RESERVE CLASSIFICATION SYSTEM

Russia still relies on its unique Mineral Resource and Reserve Classification System, which dates back to the Soviet era and is not compliant with international standards. This system is very formulaic and is based almost solely on objective geologic factors, rather than economic and risk factors. In contrast, internationally accepted systems (JORC, SAMREC, Canadian NI 43-101, US SEC, and the IMM code) emphasize the unique nature of each deposit as well as multiple economic and risks factors. As a result, most international investors currently use both international and Russian resource delineation systems for their joint ventures in Russia.

Russia is currently undertaking an initiative to align the Russian system with international CRIRSCO standards, which establishes minimum standards for international reporting requirements. However, few international companies actually use the CRIRSCO reporting system and banks and other financial systems do not consider reports prepared to CRIRSCO requirements sufficient for financing decisions. As a result, Russian and international investors in Russian mining operations would still be required to use two resource delineation systems.

Russia might consider adopting a classification system more in line with Australia's JORC or Canada's NI 43-101, which are considered more rigorous mineral disclosure policies than CRIRSCO standards. Alternatively, it would be logical if companies were allowed to choose which report to prepare, the more detailed JORC or NI 43-101, or those based on CRISSCO standards.

## 4.3.13 | MORE OPEN AND TRANSPARENT TENDER PROCESS

As a general rule, production licenses are only awarded in Russia via auction or tender (Article 10.1). Yet, according to information from the RF Ministry of Natural Resources, 70% of tenders and auctions in the mining sector in 2010 were announced as "not having taken place" for lack of interest from both foreign and Russian investors.

Auction- and tender-related acts in Russia have stringent qualification requirements. Technical and financial abilities must be proven by documentary evidence for a number of criteria, including:

- Technical quality of exploration/production plans;
- Volume of mineral extraction;
- Contribution to regional socio-economic development;
- Proposed timescale of programs;
- Efficiency of proposed environmental measures; and
- Contribution to interests of national security (Article 13 of Subsoil Law).

Both tender and auction commissions have significant discretion to disqualify an applicant for reasons not based on the independent evaluation of the applications and related documents.

If Russia proposes continuing to award production licenses based on auctions or tenders rather than on a first-come, first-obtained basis, in our view, it would be worthwhile making these tender processes more open and transparent.

Also, as part of the decision-making process, it would be logical for tender commissions to base their decision as much, if not more, on the exploration work performed by the applicant, or its core shareholder(s), as on technical information included in tender documents. It would also be worthwhile if the authorities allow applicants to submit missing documentation at the request of the authorities and within a reasonable period of time.

## 4.3.14 | GREATER EMPHASIS ON ESTABLISHED CIVIL LAWS

According to our observations, the establishment and application of rules by regulatory agencies is having the result of further departure from the limited but important civil protections contained in Russia's Subsoil Law. For example, Article 11 of the Subsoil Law provides that parties to mining operations may sign an agreement governing their relationship. In practice, however, the terms and conditions of such agreements are established solely by Rosnedra. This could be considered the direct result of a Ministry of Natural Resources rule (Regulation No 315, September 29, 2009) that prescribes the exact form and information for title pages for subsoil properties.

Both subsoil users and the state would benefit from an increased emphasis on civil law oriented legislation, rather than primarily administrative regulations.

## 4.3.15 | CLARIFYING GAPS AND OVERLAPS IN RUSSIAN LAWS REGULATING SUBSOIL INVESTMENTS

Currently, there are some overlaps and gaps in Russian law governing subsoil investment and activities. For example, Subsoil Law and the Licensing Regulations both regulate subsoil activities, but the provisions of the two laws have not been rationalized or consolidated. This creates confusion and difficulties for both subsoil users and authorities.

Today, the Subsoil Law is considered to be the prevailing law regulating subsoil use. However, subsoil authorities are still enforcing the Licensing Regulations (e.g. in tender/auction announcements, subordinate acts of the minister) and decisions by Russian courts as fully valid laws. In cases where certain issues are not addressed in Subsoil Law, Licensing Regulations provisions apply.

Merging the two subsoil laws into one would streamline procedures and overcome confusion and delays.

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The legislative and regulatory reform outlined in this document does not require wholesale changes in Russia's philosophy and way of thinking about protecting its mineral resources. In fact, what is proposed is relatively straightforward, but critically important "adjusting" of the country's laws and regulations affecting mineral exploration and development. However, this adjusting could have big payoffs in terms of substantially increased investment, which in turn will translate into higher state and regional revenues, economic development in remote regions of Russia, and greater employment in the mining sector.

# KEY FINDINGS AND CONCLUSIONS

## KEY FINDINGS

This paper reviews and summarizes issues related to mineral investment including broader cost-risk-return measures as well as the sources and destination of capital in the mineral industry. This review is carried out in the context of examining more specific opportunities and challenges faced by Russia in further developing its mineral industry by attracting increased foreign and domestic investment.

Key findings of this review include:

1. The exhaustible nature of mineral deposits requires continual re-investment in the discovery and development of new sources of supply. Searching for new economic mineral deposits is a high-risk activity that typically requires many years and a large financial investment. In recent years, the average discovery cost for a new gold deposit was approximately $70 million. Companies will only undertake this high-risk activity if a risk-adjusted return on investment exists. Realizing these potential returns hinges on overcoming the high discovery risk that reflects the underlying geological endowment as well as the regulatory and legal environment that controls the right to develop discoveries and generate and repatriate profits. Furthermore, a prime motivator in encouraging high-risk investment in mineral exploration is the chance, however small, of finding a deposit of exceptional size and quality. Companies need clarity and assurance that they can share in the returns of these few world-class deposits should they be fortunate enough to make such a discovery.

2. In nearly all countries, mineral resource ownership resides with the state. Making efficient use of this natural capital for the benefit of society requires trade-offs between state and private ownership as well as present and future production. Through well planned and flexible tax and royalty structures, it is possible to reap the rewards of resource development and to share this wealth among all stakeholders – the mine finders, mine builders and the state. The effective rates of profit and production taxes and royalties vary widely across mining jurisdictions typically ranging from 20% to 60% of the value of mining operations shifted from the corporation to the state. Companies prefer to pay taxes on profits rather than sales revenue or production output, but many mining tax jurisdictions comprise a mix of profit taxes and revenue based royalties. In this context, a mining tax regime strikes the right balance when it is flexible enough to encourage investment and at the same time provide the state with a fair share of the benefits for leasing its mining resources for development and production.

3. Russia appears under-explored compared to other jurisdictions where the mineral exploration industry is promoted and encouraged and more highly integrated into the capital markets and broader financial and business structure. Although Russia currently ranks sixth in level of exploration expenditure among all countries, it severely lags the leading nations such as Canada, which has four times the amount of exploration activity. On the basis of exploration density defined as exploration expenditure per km$^2$ of land area, Russia ($28/km$^2$) is well below the average ($96/km$^2$) of the top 10 exploration destinations. If Russia were to increase its expenditure level to this average value, it would rival Canada with more than $1.6 billion in total annual exploration investment.

4. In terms of global capital markets for mining, Canada is the leader on most fronts. Between 2005 and 2009, 82% of all mining equity deals were completed on Canadian stock exchanges. Canada's position is enhanced by the presence of the Venture Exchange (TSXV) of the TMX Group Inc. This exchange is populated primarily by junior exploration companies, which undertake the high-risk activity of mineral exploration by selling shares to raise equity funding. Currently, more than 1,100 of these companies are listed on the TSXV and more than 350 larger mining companies are listed on the main Toronto Stock Exchange (TSX). Canadian stock exchanges compete with other capital markets for mining related business.

On the basis of value of mining equity raised, the London Stock Exchange (LSE) and the Australian Stock Exchange (ASX) are the major rivals for the Canadian exchanges.

5. It is not by accident that Canada is the dominant player in mining capital markets. A large network of institutional infrastructure supports the capital markets including professional education, investment banks, mining analysts, lawyers and fund managers. The market also is among the most highly regulated in the world giving confidence to investors. A key part of the securities regulation for the mining markets is National Instrument 43-101 that provides rules and guidelines for the disclosure of technical information to the investing public. This is particularly relevant in the reporting of resources and reserves for mineral properties and represents a substantial difference from the Russian classification system for resources and reserves, which is based largely on technical resident economic criteria.

6. For Russia to develop a domestic mining capital market to compete with Canada and others, it first needs to address broader legislative and judicial issues as discussed in Chapter Four of this study. Furthermore, encouraging foreign capital markets and companies to invest in exploration in Russia will further support the creation of a domestic capital market for mining and foster an investment culture among Russians.

7. In addition to being the largest destination for exploration expenditures and the key centre for mining equity deals, Canada plays a key role in exploration worldwide. Canadian companies control international mining and exploration assets worth more than $100 billion across nearly 5,000 individual projects. Furthermore, Canadian companies annually account for between 30% and 45% of total global exploration activity. Canadian federal and provincial governments actively encourage investment in the mineral sector from both foreign and domestic sources. With respect to FDI, foreign companies have invested between $50 and $70 million in Canadian mining ventures annually during the past 5 years. This amount rivals the international investment by Canadian companies.

8. With respect to domestic investment, Canadian governments make use of tax policy to encourage investment in exploration. The most successful policy in this regard is the Flow-Through Share Policy, which transfers tax credits from junior explorers directly to the individual investors in the shares of the corporation. This policy has resulted in approximately $5 billion invested over the past 15 years. Canadian governments have also moved from revenue-based to profit-based taxation of mining income and introduced other measures to become internationally competitive in terms of effective rates of taxation on mining projects. This is in contrast to Russia where taxation is largely focused on royalties applied to revenues resulting in higher effective rates of taxation.

9. A review of the subsoil and foreign investment laws regulating the mineral sector in the Russian Federation reveals a number of issues that could result in increased foreign and domestic investment. Key among these are:

A. **Encourage Foreign Investment that Benefits the State.** The current Strategic Sector Laws to a significant extent serve to discourage an increase in foreign investment. For example, the limit of less than 10% investment in or control of mining companies without requiring government approval seems too low. Additionally, it would be logical to streamline the process for considering applications for foreign investment in strategic industries.

B. **Classify Only Those Properties that are Truly of Federal Significance.** Law 58 is severely restrictive in terms of both the types of mineral commodities and the size of mineral deposits that are designated as strategic. These restrictions provide a major deterrent for exploration companies to incur the risks associated with exploration especially when discoveries which are deemed strategic are subject to confiscation by the state. It would be worth considering the possibility of reviewing the commodities listed as strategic and limitations on deposit sizes to ensure conditions exist to attract the interest of large mining companies.

C. **Property Rights Protection in the Licensing Procedure.** The following issues arise in this category:

I. It would be logical to grant only one exploration license for the same mineral property;

II. It would be expedient if the company holding an exploration license and that made the discovery be granted exclusive rights to production licenses;

III. It would be worthwhile revising the requirement for license holders to complete exploration on the property before development can proceed;

IV. It would make sense for licenses to be automatically extended to contiguous unclaimed properties;

V. As a practical matter, tenders and auctions are required to receive production licenses. These tenders and auctions are rarely transparent and allow for considerable discretion on the part of the authorities in selecting the winner;

VI. It would be logical for license holders to have the right to extract minerals which are discovered but not explicitly defined on licenses with a simple amendment to the existing license;

VII. It would be expedient for a mechanism to be put in place for securing land use rights and resolving conflicts with forestry and other land users;

VIII. It would be advisable for greater access to be allowed to geologic information prior to obtaining licenses and the ability to transfer the information to foreign companies without export licenses;

IX. The liberalization of legislation on state secrets about mineral resources would be an important step;

X. It would be worth considering the possibility of narrowing grounds for termination of a license; currently they are both are excessive and applied somewhat arbitrarily;

XI. It would be expedient to lift restrictions on the sale or transferability of licenses and properties; and

XII. The passing of regulations allowing the turnover of project infrastructure from a previous owner to a new owner would play an important role.

On their own, many of these issues would not necessarily restrict investment in the mineral sector in Russia. When considered collectively, however, they represent considerable risk and uncertainty for investors and put Russia at a distinct competitive disadvantage for attracting the required capital to grow its mineral sector.

## CONCLUSIONS

The Russian Federation is one of several countries that have been working to introduce modifications to its regulatory and financial markets to attract foreign investment. The mining sector currently exhibits strong demand and price characteristics. Its forecasted strong growth over the coming decades carries a high opportunity cost for any country, including Russia, that does not establish an investment climate that balances financial regulatory reform and the state's other responsibilities of resource protection and revenue generation.

Mineral exploration and mine development companies are prepared to invest in many jurisdictions with less than ideal investment climates if the perceived geologic potential is high and the right to mineral tenure is guaranteed. The Russian Federation has a real opportunity to join other large countries in attracting sufficient exploration funding on a per $km^2$ basis to enhance the development of its mineral resource base. This will not require a complete overhaul of investment rules or a major shift in philosophy or ideology regarding state ownership of mineral resources. The right to develop deposits that are discovered through exploration activities of foreign or domestic companies and the right to maintain a reasonable share of even the largest and best discoveries would significantly increase the levels of investment in exploration activity in Russia. The resultant discoveries from this activity would ultimately be an economic benefit to the state and people of the Russian Federation. Furthermore, this investment and interaction with foreign exploration entities and associated capital markets would be the first steps towards building a domestic market that could raise funds and establish companies to compete for new discoveries and development.

# APPENDIX 1
# COMMENTS ON KINROSS GOLD'S WHITE PAPER FROM INDEPENDENT EXPERTS

## Valery Braiko, Chairman

**Gold Producers' Union of Russia**

### Evaluation of the White Paper

The Gold Producers' Union of Russia has thoroughly examined the report prepared by Kinross Gold and considers it to be very timely.

The Union beieves the Russian precious metals and gems market is in dire need of improvement in the business climate, raising effectiveness of state regulations and narrowing government control over business in the mining sector.

The Union supports the areas singled out in the White Paper as key to Russian mineral legislation reform. We consider the following recommendation to be the most important: amendments should be made to the Subsoil Law regarding designation of resources as belonging to the federal reserve if they contain 250 tons or more of hard-rock gold reserves (instead of 50 tons). The threshold for foreign investor control over a business should stand at 25% of statutory capital (instead of 10%). Raising the threshold for foreign ownership from 10% to 25% would still limit foreign control, while encouraging greater foreign investment.

### Overview of Russia's Mining Industry

Data supplied by the Federal Agency on Mineral Resources (Rosnedra) shows that exploration financing in 2010 quadrupled compared to 2004 (reaching 197 billion rubles), the ratio of budget to non-budget financing remained at 1:8, and auction revenue rose tenfold while the number of auctions increased insignificantly (Table 1).

The Russian Federation Mining Industry Development Strategy through 2030, which was approved by the Government of the Russian Federation in 2010, provides for a 20 % increase in exploration financing in 2015 compared to 2010, with the figure rising to 40% in 2020 and 50% in 2030.

This means that exploration financing is set to reach about 300 billion rubles a year only by 2030 – the level, which by Rosnedra's assessment, Russia needs to attain today to conduct full-scale mineral exploration.

The urgency of reforming Russia's state policy in the mineral industry is highlighted by falling investment stemming from a deficient legislative and regulatory regime in the mining sector (obligatory handover to the state of deposits discovered by subsoil users at

**Table 1. Mineral Exploration Financing in 2004-2010 (bln rubles)**

| Mineral Exploration Financing | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2010/ 2004 |
|---|---|---|---|---|---|---|---|---|
| Budget financing | 5.2 | 10.7 | 16.4 | 19.8 | 22.0 | 18.9 | 20.6 | fourfold |
| Non-budget financing | 43 | 71 | 86 | 145 | 197 | 149 | 176 | fourfold |
| Total financing | 48.2 | 81.7 | 102 | 165 | 219 | 168 | 197 | fourfold |
| Ratio of budget to non-budget financing | 1:8 | 1:7 | 1:5 | 1:7 | 1:9 | 1:8 | 1:8 | |
| Number of auctions | 250 | 837 | 879 | 953 | 421 | 372 | 789 | threefold |
| Including hard rock minerals | 205 | 604 | 610 | 644 | 287 | 81 | 467[10] | |
| Revenue from auctions | 3.9 | 25 | 61.1 | 40 | 92 | 41 | 40 | tenfold |
| Budget revenue from Mineral Extraction Tax | 425 | 854 | 1,094 | 1,123 | 1,605 | 982 | 1,377 | threefold |
| Including hard-rock minerals | 7 | 8 | 9 | 8 | 10 | 11 | 16 | twofold |

their cost and the system of distribution of geological study licenses via auctions, which diverts considerable funds from exploration, etc.).

Under the current state system of subsoil use Russia ranks sixth among all nations in terms of absolute total exploration expenditures; on the basis of exploration density defined as exploration expenditure per unit of land area ($28/km$^2$), Russia is the lowest of the major target destinations. In our opinion, Russia is lagging behind because the state does not stimulate exploration and the exploration sector is not integrated with capital markets or the country's business and financial infrastructure.

## Suggestions from the Gold Producers' Union of Russia

### 1. Amending the current procedure for confirming a new deposit has been discovered.

The existing regulation requires that the reserves of a deposit be allocated to the C1 and C2 category for a discovery to be certified. That leads to higher costs and additional risks for investors from the unjustified expansion of exploration programs. It would be reasonable if the fact of a discovery could be established on the basis of the results of the prospecting and prospecting-and-assessment stages of exploration – with reserves allocated to category C2 (20-40%) and resources to category P1 (60-80 %) – provided that the scope of the deposit and its 3D geometry have been defined in advance, and a qualitative and quantitative assessment of reserves and resources on the basis of an exploration feasibility study has been conducted.

### 2. Increasing many times over the number of exploration and production licenses granted for deposits discovered by subsoil users at their own costs and reducing the waiting time for obtaining strategic deposit licenses.

According to a Rosnedra report, 49 exploration and production licenses were granted in 2009 for deposits discovered by subsoil users at their own cost. As many applications were rejected (in 2010 the number stood at 89) and not a single license was issued for strategic deposits.

The Ministry of Natural Resources of Russia has drafted a government resolution proposing that a 30-day deadline be established for the approval of draft resolutions granting subsoil use rights, including those for strategic properties. We consider the term to be acceptable for subsoil users.

### 3. Reinstating the norms providing that the granting of a subsoil license be conditioned on consent by the owner of the relevant land to allot it for subsoil use purposes (Part 3 of Article 7 of the Federal Law No. 309, version from December 30, 2008 and Article 25.1 of the Subsoil Law, version of the Federal Law No. 118 from June 26, 2007).

The abolition of the abovementioned norms was related to court verdicts on lawsuits filed by subsoil users seeking reimbursement of funds paid for licenses. The granting of licenses without prior consent of the owner of the land, in case the latter decides against it, makes it impossible for license holders to have recourse to the law to recoup the money paid.

[10] Including 236 (over 50%) abortive tenders.

**4. Stopping the compilation of annual lists of properties offered for geological study paid for by subsoil users.**

The procedure for approving the lists is far too bureaucratic and not very effective. It deprives mining businesses of the freedom to choose properties, which, in their view, are worth considering.

**5. Granting geological and combined licenses without auctions on a first-come-first-served basis.**

The current system of awarding properties for geological study through auctions does not take into account the risks associated with finding an economic deposit, and it essentially creates conditions for diverting subsoil users' funds from exploration investment. Calculations made by the Union for 125 auctions held from 2007 to 2011 show that the government received nearly 3.5 billion rubles for granting geological and combined precious metals licenses through auctions. If we assume that the average cost of a major gold deposit prepared for production is about $70 million, then the money would be enough to prepare two major gold deposits which would yield 6-7 billion rubles a year in taxes. Additionally, new jobs would be created.

**6. Bringing the Russian classification of hard-rock mineral deposits in line with internationally accepted systems of classification of mineral resources and reserves.**

The classification of hard-rock mineral resources and reserves approved by Order No. 37-r of the Ministry of Natural Resources of Russia from June 5, 2007 (hereinafter the Classification) differs little from the one dating back to the Soviet era when exploration and production costs were met solely by the state. There are even certain novelties, which distort the notion of a discovery. For instance, the Classification allows category P1 resource allocation on certain properties where no deposit has been discovered, while in the Soviet classification, category P1 resources, jointly with category C2 reserves, were the main factors in assessing the feasibility of further study of a discovery, or served as an additional reserve base on deposits that were being explored, had been explored or where production had started. In our opinion, it is therefore inadmissible from the point of view of state interests to offer properties with category P2 and P3 resources at auctions.

The auction winner has not yet discovered a deposit with real 3D boundaries, it has no certain knowledge of the ore grade and quantity, but the license assigns to the winner the exploration completion deadline, the date of the launch of production and even annual production targets.

To raise exploration and production financing after a discovery is made, Russian subsoil users have recourse solely to internationally recognized systems of reserve and resource classification, as our Classification (we must finally admit it) falls short of investor requirements.

**7. Abolishing the system of mineral deposit evaluation based on coefficients used for converting category P1, P2 and P3 resources into higher category reserves to calculate one-off payments at auctions.**

The application of such coefficients turns properties with projected resources into deposits with real reserves.

Pavel Nikachev,
Corporate Finance Advisory

Deloitte CIS Deloitte.

### Evaluation of the White Paper

The report provides a detailed description of global best practices in the mining industry and gives rather distinct recommendations on how to improve the investment climate in the Russian mining industry. Though not all of the recommendations provided could be easily adopted in Russia, I believe that Kinross' efforts will help improve the investment climate in Russia's mining industry.

### General Comments

In order to ensure favorable conditions for international investors, it is necessary to analyze the current regulatory and legal framework and to define ways to improve it. Special efforts should be directed to the following:

- Stabilizing Russian legislation, including the section stipulating the norms of regulatory control

over the mining industry. It is also recommended to balance the tax legislation applicable to certain regions and projects to ensure a stable tax burden for foreign investors. This would serve as an additional encouragement for foreign capital markets and investors.

- Applying equal requirements to local and foreign investors competing for access to Russia's mineral resources. Requirements of exploration license holders should also be enhanced.
- Reforming migration law in order to pave the way to Russia for Western specialists. The state has already introduced important revisions facilitating entry for highly qualified specialists. However, bringing foreign staff to Russia still remains quite a challenging task in terms of administrative requirements which often prevents vacancies from being filled in a timely manner by people with the required qualifications.
- Ensuring transparent decision-making when it comes to cooperation between foreign investors, the government and administrative control over projects.

## Tax Policy

In order to promote the development of its extractive industry, Russia needs to overcome a number of barriers that interfere with a favorable investment climate. Revision of the tax legislation is among the required measures:

- To allow accelerated deduction of costs incurred as a result of exploration, including accelerated depreciation, by raising the depreciation premium, expenses for field development, license fees, expenses for land recultivation and construction of temporary facilities, etc.
- To ensure tax incentives and special tax systems for exploration-stage companies. To allow deductions of relevant expenses for profit tax purposes securing approval from Russian shareholding taxpayers. This goal may be achieved through the introduction of a consolidated taxpayer system.
- To ensure efficient VAT recovery from the federal budget in the event of implementation of long-term/ capital intensive projects, which dominate the extractive industry.

## Policy Recommendations

In our opinion, it is reasonable to take into account the following recommendations:

- The state should support infrastructure development in distant and hard-to-reach territories by improving roads, railways and power transmission lines. Support may include provision of monetary grants or tax incentives, facilitation of negotiations with Russian Railways, RusHydro, Inter RAO UES and other state bodies on co-financing of the above-mentioned construction projects.
- A concession period for the mineral extraction tax or complete exemption from this tax should be granted to Russian or Western companies developing small fields.
- Currently young people do not view geology as a prestigious profession and are reluctant to study relevant fields. Consequently, the industry is soon to face a huge lack of such professionals. It is vital for the state to raise the profile of this profession, e.g. by running joint education programs with various mining companies akin to the one being developed by Kinross and the New Economic School.
- Involvement of such corporations as Rusnano in financing innovative developments aimed at exploration, drilling etc.
- Stimulating development of domestic related sectors including manufacturing of machinery for the mining industry. This will allow companies operating in Russia to reduce expenses by buying quality domestically produced equipment.
- It is necessary to raise the profile of the Russian mining industry among potential Western investors. Representatives of various state bodies may undertake this task by promoting the domestic industry at mining conferences, exhibitions, etc.

## Financial Markets

Another important aspect, especially given the plans to promote Moscow as a global financial centre, is to ensure relevant conditions enabling Western mining companies to list on Russian stock exchanges. The system of Russian Depositary Receipts much discussed prior to the crisis is one of the ways to achieve this goal.

Large Western companies like Kinross will be able to initiate low-level, i.e. purely image-building, listings on local stock exchanges. It is also vital to establish favorable conditions for CIS companies to access the Russian financial market, thus establishing in Moscow a regional financial centre for CIS-based mining companies.

Based on the previous suggestions, it is necessary to stimulate Western private equity funds to invest in Russia's mining industry. Such funds serve as a vital investment source for private companies. At present there are 3 or 4 private equity funds in Russia that are ready to consider purchasing a minority share in a Russian mining company. However, not a single transaction of this kind has been registered so far. At present, none of the numerous Western private equity funds is ready to invest in Russia due to the risky environment.

### Recommendations on FIAC

It is recommended to invite the following groups to FIAC meetings:

- Chinese companies display a strong interest in the Russian market and boast huge financial resources.
- Representatives of the investment community, including direct investment funds, advisors, investment bankers, etc.
- Representatives of various domestic mining companies, which have recently invested in other countries instead of the local industry.

### Relevance of Kazakhstan's Experience to the Russian Market

Authors of the report refer to Chile as a country that managed to enhance the attractiveness of its mining industry for foreign investors. In my view, Kazakhstan's efforts in the field may also serve as a relevant example, since the country ensured fairly good conditions for the mining industry.

## Konstantin Korotov, Sustainable Construction and Affordable Housing Manager

**Lafarge Cement (Russia)**


We consider it useful to expand the chapter on regulatory reform with the following recommendations:

### Mining Sector Regulation Based on Regional Specifics

There should be a balance found between the activities of Rosnedra in issuing licenses to mine non-commonly occurring mineral and investor appeal of regional markets to solve the problem of under- and over-production. Concentration of facilities for production of similar types of produce leads to excess capacity and has a very negative impact on the market.

### Protecting the Rights of Companies, which Invested in Federal Mining Licenses

Russian legislation divides minerals into two categories: non-commonly occurring, for which licenses are issued by federal government bodies, and commonly occurring, which are dealt with on the regional level. Therefore acquisition of licenses to mine non-commonly occurring minerals entails considerable investment from mining companies.

Certain unprincipled companies use commonly-occurring minerals at facilities requiring a federal license for mining non-commonly occurring minerals. They employ schemes involving sales of raw materials from a subsoil user company to a production company while both companies are affiliated with the same group of persons and avoid responsibility for violating the law.

### Clarification of Land Use Issues

Mining licenses should grant rights to the land lying within the licensed property (over the mineral deposits). Subsoil users, which obtained licenses before the proposed changes, must have exclusive rights to lease land owned by the state or municipalities and lying within licensed property boundaries. As for private land lying within licensed property boundaries, there should

be arrangements made allowing for it to be bought out in line with procedures specified in Article 49 of the Land Code of the Russian Federation.

It is also necessary to fill in the gaps in legislation governing urban development on mining properties. Section 4 of Article 36 of the Urban Development Code of the Russian Federation stipulates that urban development regulations do not cover land provided for mining purposes. Article 37 of the Urban Development Code of the Russian Federation stipulates that decisions on changing the class of land use can be taken on the basis of corresponding federal laws. No such laws have been adopted and prior court rulings give no clues as to how the issue could be resolved. This situation creates numerous legal problems, including at state bodies for project documentation assessment.

## Piotr Dutkiewicz, Director

**Centre for Governance and Public Management, Carleton University (Canada)**

Carleton UNIVERSITY

### Evaluation of the White Paper

The report is well written and timely. It is balanced, useful and constructive. The general recommendations regarding property rights, areas of state strategic interests, etc. are persuasive, sound and concrete, and the policy recommendations (legal and regulatory) are comprehensive and in line with Russian realities, and are therefore quite doable.

### Comments

**The relevance of international experience:** Tye W. Burt's introduction sets the right tone by saying that "Canada provides an instructive example of how countries can protect and safeguard their national mineral wealth while at the same time ensuing robust capital formation and investment." As other examples are discussed as well (Chile and Australia), there needs to be clear justification why they are there in Russia, why were they picked and how they stand in comparison to Canada.

**Regional Governments:** The report is very much federal-centric; it provides arguments about how the state (mostly federal institutions) should act in order to improve mining exploration and investment. It will be very useful to balance that approach with a stronger emphasis on the potential regional benefits from the process. Mines are located in concrete regions and they are looking for arguments why they should support them.

**Labor Mobility and Human Capital:** The report is heavily technical and less "social" and "developmental." I would suggest adding at least a few pages on the broader social benefits and challenges related to extending mineral exploration as well as the role of regional authorities and companies in that area. The report should provide more powerful arguments to show the benefits for the labor market, education, and management skills and knowledge by bringing foreign investment into that area. How many people can be employed? What new skills/knowledge are required? How it will influence the quality of human capital in Russia? How can existing R&D be strengthened?

**Impact on modernization:** The report will also strongly benefit from adding concrete examples on how mineral exploration can bring new, modern technologies to Russia (from exploration to extraction), how it may help to re-industrialize and thus modernize Russia and how it can build new R&D capacity.

**Environment:** The public discourse in Russia is becoming more and more influenced by environmental issues. As there is a perception that mining is environmentally sensitive, a special section is needed to discuss how Canada (and/or other countries) is taking into account protection of the environment and outline the standards, involvement of experts, role of the government, etc.

**Tax Policy and recommendation on tax structure:** Some Russian companies are well known for creative ways of hiding profit by expanding costs. The report provides the key recommendation that taxation for exploration and development should be based on profit "rather than sales prices." I would suggest to revisit that recommendation to come up with a balanced mixed system (revenue/profit) whereby Russians will be better assured that foreign business is not going to employ the same tactics that Russian companies do to avoid tax payments.

## Laura Dawson, President

### Dawson Strategic (Canada)

### Evaluation of the White Paper

The White Paper is a thorough and a well-researched document with persuasive economic recommendations for reform.

### Comments

**The relevance of international experience:** Explanations of international norms and practices in Chapter 2 and the Canadian case in Chapter 3 are excellent. It is recommended to draw evidence and examples from these chapters to strengthen the case for Russian regulatory reform recommendations featured in Chapter 4 (e.g. strategic sectors, tax reforms, domestic regulations). The paper makes a strong economic case for reform but reference to international best practices will provide assurances that recommended changes have worked elsewhere.

**Investor-State Dispute Settlement:** The White Paper refers to Russia's accession to the WTO as a drawing card for foreign investment. However, the relatively weak investor protections in the WTO will have to be augmented by other regimes in order to provide meaningful investor coverage. While Russia has ratified nearly 30 bilateral investment treaties (BIT) and, in some of these, has authorized dispute settlement by third-party arbitrators (UNCITRAL, etc.), Russia's willingness to abide by third-party rulings is relatively untested. Furthermore, Russia has not ratified the BIT negotiated with the United States. The paper may wish to explore the costs and benefits of Canadian adherence to an investor-state dispute settlement regime.

**Foreign Investment Restrictions:** Many of the laws quoted, such as the Law on Strategic Industries, will also affect non-mining sectors. It would be helpful to know more about the appetite for foreign investment review in these other sectors — allies, opponents, and projected economic gains of broader reforms. A similar point applies for capital market expansion.

**Strategic Commodity Definition:** The discussion on the definition of a strategic commodity is important, but fragmented across a couple of chapters. Although Chapter 4 sets out complaints about definitional ambiguities regarding strategic commodities, there needs to be a reference of how other states' regimes handle it. At this point, the Australian approach featuring in Chapter 2 can be drawn out and somewhat extended in Chapter 4.

**Corruption:** It has a chilling effect on investment, and the U.S. SEC's growing global reach on anti-corruption is spooking investors further. The Russian discussants (New Economic School) mention corruption and expropriation issues. The implied message is that inadequate laws are the problem, not their implementation.

**Additional Comments:** Apart from that, I agree with suggestions of the New Economic School about infrastructure incentives, measures for improving the Russian stock exchange(s), the role of regional governments, the importance of building staffing capacity and environmental protection.

## Declan Kelly, Partner

### Teneo Capital (USA)

### Evaluation of the White Paper

Overall, we think it is a very well put together presentation of the issues involved in the complicated foreign investment environment that is Russia, and we expect it will be well received by the Russian authorities.

The White Paper clearly accomplishes its goal of identifying tangible opportunities to change the legislation and regulations in Russia to foster foreign investment in mineral exploration and establish Moscow as a financial centre for the mineral industry. The paper identifies these without prescribing how the changes need to be implemented and the final form of the new standards. This allows for a Russian interpretation of the issues while focusing the regulators' attention on the most important challenges to the development of future mineral investments in the Russian Federation. The paper makes a strong

argument that if the suggestions were implemented, the changes would result in a net benefit to the Russian Federation economy and mining industry. We believe your document could serve as the basis for similar recommendations to other countries in which Kinross is heavily invested.

### Comments

**The relevance of International experience:** The document focuses on the benefits of implementing similar laws and regulations to Canada's in Russia. The White Paper explicitly uses the exploration density data to demonstrate the success of Canada's mining laws and regulations in promoting exploration and development.

Although Australia, South Africa, and Mexico have similar, if not higher, exploration densities than Canada, the paper is somewhat dismissive of their regimes relative to Canada's. As pointed out in the paper, Canada's rules foster the most liquid markets and enable smaller entrants to list on the exchanges, but the paper is less clear about the direct benefit of these strong capital markets in attracting exploration investment within the same country and to benefiting domestic economic development more generally.

**General Benefits for the Russian Economy:** The White Paper covers topics that could be applied to many sectors to improve the overall governance of the Russian Federation. The improvements necessary in taxation, capital markets reform and government bureaucracy to encourage a successful mining sector would benefit all industries.

## Natalia Lacorzana, Senior Banker

**European Bank for Reconstruction and Development (United Kingdom)**


### Evaluation of the White Paper

The White Paper appears to be a very comprehensive and well-researched document as it covers a diverse spectrum of issues related to fostering investments into the mining industry in Russia.

### Comments

**Tax Policy:** I would support the recommendation to gradually move towards profit-based taxation. Representatives of the New Economic School argue that a profit-based approach may not be workable in a system characterized by low transparency and tax evasion, but it does not seem to be a reason not to aim at a gradual switch to profit-based taxation over the medium term, provided that transfer pricing and other legislation is adopted and successfully implemented.

**Environment:** On another topic, which is particular important for the bank, we think that environmental issues could be discussed in greater detail. They are important per se; and this would highlight the social responsibility credentials of the mining companies. In addition, clearer understanding of companies' environmental obligations would indeed reduce uncertainty with respect to revocation of licenses on environmental grounds, etc.

# APPENDIX 2
# COMMENTS ON KINROSS GOLD'S WHITE PAPER FROM THE NEW ECONOMIC SCHOOL (RUSSIA)

Paul Dower, Sergei Guriev, Natalia Volchkova[11]

## Evaluation of the White Paper

The White Paper does an excellent job in terms of the goals that were set. It provides a solid description of the global exploration business and of its financing, and offers a set of specific and timely policy recommendations for Russia. We generally agree with the main thrust of the White Paper – to establish clear and predictable rules for the sector and with specific recommendations on the legal and regulatory environment. This evaluation examines the main recommendations of the White Paper. In addition, we also discuss a number of recommendations that are not mentioned in the White Paper but could also contribute to improving the investment climate for the exploration business in Russia.

As stressed in the main recommendations of the White Paper, there is a broad consensus among economists around the world that foreign direct investments are beneficial for emerging economies not only as a source of funds but also as a source of modern technology (both in terms of technological innovations and modern business processes). [12] Also, economists agree that in order to promote long-term investments, countries should assure clearly defined property rights and predictable business rules in general. It is certainly less obvious how to provide protection of property rights and predictable business rules in a specific context. This is where the contribution of the White Paper is most relevant. The White Paper is especially valuable in identifying institutional constraints on foreign investment in the mining business.

## The Relevance of International (Canadian) Experience for Russia

One of the most impressive parts of the White Paper is Section 1.3, where the authors compare Russia to other mining regions in terms of "exploration density," the exploration expenditure per square kilometre of the land area. This comparison implies that if Russia creates conditions of mining investments similar to those in Canada, mining investments in Russia could potentially increase six-fold! As this result is very striking, the White Paper should provide more details to make this comparison more legitimate, such as exploration potential, climate, and proximity to markets.

The White Paper makes clear that policy uncertainties and legal ambiguities need to be addressed in order to improve the investment climate in Russia. However, these issues make drawing lessons from a resource-rich country with higher institutional quality such as Canada challenging. On the one hand, Canada presents an important benchmark for Russia

[11] The authors are grateful to Artyom Durnev for his comments and suggestions.
[12] For the evidence on Russia, see Yudaeva, et al. (2005) and the survey in Aslund, et al. (2010), ch. 3.

– as a resource-rich country that has managed to build both effective market institutions and well-functioning government institutions and has reached a high level of per capita income and social cohesion. On the other hand, the same argument suggests that there is a dramatic difference between Canada and Russia in terms of the initial conditions (in terms of quality of governance and maturity of market institutions).

While the geological comparisons between Canada and Russia are indeed valid and useful, the similarities take on a different light when one considers the political backdrop. To give an example, the White Paper places a particularly strong emphasis on the rarity and importance of large mines. To the extent that these large discoveries create leading mining companies, Russia's past experience suggests there is a higher degree of risk of expropriation of these companies than is the international norm. This point stresses the key impediment to exploration and mine development in Russia – the low strategic threshold for gold and other minerals. These low thresholds act as a deterrent to primary exploration as investors will not embark on the search for large deposits that could be confiscated by the government.

Extensive existing literature on economic growth and development in resource-rich countries (see a survey in Guriev et al., 2009) suggests that resource rents reduce incentives for a country to improve its governance institutions, and that resource-rich countries with initially lower levels of political accountability and quality of governance suffer comparatively more from this effect of resource rents. Thus, Canada is not the right model for Russia from this viewpoint. Other resource rich countries may be more appropriate (Bhattacharyya and Hodler 2010, Guriev et al, 2011, Guriev et al, 2009).

The authors of the White Paper understand these challenges very well and emphasize that strengthening the protection of property rights is key to improving investment climate and promoting long-term investment in the mining business. While the White Paper raises specific recommendations for improving relevant legislation and regulations, it is incumbent on the government to establish a roadmap to effect changes in the timeliest way possible. It is also essential for the changes to be publicized widely to potential entrants/ investors, including international junior explorers and senior mining companies.

The White Paper uses Chile as an example of a country which improved its investment climate over a short period of time. This is a very good precedent, particularly in terms of the comparability of initial conditions with those of Russia today. It is important to highlight that one of the main instruments to promote the Chilean government's growth agenda was trade openness. While the Russian government has made significant progress in this regard, Russian firms still face substantially higher costs to access foreign markets than Chilean firms did in 1990-1996 (Volchkova, 2011). Therefore, implementing the agenda outlined in the White Paper will require additional efforts in opening the Russian economy and reducing export costs (in particular, informational, infrastructural, legal and bureaucratic costs).

## Policy Recommendations

We generally agree with the policy recommendations produced in the White Paper. Here are some comments and concerns.

**The Law on Strategic Industries:** We agree with the recommended changes to the Law on Strategic Industries. Moreover, we strongly believe that these changes are in Russia's national interests. As rightly indicated in the White Paper, exploration is a high-risk business. Investors are prepared to assume these risks but require the government to assist by reducing barriers to entry and investment. Government sponsored mineral exploration is no substitute for private sector exploration and can only impose additional costs on Russian taxpayers.

We also suggest additional amendments to the Law. In particular, we believe that the Law should provide for a much faster and predictable decision making process with respect to investments in strategic industries. Currently, the time to reach the decision on a transaction is too long and variable: from four to seven months. In this respect the Law differs from the practice of similar legislation in many OECD countries (OECD 2008). This process should be shortened and streamlined.

**Tax Policy:** The White Paper favors a tax policy that targets profits instead of revenues. While there is logic to this, one issue to consider is that transparency matters in a system that suffers from tax evasion. Costs are much harder to observe. Both in the 1990s and in recent years there have been substantial evidence on the widespread use of offshore companies and fly-by-night

legal entities to reduce transparency and reduce the tax base (Mironov, 2011). Similarly, the Tax Flow-Through Policy, while effective and transparent in Canada, seems ripe for corruption on an already burdened tax system in Russia (Durnev and Guriev, 2007). In this sense, one can sympathize with the Russian government's preference to opt for the revenue-based tax system. However, we agree that this system should allow for indexation of the respective tax schedule and take into account continuing increases in costs (especially in dollar terms). Such indexation will combine the benefits of the revenue-based and profit-based systems, will provide incentives for cost reduction for companies and will be not be vulnerable to manipulation.

**Mining Rights:** Clear and predictable rules are crucial for providing incentives to invest. A single license per field is indeed the simplest rule and is therefore easiest to enforce in the Russian environment where complex arrangements are harder to implement. However, one should not rule out more sophisticated mechanisms if and when the institutional environment in Russia improves.[13]

The White Paper also identifies several other general constraints for investment that do not receive sufficient attention in the policy recommendations, given its specialized focus. However, in a broader context, the following constraints and additional areas of analysis bear mentioning:

**Infrastructure:** The relationship between infrastructure and the level of exploration in Russia compared to other countries, including Canada, should be analyzed. A comparison of the level of government compensation and incentives to mining companies for improving infrastructure would be useful.

**Financial Development:** The White Paper may underestimate financial development as a constraint if one considers the fact that the resource sector accounts for a large part of the Canadian stock market and the key role played by foreign direct investment (the White Paper states that U.S. investment alone is 40% of the market in Canada). While most of the activity aiming at developing Russia's financial markets and financial system in general is now concentrated within the "Moscow International Financial Centre" project, further analysis might delve into more specific recommendations in this respect as well.

In particular, given the prominence given in the White Paper to the specialized natural resources stock exchange in Toronto, the White Paper does not specifically take a view on whether Russia needs to establish such an exchange and does not provide recommendations on what can/should be done to make such an exchange successful. This no doubt presents an opportunity for further study and consideration.

Another important aspect of financial development is financing of junior exploration companies and service companies. In Russia, one could explore venture capital and private equity financing through existing government-backed instruments – the Russian Venture Company's venture funds, the Bortnik Foundation, and possibly the Russian Direct Investment Fund.[14] Issues related to the latter Fund are especially important since it is still being created and the government is actively seeking advice on how it should be structured and what transactions it should participate in.

**Labor Mobility and Human Capital:** Another constraint that does not receive sufficient attention is labor market mobility or lack thereof. An additional but related concern is the significant human capital support needed to maintain professional standards in assessing the value of a mining claim. The lack of a professional pool of workers who support the standards may make adoption of stricter standards much more costly and possibly invite corruption.

**Regional Governments:** The White Paper speaks mostly about the state as a single entity. While the national government has the majority of control under the mining laws, both regional and local government cooperation play an important role, especially for relationships with indigenous groups.

**Environment:** The White Paper should also pay more attention to the issues concerning environmental protection and, more generally, land use regulations. These issues will be become very important as Russian society grows more environmentally conscious. Moreover, environmental issues are occasionally used as a pre-text for expropriating foreign investors.

## Priorities for Improving the Investment Climate

The White Paper makes clear that policy uncertainty, poorly structured property rights and financial development all hinder investment in Russia's mining

[13] Research on the gold rush in the mid to late nineteenth century in the U.S. demonstrates that the governance of miners paid much more attention to explicit standards about maintaining a claim rather than focusing on protecting existing claims. This evidence suggests that a single right per land plot may not be crucial while clear and predictable rules are necessary (Clay and Wright 2005).

[14] The fact that these institutions are government-backed will further ameliorate the concerns related to the Law on Strategic Investments.

industry. World Bank Investment Climate Surveys indicate that policy uncertainty is the number one constraint. Creating clear and predictable rules should indeed be a priority (Dollar et al, 2003, World Bank, 2011). Certain aspects of property rights reform should receive more priority than others. Historically, the right to transfer an exploration right or production right and the right to reasonably convert an exploration right into a production right both appear more important than the recommendation to grant a single exploration right for a particular plot.

A major instrument that can reduce uncertainties of the policies towards foreign investment and foreign trade that is not mentioned in the White Paper is the accession to the World Trade Organization (Aslund et al., 2010, ch. 3). WTO accession should be considered an important step toward more predictable government attitudes with respect to foreign investors and trade operations.

### Additional Comments

Russian political leaders favor modernization and movement toward a knowledge economy. The White Paper should more strongly emphasize that the modern mining industry is now a high-tech sector, requiring substantial R&D and advanced human capital. In this sense, development of the modern mining sector will contribute to modernization of the Russian economy.

The White Paper's call for clear and predictable business rules reinforces the argument that political, legal and administrative risks are a barrier to investment. At the same time, once investors have assumed these risks and have invested and successfully operate their mining operations, governments must be careful not to succumb to the temptation to over-tax or even consider expropriation as this will considerably increase the perception of higher risks. In support of this point, modern political economy literature (Besley and Persson, 2011, also see a survey in Guriev et al., 2009) emphasizes that many political risks are actually endogenous to availability of resource revenues.

The White Paper states that there is no evidence that leaving deposits in the ground in hopes of higher prices in the future is better than mining now. We agree, and we think this argument should be supported for two reasons: by definition, market prices contain information on the future value (which includes best guesses on future supply); and waiting to mine for higher prices is a risky strategy (by betting against the market) because high prices also lead to the development of alternative and competing uses, which is combined with the randomness and costliness of exploration.

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