Mining in rapid-growth economies
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Mining in rapid-growth economies
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Economic volatility has shaken up the commodities market. Immediately before the global financial crisis in 2008–09, the commodity market was booming, driven by strong global growth during 2003–06. New commodity demand from rapid-growth as well as developing countries, mainly driven by continued industrialization and rapid growth in per capita income, had given a strong boost to the mining industry. During the crisis, the market saw a steep decline in end demand and credit availability, followed by aggressive production cuts and cost-cutting measures being undertaken globally.

Correlating GDP growth with global commodity demand and pricing, it is evident that the global commodity market responded to the weak and volatile economic environment. Macroeconomic factors led to a severe setback in confidence, resulting in a steep drop in commodity demand and prices. However, around mid-2009, the swift and massive stimulus measures initiated by the respective central banks started to translate into real demand for

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**Definition of rapid-growth economies/markets**

EY has chosen 25 fast growing markets around the globe using the following criteria:

- proven strong growth and future potential
- size of economy and population
- strategic importance for business

These economies include: Argentina, Brazil, Chile, Colombia, Czech Republic, Egypt, Ghana, Greater China & Hong Kong, India, Indonesia, Kazakhstan, Korea, Malaysia, Mexico, Nigeria, Poland, Qatar, Russia, Saudi Arabia, South Africa, Thailand, Turkey, Ukraine, UAE and Vietnam.

For this report, we have chosen to focus on Africa, Latin America, Brazil, China, India and Russia.
resources. Global production improved steadily in 2010, with the initial strength of recovery being based on Chinese demand (which was riding on its own stimulus to infrastructure/investment). Developed economies also contributed to the recovery through stimulus packages. The rapid bounce back in demand triggered a healthy price recovery in commodities. However, the recovery, supported solely by stimulus measures, has been waning due to fiscal debt fears and continued sluggish economic growth. Macro factors, such as slower-than-expected growth in China, continuing debt problems in Europe and tightened credit conditions globally, have hurt commodity demand. Moreover, markets are anticipating oversupply for most of the major commodities. In response to this renewed weakness, commodity prices dipped again to nearly marginal cost levels in early 2013. These sharp movements are reflective of a high beta price environment for most mineral commodities and relatively high price volatility in recent times. This volatility has been accentuated by a definite shift in global trade patterns and pricing arrangements to short-term negotiation/price adjustment cycles from a more long-term approach.

**Cost inflation spiral**

A decade of high prices has concealed the impact of rampant inflation, falling productivity and poor capital discipline in the sector. Fast growth in mining output fueled demand for mining services as well as for inputs, such as rubber tires, plastic pipes, chemical reagents, rock drills and haul trucks. The industry has been facing a shortage of skilled workforce that led to an increase in labor costs. For example, at the start of 2013, Australian mining wage rates had increased by 25% since 2008. Rising costs, coupled with weak prices, have driven the industry to undertake several cost-cutting measures. Despite this, cost inflation continues to be a challenge in 2013. According to Mexico-based Fresnillo, cost inflation is expected to increase by 7%-8% in 2013, against a rise of 3.1% last year. The inflation is fueled by higher costs for imported goods, such as explosives, and higher local costs, such as those for labor and diesel. According to Rio Tinto’s ex-CFO, Guy Elliott, “the miner’s cost base has risen by an average of US$2 billion a year since 2009.” The rising cost of production has had an impact on the margins of mining companies. For example, marginal cost of producing iron ore is about US$120-US$130/metric ton.

**Mining industry financials under stress**

Over the last few quarters, the overall slowdown in the global mining sector has forced large mining players to declare impairments. Investors have become wary of assets in high-risk or high-cost geographies. It has become extremely challenging for miners to keep investors engaged as they continue to seek high premiums on their investments because of the high-risk environment. For larger miners, the rapid decline in commodity prices in 2012 and failing returns have created a mismatch between miners’ long-term investment horizons and investors’ short-term return horizon. In the case of junior mining companies, the lack of access to capital is hurting their enterprise values and is even pushing some toward insolvency. The industry has also witnessed a large number of high-profile CEO exits within a short span.

**Capital raising and investments**

Such macroeconomic factors have brought about an impact on the broader markets and on mining stocks, in particular. Commodities’ prices have been a key driver of share price performance since 2003. High prices (and returns) in 2006–07 fueled the enthusiasm of investors. As a result, mining stocks outperformed broader indices during that period. However, with the advent of the financial crisis, there was sharp correction in commodity prices resulting in weak performance of metal sector indices.

![Mineral indices vs broader indices](image)

Source: Thomson DataStream

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In late 2009 and 2010, several governments rolled out fiscal measures to counter the dwindling demand. This created growth opportunities for the real estate and construction sector. The renewed interest in late 2009 and 1H10, due to improving investor sentiment, resulted in a recovery rally in metal indices. However, thin margins and increased uncertainty around the sustainability of the recovery since then has resulted in a volatile performance across mining indices. The investment climate has deteriorated, and access to entrepreneurial capital has worsened for the sector in the last couple of years.

### Capital raising (US$ million)

<table>
<thead>
<tr>
<th></th>
<th>2007</th>
<th>2008</th>
<th>2009</th>
<th>2010</th>
<th>2011</th>
<th>2012</th>
<th>9M13</th>
</tr>
</thead>
<tbody>
<tr>
<td>Loans</td>
<td>110,787</td>
<td>171,691</td>
<td>62,420</td>
<td>183,875</td>
<td>187,059</td>
<td>105,981</td>
<td>115,154</td>
</tr>
<tr>
<td>Bonds</td>
<td>36,358</td>
<td>38,146</td>
<td>61,016</td>
<td>72,502</td>
<td>83,804</td>
<td>112,539</td>
<td>68,188</td>
</tr>
<tr>
<td>Convertibles</td>
<td>12,865</td>
<td>12,238</td>
<td>14,431</td>
<td>5,477</td>
<td>2,365</td>
<td>3,537</td>
<td>6,151</td>
</tr>
<tr>
<td>Follow-ons</td>
<td>66,802</td>
<td>48,751</td>
<td>73,806</td>
<td>49,705</td>
<td>49,745</td>
<td>25,950</td>
<td>15,954</td>
</tr>
<tr>
<td>IPOs</td>
<td>21,400</td>
<td>12,406</td>
<td>2,987</td>
<td>17,948</td>
<td>17,449</td>
<td>1,388</td>
<td>626</td>
</tr>
</tbody>
</table>

Source: EY research
Since 2012, a new two-tiered trend has emerged. At one end, investment-grade producers are taking advantage of unprecedented demand in bond markets to raise record proceeds with historically low coupons. At the other end, the dramatic and continuing sell-off in equity markets has been having a critical impact on capital availability for the junior end of the market. As a result, advanced juniors and mid-tier producers were exposed to a fragile balancing act between investors’ demand for yield and their tolerance of risk. Risk capital had few takers in the market and, therefore, equity funding became both difficult and expensive to access. Many juniors continued to pursue equity issues in the absence of affordable or accessible alternatives, as is illustrated by the continued strength of volume of follow-on issues in 2012. Major producers, on the other hand, had another story to tell. Demand for investment-grade debt in 2012 enabled companies to issue new debt at yields near or below the level at which their existing debt was trading. Mining and metals companies took advantage of this demand, raising US$113b of investment-grade debt for the repurchase of existing bonds, locking in lower coupons and extending maturities.

In 2013, the capital-raising environment is marked by volatility, along with the prospect of rising interest rates in the US, signaling the possibility of a shift in investor preferences back to equities from fixed income. Global mining and metals equities fell steeply over 1H13, reflecting a lack of investor confidence both in the global demand outlook and in companies’ ability to deliver acceptable returns. The bond market, on the other hand, is at the opposite end of the spectrum, as the industry’s investment-grade companies continue to enjoy strong investor demand and are pricing issues on extremely competitive terms. Freeport-McMoRan Copper & Gold’s massive US$6.5b bond program to fund its oil and gas acquisition is a case in point. Bond proceeds raised in 1H13 have fallen 12% y-o-y; nevertheless, they remain high at US$50b. Rio Tinto responded to the market conditions with its US$3b of bond issues in June by opting for shorter tenors (less than five years) and including floating rate tranches, reportedly to satisfy changed demand from investors keen to avoid being locked in to low rates.\(^5\) For juniors, however, the withdrawal of equity capital has resulted in increased difficulty in accessing and raising capital. EY’s Mining Eye index, which tracks AIM-listed junior miners, continued its steep downward trajectory, losing 21% over 2Q13 and 34% over 1H13. Unfortunately, many juniors are struggling to raise any equity at all. Globally, equity proceeds raised by juniors over 1H13 nearly halved y-o-y to US$2.9b, with average proceeds falling to just US$1.6m.

However, the index and capital-raising trends clearly indicate the continued support of assets in rapid-growth and developing countries.

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\(^5\) Rio Tinto surprises US high-grade market with 5-part deal, Reuters, 14 June 2013.
Investment funds have been directed toward frontier markets such as African countries (the DRC, Namibia, Sierra Leone, Cote d'Ivoire, etc.). Kazakhstan, Argentina and Papua New Guinea also attracted deal flow. In 2012, there were 134 deals targeting assets in frontier nations with a total value of US$14.7b. The top destinations by value were the DRC, Namibia and Kazakhstan, while Argentina, Namibia and Tanzania received the greatest number of deals. Companies from Canada and Australia were the most active acquirers, undertaking almost half of the frontier deals. In the case of Africa, while resource nationalism continues to be a big issue for investors, we observe many frontier countries revisiting royalties and tax regimes to attract foreign investors.

**Change in global share of deals by value (2012 over 2011)**

<table>
<thead>
<tr>
<th>Country</th>
<th>Change in global share by value (%)</th>
<th>Change in global share by volume (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Africa</td>
<td>75</td>
<td>85.7</td>
</tr>
<tr>
<td>Latin America</td>
<td>14.3</td>
<td>0</td>
</tr>
<tr>
<td>Australia</td>
<td>-37.5</td>
<td>4</td>
</tr>
<tr>
<td>Canada</td>
<td>0</td>
<td>-14</td>
</tr>
<tr>
<td>China</td>
<td>133</td>
<td>33</td>
</tr>
<tr>
<td>US</td>
<td>-77</td>
<td>0</td>
</tr>
<tr>
<td>Russia</td>
<td>-68.8</td>
<td>0</td>
</tr>
</tbody>
</table>

Source: EY research

Clearly, rapid-growth countries and regions, such as China, Africa and Latin America, increased their share of global deals in the mining and metals sector. Meanwhile, developed countries, such as Australia, Canada and the US, witnessed a fall in their global share of deals in the sector during 2012 as against 2011.

Funds are expected to be increasingly directed toward rapid-growth countries as quality resources in developed countries are depleting, while those in rapid-growth and frontier markets offer growth opportunities with good-quality resources.
Rapid-growth markets have played a significant role in the global mining and metals sector, particularly in the last decade. The minerals price boom in the last decade (most specifically during 2003-08) was primarily due to global demand for minerals from these markets.

Of equal significance is the contribution of these economies to the global supply of various minerals. Growth of global minerals supply from rapid-growth economies has far outweighed the supply from developed economies. They have effectively accounted for all of the global production growth of aluminium, copper and steel during this period.6

Rapid-growth economies’ share in minerals supply has increased at a higher rate than supply from developed economies. For example, during 1960-2000, Australia gained a 38% market share in bauxite and about 15% in uranium, iron ore and nickel. It also gained market share in a number of other commodities, such as gold, coal and copper. However, during 2000-10, while global production of these minerals grew, Australia's market share of production either declined or remained nearly stagnant.7

The charts demonstrate production of some of the major commodities by the top 10 producers in 2012 and the annual growth in the production of the respective minerals in the last 10 years.

Exploration trends

To meet rising global demand for minerals, and hence to expand their reserve base, rapid-growth economies have witnessed incremental spend on exploration in the last decade. Thus, their share of total exploration expenditure (both domestic and inbound) has increased from about 40% at the beginning of the decade to about 60% in recent years.

Growth in exploration expenditure suggests that rapid-growth markets remain the focus of mining companies for new finds. It also indicates the trend of future production, though the success rate in terms of discovery of large mines still remains very low. According to the Colorado School of Mines, it takes 500–1,000 grassroots exploration projects to identify 100 targets for advanced exploration. Of these, 10 turn into development projects and only 1 becomes a profitable mine.8

Latin America and Africa take the lion’s share9

In 2012, Latin America was the most popular global exploration spending destination, accounting for a 25% share, mostly targeted toward gold exploration. Base metals’ exploration spend reported the smallest share since the late 1990s. Latin American countries that attracted the maximum spending were Mexico, Chile, Peru, Brazil, Argentina and Colombia.

Africa’s share of global exploration spending rose to 17%, making it the second-most preferred destination for exploration in 2012, up from its third position last year. The region saw the second-largest increase in exploration spending in both percentage and dollar terms. As is the case with Latin America, gold attracted the largest dollar increase in exploration spend allocation. In contrast, exploration expenditure allocated for diamonds fell for the sixth consecutive year. For other targets, planned expenditure increased during the year. The Democratic Republic of Congo (DRC) was the most preferred destination for exploration spending in Africa for the second time in the last three years.

Exploration in other large economies such as China and Russia, which accounted for the major portion of the fourth largest exploration budget, was focused on base metals (such as copper and nickel) and not on gold as was seen earlier.

Among other major mining regions, Canada (accounting for 16% of the total global budget) fell from its second position to the third in 2012. Australia accounted for only 12% of global exploration expenditure, down from 13% in 2011.

M&A trend in rapid growth economies

Rapid-growth markets have accounted for a significant portion of inbound M&A deals in mining and metals, as shown in the chart below, with the share of M&A deals targeting assets in these economies rising during 2007–12.

Africa had accounted for a meagre 3% of M&A deals in 2007 before it leapt to 19% by 2012. Similarly, Latin America’s share went up from about 8% in 2007 to 13% by 2012.

Source: Metals Economics Group, World Exploration Trends 2013
In 2012, companies were wary of high-risk countries. As such, deals appeared to be harder to justify amid greater shareholder scrutiny on capital allocation. As a result, M&A activity across frontier regions tended to be conducted by Chinese State-owned enterprises (SOEs) for resource security. Rapid-growth economies hold the promise of robust demand, based on an emerging middle class, and are also home to tier-one mineral assets. Competition has greatly intensified, particularly among BRIC and rapid-growth market players, which are being backed with strong and steady support from their respective governments. The DRC, Sierra Leone and Namibia followed South Africa as the leading African destinations and were primarily targeted by Chinese SOEs for copper, iron ore and uranium, respectively.

Inbound M&A in Latin America was subdued by intense community opposition to mining, large capital cost blowouts, water and energy constraints and growing protectionism across the region.

Increasing demand for raw materials in the Asia-Pacific Region drove Asian acquirers overseas to secure supply, with China and Japan emerging as the most acquisitive countries in 2012. Asian SOEs and trading houses dominated this outbound activity. China, Japan and South Korea, together, accounted for over a third (37% or US$39b) of the global deal value in 2012.

Significant mineral reserves in rapid-growth economies

The growth in production from rapid-growth economies is supported by the minerals reserve base within these economies. Rapid-growth economies hold almost all of the mineral reserves of platinum group metals (PGMs) (98%) and tin (95%). They also hold the majority of mineral reserves for other commodities. However, the existence of mineral reserves may not translate into proportionate mineral production, as players continue to face many challenges in bringing a mineral deposit to production. Nevertheless, it is indicative of the mineral potential of a region.

Global distribution of mineral reserves in 2012

Source: United States Geological Survey
Major factors shifting mining to rapid-growth economies

The development of mineral resources in rapid-growth economies had been a challenge in the past due to a number of factors, many of which continue to exist. Rapid-growth economies do not have well-developed exploration practices, and they lack strong geological information, sufficient infrastructure to support mining, and clear and well-developed mining and government policies. Their capital markets are underdeveloped and foreign investors are wary of high risks. Nevertheless, these economies are increasingly becoming better positioned. Huge mining investments have been made in rapid-growth markets. The trend is set to continue in the longer term, despite some recent risk aversion. Some of the factors that have led to the growth of the mining sector in rapid-growth markets are as follows.

**Commodity demand and price boom:** Mining companies have continued to seek large tier-one assets in rapid-growth markets, as these have been depleting in the developed world. Moreover, the resource boom of 2003-08 (driven by rising demand from rapid growth economies) and the consequent rise in mineral prices have made the development of these untapped mineral resources viable in rapid-growth markets.

Elevated minerals prices have also strengthened the balance sheet of mining companies, enabling investment in riskier projects. The availability of cheap labor in these markets has helped limit costs.

**Liberalization of mineral policies:** On their part, rapid-growth economies have opened up large tracts of land to foreign investors and have improved their policy settings and institutions. For example, Chile (in early 80s), Peru (in early 90s) and the DRC (in early 2000) implemented important investment reforms, which led to significant growth in the respective countries’ copper production. For example, the DRC implemented a new minerals code in 2002 that provided a transparent framework for the exploration and development of mineral resources.

As countries opened up their economies, domestic mining companies were no longer tightly controlled by the state and were able to acquire new skills, better manage their operations and easily access capital. Being state controlled, these companies also had access to attractive mineral deposits and knew how to work with the government to enhance their own growth prospects.

**Advances in technology:** Increased technological uptake has enabled effective exploration, viable processing of low-grade and complex minerals, as well as safer mining operations. For example, new technology has made processing of high-carbonate uranium in Kazakhstan cheaper and quicker. In addition it has increased the effectiveness of exploration and has allowed operations in previously unpenetrated areas. Such techniques have been used to great effect in regions like Mongolia.

Resource-hungry China has made significant investments in other rapid-growth markets: China consumes almost a quarter of the world's base metals supplies and almost 45% of the global steel. To secure its raw material supply, China has made aggressive greenfield investments in mineral resources globally — both in rapid-growth and developed markets. Backed by the Government, Chinese companies have been more aggressive in investing in rapid-growth market countries than companies from other mineral-rich countries. Adding to this, the new leadership in China, in its 12th Five-Year Plan, has further emphasized the acceleration of China's “Going Global” strategy for resource security and technological know-how, and vertical integration focused on both ends of the value chain (higher value-add downstream production and mining).

Key challenges in rapid-growth markets

Despite the large potential of the rapid-growth economies, it is difficult to ignore the challenges associated with investing in these markets. Miners in the rapid-growth markets are finding it harder to secure capital as investors become more risk averse and increasingly conservative around their portfolios. The key challenges faced in rapid-growth markets are explained as follows.

- **Corruption**: Rapid-growth markets usually rank further down Transparency International’s Corruption Perceptions Index 2012, with Brazil ranking 69th among 174 countries, China 80th and Russia 133rd. Regions with less stringent laws can see heightened exposure of miners to government patronage of third-party agents, vendors or job applicants.

- **Resource nationalism**: Rising taxes and royalties, mandated beneficiation, government ownership and the restriction of exports is prolific and spreading, with these policies often hindering investment in these markets. The Fraser Institute's Policy Potential Index (PPI) 2012/2013, which surveys mining and exploration companies to assess how mineral endowments and public policy factors, such as taxation and regulation, affect exploration investment, has registered a decrease in Africa's PPI score, while China scores a low 28%, Russia 27% and India 21%.

- **Access to infrastructure**: With mining and metals companies turning to new deposits in frontier countries, the lack of infrastructure is a substantial hurdle. High costs and capital constraints are creating an infrastructure funding gap where neither governments nor miners are able to fund all of infrastructure needs.

- **Social license to operate**: Activists have become more vocal through the use of social media about concerns over climate change, competition for water and the impact mining has on communities. Meanwhile, regulators are increasingly seeking to fill the gap between community expectations and existing laws with increased regulation.

- **Sharing the spoils**: Stakeholders are increasing their call for a bigger piece of the pie despite lower margins. This risk is characterized by a push and pull: more vocal stakeholders with increased demands versus falling commodity prices and higher costs.
Recommendations for stakeholders – governments and miners

- **Promote transparency and regulatory certainty**: With many of the rapid-growth markets ranking poorly on International Transparency’s global index, governments should create a transparent policy framework that encourages investment, and closely monitor the progress of every mining concession to ensure consistency of approach.

- **Fund exploration**: Governments should consider allocating funds to exploration agencies to encourage investment in the sector. The role of the private sector, particularly exploration experts, should be encouraged.

- **Reform mining taxation**: Governments should focus on taxation reforms to attract investment into the sector and retain current investments. Canada, Australia and the US have successfully introduced tax policy initiatives to attract investors in minerals exploration. This can be achieved by including incentives/concessions to undertake exploration and to create a competitive framework for taxes (resource tax, stamp duty, etc.).

- **Develop special mining regions and special purpose vehicles (SPVs)**: To circumvent continued challenges in land acquisition and environmental clearances, major mining hubs should be identified and SPV should be created for each hub. These SPVs could obtain the requisite clearances and link resources before inviting competitive bids to undertake the projects. Resources raised could be partially used to develop social and physical infrastructure, thus enabling efficient mining operations and meeting the community expectations of inclusive growth.

- **Create strategic alliances**: As mining companies progress deeper and into more remote areas, mining can become an increasingly complex and expensive operation. Also, grade depletion calls for technology innovation. It is also important to secure water, energy and suitable infrastructure. To gain access to these essentials and achieve economies of scale, mining companies can form strategic alliances with infrastructure players, technology and equipment providers, and financiers in innovative ways, such as through the PPP model.

- **Create an economic model for benefit sharing**: Stakeholders have continued to press for a larger share of the pie, without recognizing the need to make profits sustainable. An economic model should be designed such that benefits are fair to all stakeholders; this would include a good understanding of what creates value in the entire chain from mine to market.
### Africa

#### Challenges and key considerations
- Resource nationalism
- Shortages of skilled resources
- High level of HIV/AIDS
- Access to transport and utility infrastructure
- Regulatory and fiscal regimes – complying and operating in constantly evolving regulatory and fiscal environments
- Increased regulations around climate change in some countries
- Government/indigenous ownership
- Socioeconomic and social-political challenges - these can influence competitiveness, stability and performance of labor
- High cost of capital - the lack of developed capital markets could mean high cost of capital
- Drop in rankings - Africa’s average Policy Potential Index score declined further in the Fraser Institute’s 2012/2013 mining survey. Botswana (with rank of 17) is the only African country in the top 20 nations

#### Tax and regulatory landscape
The tax and regulatory requirements vary greatly across the continent

**Increasing resource nationalism** - this is a common driver of the tax agenda in many African countries, with notable exceptions, such as Mozambique and Botswana

**Royalty rates** - these vary and are often differentiated by commodity and/or by whether the company is domestic or inbound

**Tax deductions** - some countries are making significant efforts to increase international investment by offering tax deductions on research and development, export market development costs, and pre-production expenses

Recent changes to tax policy in the region:
- **DRC** - increased its tax on copper and cobalt concentrates from US$60 to US$100 per metric ton to increase domestic beneficiation
- **Gabon** - will introduce mandated beneficiation
- **Ghana** - introduced the National Fiscal Stabilisation Levy Bill that will impose a 5% tax on profits of mining companies
- **Mozambique** - is reportedly set to introduce a 32% capital gains tax on the sale of local assets by foreign countries from January 2014
- **Tanzania** - will introduce mandatory procurement of at least 80% of goods and services from local businesses by 2015

#### Growth and enabling factors
- **Vast mineral reserves** - the African continent accounts for nearly two-thirds of the world’s mineral reserves and more than half of the world’s mineral reserves for gold, platinum group metals, cobalt and diamonds. Africa also has one of the largest reserves of uranium, manganese and chromium in the world
- **Major minerals producer** - Africa produces more than 60 minerals and is a major producer of gold, platinum group metals, diamonds, uranium, manganese, nickel, bauxite, cobalt and chromium
- **High levels of exploration activity** - during the last few years, exploration activities across the African continent have significantly increased. In 2012, more than 17% of global exploration costs were incurred in Africa, with the DRC holding the top place for exploration spending in Africa. Of particular interest are the recent significant findings of copper, cobalt, thermal coal, metallurgical coal, iron ore, uranium, bauxite, gold and nickel deposits
- **Investment destination** - rapid-growth markets, such as China and India, are investing heavily in Africa to secure supply of minerals. Botswana’s favorable mineral investment climate, low tax rates and political stability are expected to continue to attract foreign mineral investment. It has some of the lowest tax rates in the region and there is little government interference in the mining sector
- **Investment-friendly policies** - many African countries are taking steps to encourage investment, e.g., Mozambique has pledged not to increase mining taxes
<table>
<thead>
<tr>
<th>Challenges and key considerations</th>
<th>The challenges faced in Latin America are typical of those in any rapid-growth market. Across the region, mining and metals companies face the following risks:</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Political and economic stability - by end-2014, 10 national elections will be held in Latin America, including Brazil, Argentina, Colombia and Chile, which will create uncertainty for the mining sector, particularly around tax policy</td>
<td></td>
</tr>
<tr>
<td>• Access to reliable sources of energy and water is the biggest challenge</td>
<td></td>
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<tr>
<td>• Lack of infrastructure</td>
<td></td>
</tr>
<tr>
<td>• Rise of resource nationalism - this results in increase in taxes and royalties (Argentina, Mexico), import restrictions (Argentina) and new mining reforms (Bolivia, Brazil)</td>
<td></td>
</tr>
<tr>
<td>• Disputes around land access and availability</td>
<td></td>
</tr>
<tr>
<td>• Increase in anti-mining sentiment - this sentiment is particularly seen around socio-environmental issues</td>
<td></td>
</tr>
<tr>
<td>• Government regulation and bureaucracy</td>
<td></td>
</tr>
<tr>
<td>• Corruption - a number of the Latin American countries rank further down Transparency International’s Corruptions Perceptions Index</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Tax and regulatory landscape</th>
<th>Recent changes to tax policy in the region:</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Bolivia - approved a first reading of a law, which will revoke state mining licenses that are considered “unproductive”</td>
<td></td>
</tr>
<tr>
<td>• Brazil - is increasing its royalty rate from the current 2% to 4%, but with the levy to be applied to gross sales rather than net profits – the change is expected to take place by the mid-2014</td>
<td></td>
</tr>
<tr>
<td>• Colombia - reduced the corporate income tax from 33% to 25%</td>
<td></td>
</tr>
<tr>
<td>• Mexico - announced a new mining royalty for holders of concessions – the 7.5% tax would be applied to a base of income before interest, taxes, depreciation and amortization, as defined by the income tax law. The rule would allow a deduction of exploration and development costs, and would allow a credit of other rights against the tax. The change is now pending final approval and signing by the country’s president</td>
<td></td>
</tr>
<tr>
<td>• Venezuela - is increasing prices for its mining exports in a bid to obtain a “fair price” from buyers</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Growth and enabling factors</th>
<th><strong>Exploration destination</strong> - Latin America is the most popular exploration destination, attracting 25% of global spending in 2012. Mexico, Chile, Peru, Brazil, Colombia and Argentina account for the bulk of this spend, with gold being the primary focus. Both Mexico and Peru offer significant Greenfields exploration opportunities.</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Top mining destination - Chile has consistently been ranked among the top mining destinations by Bovre Dolbear (rated third behind Australia and Canada in the countries promoting investment growth in the sector), and Transparency International ranked it 20th on its Corruptions Perceptions Index 2012</td>
<td></td>
</tr>
<tr>
<td>• Progressive mining policies - destinations such as Peru are pursuing progressive mining policies, such as formalizing informal miners and redistributing mining royalties to local communities</td>
<td></td>
</tr>
<tr>
<td>• Wealth of natural resources - Latin America produces over a third of total global copper, silver and iron ore production, and is one of the top destinations for inbound Chinese investment</td>
<td></td>
</tr>
</tbody>
</table>

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12. 2013 rankings for mining investments or where not to invest, Bovre Dolbear, 2013.
## Brazil

### Challenges and key considerations
- Bottlenecksed infrastructure
- Skills shortages
- Government regulation and bureaucracy – reduces the country's attractiveness to investment
- Tax policy – uncertainty around the country's tax regime with the delay in the recent tax policy and upcoming elections
- Corruption – ranks 69th on Transparency International's Corruption Perceptions Index 2012

### Tax and regulatory landscape
The fiscal regime that applies to the mining sector in Brazil consists of federal corporate income tax (CIT) and Government takes at the federal and state levels:
- **Corporate income tax** – 34% (including 9% of social contribution on net profit)
- **Capital allowances** – accelerated depreciation, capital uplift
- **Investment incentives** – tax losses can be carried forward indefinitely; research and development incentives; income tax incentives for companies investing in undeveloped areas (North and Northeast regions)
- **Federal royalties** – financial compensation for exploration of mineral resources (CFEM). Royalty-type levy of 0.2% to 3%, depending on the type of mineral extracted
- **State royalties** – control, monitoring and supervision of research activities, mining, exploration and exploitation of mineral resources fee (TFRM). Varies depending on the state where the mine is located. Generally a fixed amount, set by each state, based on the volume of mineral extracted
- **Withholding tax** – minimum 15% interest withholding tax. No dividend withholding tax
- **Landlord costs** – 50% of CFEM, due to the owner of the land
- **Annual fee per hectare** – BRL2.02 per hectare or BRL3.06 per hectare upon renewal of Prospecting Authorization License
- **Federal VAT on gross sales (PIS and COFINS)** – at a combined rate of 9.25%
- **State VAT on gross sales (ICMS)** – tax rate varies depending on the state
- **Tax reforms** – expected in Brazil to make it a more competitive and attractive investment destination

### Growth and enabling factors
- **2014 Football World Cup and 2016 Olympics** – these events will aid fast development of improved infrastructure and transportation links, which will have knock-on benefits for the mining sector
- **Mining code** – once this has been legislated and there is more certainty around the code, increased foreign direct investment is expected
- **Favorable lending rates** – Brazilian companies and entities developing assets in Brazil can source favorable rates from the National Development Bank, which is trying to encourage local development
## Mainland China

### Challenges and key considerations
- **Slowing GDP growth** - having grown at an average GDP rate of more than 10% over the last decade, the Chinese GDP growth has slowed to 7.8% as at 3Q 2013
- **Raw materials shortage** - China is short of important raw materials, such as iron ore and coal used in steel production and bauxite needed for aluminium production
- **Pollution reduction** - high levels of pollution areas across the region has seen the Government intervene to reduce pollution
- **Drop in rankings** - China registered the most significant drop in the Fraser Institute’s Policy Potential Index score in the 2012/2013 mining survey. China now ranks 72nd as compared to 58th in 2011/2012 mainly due to worsening perceptions amongst the survey respondents regarding the level of security and the uncertainty concerning environmental regulations
- **Domestic M&A activity muted** - most of the Chinese mining M&A landscape is dominated by Government-backed Chinese mining companies acquiring assets abroad, while Chinese domestic and in bound mining M&A activity remains lackluster

### Tax and regulatory landscape
The fiscal regime that applies to the mining and metals sector in China consists of value-added tax, resource tax, royalty/mining license tax, business tax and corporate income tax
- **Value added tax** - mining products taxed at rates of 0% (exempted), 13%, to 17%
- **Business tax** - from 3% to 20%
- **Resource tax** - applicable for all entities and individuals engaged in the exploitation of mineral resources or the production of salt
- **Income tax** - 25%
- **Investment incentives** - qualified research and development expenditure deductible at 150% of the actual expenses

### Growth and enabling factors
- **Go-Global Strategy** - an estimated US$116b is to be spent in the mining and metals sector in the next three years. Nine key industries, including steel, aluminium and rare earths, are mandated to go out and acquire rivals to create globally competitive mining companies. China has already announced plans to direct more capital to South and Central America and has started refocusing on African minerals
- **12th Five-Year Plan** - China intends to shift its focus from infrastructure-driven growth to consumption-driven growth
- **Top producing nation** - China controls more than half of steel, almost half of aluminium and over a third of all iron ore production. It is the world’s top gold producer and also controls most of the world’s rare earth production (95%).
- **Strong domestic demand** - China is the largest consumer of a number of minerals and metals in the world. It consumes around half of global steel and aluminium and is the top consumer of other processed metals such as copper and zinc. China is also the top consumer of coal and mineral ores such as iron ore, bauxite, copper and zinc which feed in to their respective processing industries. Changes to China’s supply and demand for these minerals and metals has the potential to materially alter global minerals and metals trade flows.
- **Top investor** - China was the most acquisitive nation in 2012 in value terms at US$21.7b

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### India

**Challenges and key considerations**
- Land access and availability
- Federal structure and cumbersome processes - stalling new concessions
- Under explored - very low exploration spend by the entrusted Government entities
- Corruption - India ranks 94th in Transparency International’s Corruption Perceptions Index 2012
- Policy delays - the national elections in mid-2014 could delay new policy decisions in the next few quarters

**Tax and regulatory landscape**
- Domestic company - 30%
- International company - 40%
- Applicable surcharge - Surcharge range from 0% to 10% of tax for domestic companies and 0% to 5% of tax for foreign companies depending upon the taxable income, and education levy of 3% on tax and surcharge
- Capital allowance - accelerated depreciation available for certain Plant and Machinery
- Investment incentives - loss carryforward; research and development

**Growth and enabling factors**
- Major minerals producer - India produces as many as 89 minerals, and among the major minerals, India is the 3rd, 4th, 5th and 6th largest producer of coal and lignite, iron ore, manganese and bauxite, respectively
- Infrastructure investment - in its 12th Five-Year Plan, India has announced plans to invest US$1t in infrastructure
- Growth potential - per capita consumption of most of the ferrous and non-ferrous metals is below global average, creating an opportunity for mining and metal majors
- Streamlined sector - the MMDR Bill approved by the Government in 2011 has undergone several modifications and is still awaiting enactment; its implementation could streamline many mining-related processes in the country

### Russia

**Challenges and key considerations**
- Cumbersome bureaucracy
- Corruption - Russia ranks 133rd in Transparency International’s Corruption Perceptions Index
- Challenging terrain - most of the country’s minerals wealth is located in remote and inhospitable areas of the country
- Poor energy infrastructure
- Limited allowable participation - the sector is deemed strategic for the country and restrictions apply to foreign investors and partners

**Tax and regulatory landscape**
- The fiscal regime that applies to Russia to the mining and metals industry consists of a combination of corporate income tax and royalties:
  - Income tax rate - corporate income tax rate of 20%
  - Capital allowances - depreciation premium applies
  - Investment incentives - loss carryforward
  - Royalties - mineral extraction tax and regular and one-time payments

**Growth and enabling factors**
- Well-developed domestic mining services and equipment industries
- Reliable transport infrastructure
- Government support - mining companies that commit to spend on improving rail and port infrastructure, particularly in the Siberian and Far Eastern regions, are likely to receive Government backing for their projects
- Major minerals producer - Russia is the second-largest producer of nickel and produces 40% of the world’s PGM. It ranks among the world’s top 10 mining jurisdictions for both production and reserves, with huge subsoil resources. It holds an estimated 15% to 17% of the world’s mineral deposits

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With a volatile outlook for mining and metals, the global sector is focused on cost optimization and productivity improvement, while poised for value-based growth opportunities as they arise. The sector also faces the increased challenges of changing expectations in the maintenance of its social license to operate, skills shortages, effectively executing capital projects and meeting government revenue expectations. EY’s Global Mining & Metals Center brings together a worldwide team of professionals to help you succeed – a team with deep technical experience in providing assurance, tax, transactions and advisory services to the mining and metals sector. The Center is where people and ideas come together to help mining and metals companies meet the issues of today and anticipate those of tomorrow. Ultimately it enables us to help you meet your goals and compete more effectively.

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