

Mine 2011

The game has changed

Review of global trends
in the mining industry



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01

Executive summary



Welcome to PwC's eighth annual review of global trends in the mining industry—Mine. These reviews provide a comprehensive analysis of the financial performance and position of the global mining industry as represented by the Top 40 mining companies by market capitalisation.

Last year we highlighted the growing optimism in the mining industry and demand fundamentals that were driving the industry back to boom times. The 2010 results have delivered on this expectation, but it is clear that *the game has changed*.

The mining industry has entered a new era. Demand continues to be stoked by strong growth in emerging markets. Supply is increasingly constrained, as development projects become more complex and are typically in more remote, unfamiliar territory. The cost base of the industry has permanently changed as lower grades and shortages of labour take effect.

To keep up with demand, the Top 40 have announced more than \$300 billion of capital programs with over \$120 billion planned for 2011, more than double the total 2010 spend.

While not all will be completed, the sheer size and volume of the announced capital projects demonstrates an industry where fulfilling seemingly insatiable demand is the top priority.

In 2010, despite tones of cautious optimism from CEOs and short-term fluctuations in the market caused by instability across many areas of the globe, the financial results for the Top 40 were spectacular:

- Revenues increased 32% – breaking \$400 billion for the first time
- Net profit was up 156% to \$110 billion
- Operating cash flows grew 59%, leaving more than \$100 billion cash on hand at year end
- Total assets approached \$1 trillion
- Net debt reduced to \$46 billion, resulting in gearing of only 8%

However, while commodity prices have increased the margins achieved in the past year are still below the highs of 2006 and 2007.

Investment in new supply is increasingly focused on emerging markets, and by new faces, as customers and governments enter the industry with the primary goal of securing supply.

Vertical integration into mining by customers that prioritise certainty of supply over cost, will bring additional supply online from non-Tier one assets. The cost curve has shifted and commodity prices have permanently moved higher.

Production for 2010 increased by 5% overall with the benefits of expansion through the global financial crisis being realised by those who continued to invest through the cycle.

Emerging markets continue to change the face of the mining industry. One sign is the average Total Shareholder Return (TSR) of companies from emerging markets in the Top 40 more than doubling the return from the 'traditional' mining countries over the past four years.

Overall the market capitalisation has increased by 26%. While some have expressed concern that the market capitalisation of the industry has increased too fast and too much; the jump is attributable largely to balance sheet growth following 2010's stellar results.

The outlook expressed by industry leaders is increasingly positive, with companies taking definitive action on capital projects, as well as mergers and acquisitions. In a *view from the top*, the CEOs note their continuing belief in emerging markets, particularly the ongoing growth in China and the nation's ability to achieve or exceed the 7% growth target outlined in the 12th Five Year Plan. Resource nationalism and stakeholder management occupy a higher degree of attention from the CEOs, as does the ever increasing complexity and sophistication in the industry.

With mining continuing to climb up the political priority list at a time of budget deficits and changing economic and social priorities, many governments are looking at reforms to their mining codes, grappling with sustainability issues and revisiting their approach to taxation and royalties. In *what's mine is mine* we are joined by Eurasia Group, which has provided an overview of a number of the key drivers for these trends in light of a growing focus on corporate transparency and the interplay between corporates and society.

These are interesting times for the mining industry, with ever increasing scrutiny from governments, customers and other stakeholders. Growing demand for its products, driven by emerging markets, highlights that supply will be the most significant challenge it will face. The shift in balance is a positive one for the mining industry, but it will not be simple and will take some managing. All of this highlights that *the game has changed*.

We trust you will find this year's publication informative and encourage you to send us your feedback.



Tim Goldsmith
PwC Global Mining Leader
Mine Project Leader

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Industry in perspective





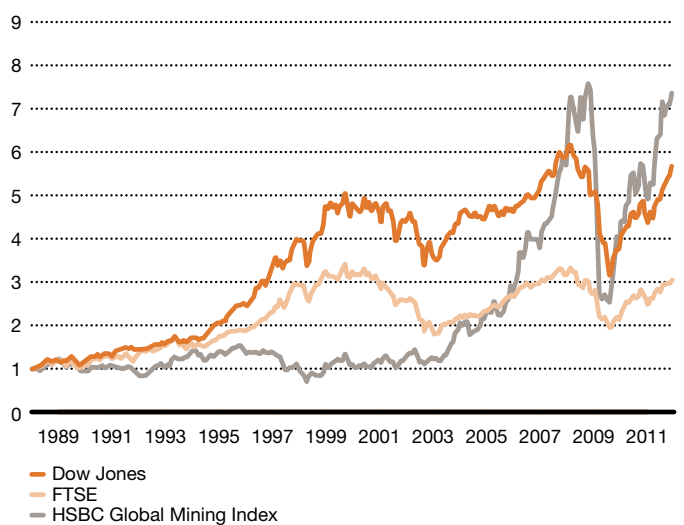
Game-changing trends

Over the course of the last year, global economic and political trends have changed the industry. The mining industry finds itself in a new era and there is no turning back. Emerging markets are leading bullish long-term demand projections while supply remains constrained, with challenges such as declining grade and more remote locations. The cost curve has shifted up, continuing to put pressure on the industry to maintain financial discipline. New players are emerging and the industry is receiving more attention from its many and varied stakeholders. *The game has changed* in the mining industry.

Leading the way

Mining companies have continued to outperform the overall market, as consumer sectors dependant on demand from developed economies struggled to recover. While the industry was hit hard by the global financial crisis, mining companies have led the return and gone beyond.

Global indices (February 1989=1)



Source: Bloomberg.

2010 saw real tension in the market as growth rebounded, offset by a number of incidents that kept caution and risk on the agenda. Emerging countries continued to storm ahead, with demand for resources driven by strong GDP growth, including close to 10% growth in China.

These results were achieved against a backdrop of natural disasters, including the Chilean earthquake and floods in Australia. Political pressure increased with reviews of

mining and taxation laws and government intervention influencing deals in a number of mining countries such as Australia, Canada and South Africa. The tension in the Middle East and continuing concern about European sovereign debt have also weighed on markets.

Market cap is (almost) back

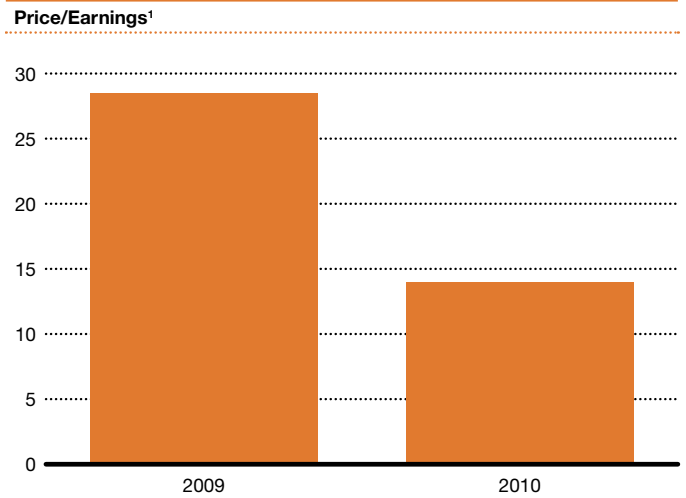
Mining market capitalisation continued to rebound in 2010, with many players recovering the remaining market capitalisation lost during the global financial crisis and surpassing the level seen at the end of 2007.

The total year end market capitalisation of the Top 40 increased by 26%, with larger gains generally achieved by the smaller companies. This made it tougher to be included in the Top 40, with the market capitalisation required to make the list increasing from \$6.5 billion in 2009 to \$11.0 billion in 2010.

Undervalued industry?

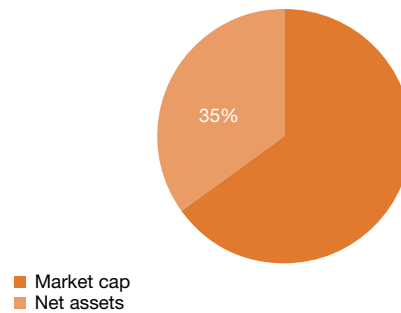
The Price to Earnings (P/E) multiple for the Top 40 has declined in 2010 as profit growth has well exceeded the increase in market capitalisation. We note that the 2009 P/E was unusually high due to historical earnings being impacted by impairment charges and lower commodity prices, while market capitalisation is forward looking.

Some commentators have questioned the sustainability of the rise in the share prices of mining companies. A comparison of net assets to the market capitalisation of the Top 40 shows that net assets have remained at 35% of market capitalisation, demonstrating that market capitalisation has only increased by the profits the industry has generated and retained in 2010.



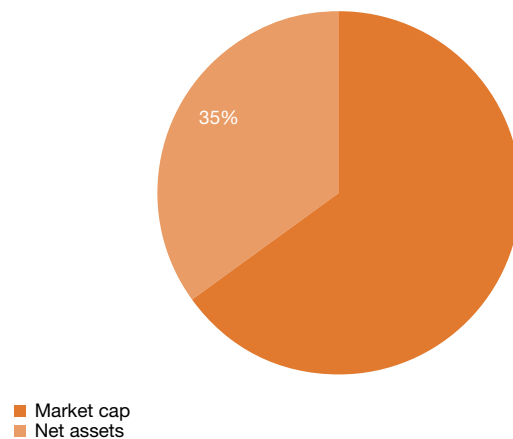
Source: Capital IQ, Bloomberg, PwC analysis.
¹Price/Earnings is computed by dividing market capitalisation by profits.

2009 Net assets as % of Market Capitalisation



Source: Capital IQ, Bloomberg, PwC analysis.

2010 Net assets as % of Market Capitalisation

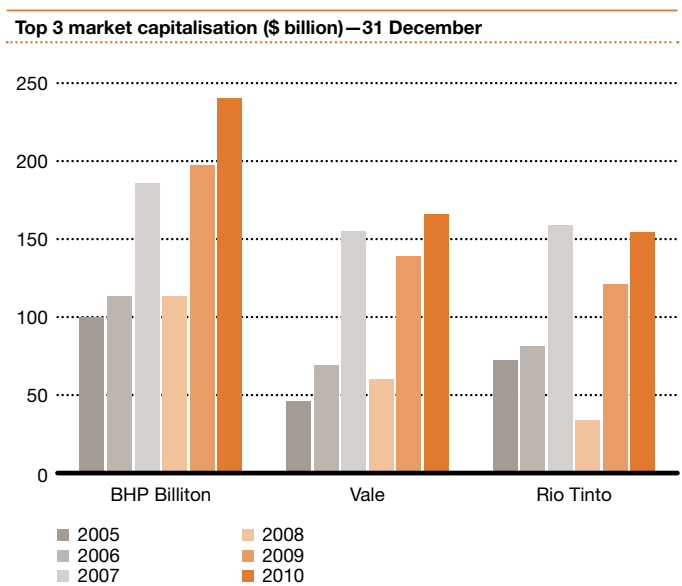


Source: Capital IQ, Bloomberg, PwC analysis.



The super majors step out

During 2010 we saw the top three miners (BHP Billiton, Vale and Rio Tinto) step clear of the rest of the industry. The market capitalisation of third place Rio Tinto is double the size of the next largest player, China Shenhua, which declined 25% in value during 2010. At the top, BHP Billiton's market capitalisation further strengthened, putting it clearly above the rest. Price and production increases in iron ore were major drivers of the growth by the top three.



Source: Capital IQ.

The drive for growth

Strengthening demand for primary resources, predominantly from emerging economies, has been the big story for 2010. End user need for minerals shows no sign of letting up, especially given the targeted 7% GDP growth included in China's recently released 12th Five Year Plan. The plan included significant infrastructure spend, such as the construction of 30,000 km of new railway line.

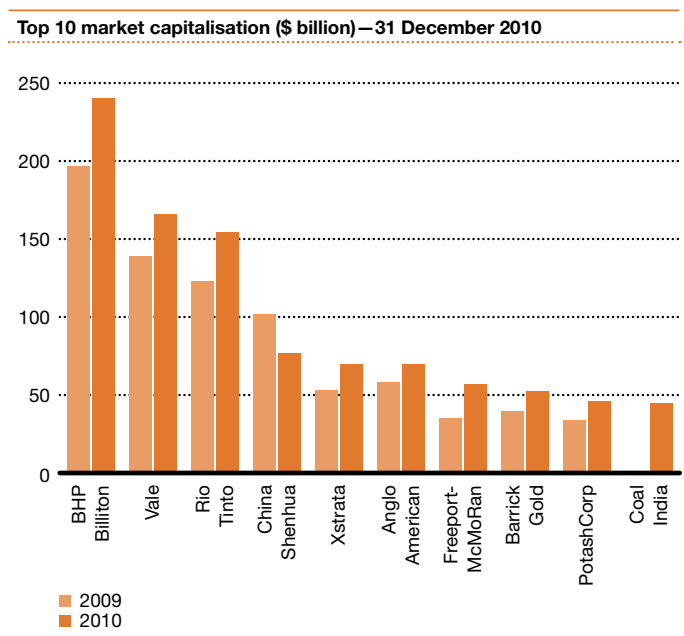
At the same time, there is the challenge of declining extraction grades, more geographically remote and/or politically challenging regions and the increasing scale of projects required to generate economic returns. Supplying sufficient resources to meet the growing demand is a key challenge for the industry.

The world continues to need raw materials and mining companies' results show this. However, with pressures from a growing number of stakeholders on how to distribute the benefits, miners have the challenge of delivering on their social commitments and ensuring their contributions are both appropriate and properly understood.

Key players

The Top 40 for 2010 saw four companies rejoin the list and three first time entrants. The newly listed Coal India was the largest new entrant, following its IPO in October 2010. There has been less volatility in 2010, with only two companies more than doubling their market capitalisation and just four decreasing; the largest decrease being 32% by NMDC. Interestingly all four of the decreases were Indian or Chinese companies.

Glencore has recently completed its listing in London and Hong Kong, creating many headlines in the process. The move by traders, steel companies and others to acquire mining assets makes it more challenging each year to determine who the Top 40 mining companies are.



Source: Capital IQ.

Reliable performance

Strong demand has made 2010 a stand out year for the mining industry. Across the Top 40 there was a cumulative 32% increase in revenues, a 72% increase in adjusted EBITDA and a 156% increase in net profit.

Much of the industry’s good news has been achieved through a combination of commodity price and production increases. Many analysts would argue that in 2010 the Top 40 were simply in the right market at the right time. However, if it is luck, fortune has most greatly rewarded those who invested through the cycle, as the value from large capital spend by these companies is reaping rewards.

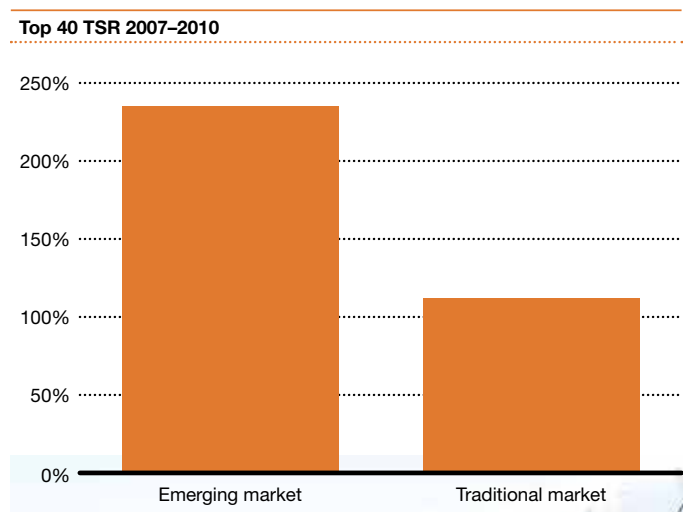
Financial discipline and management of costs will be important in 2011, while companies continue to drive their operations to maximise production and returns.

The evolving market

The challenge for mining companies in a resurgent market is to demonstrate that they made the right choices during the financial crisis and that they are able to take advantage of the upside potential of the industry. Four-year Total Shareholder Return (TSR) data through 2010 shows mostly impressive, although uneven, returns from the sector.

In 2010, there were a number of players that greatly benefited from volatility in commodity markets, notably copper and silver, with companies like Silver Wheaton showing an impressive 160% one year TSR.

The difference in returns between emerging market producers and those from traditional countries widened in 2010. The four year TSR for emerging market players more than doubled the returns of companies from traditional mining countries. This outperformance links to the wider economic story of faster growth in emerging markets. Even though companies from traditional mining countries hold assets around the world, emerging market players have still outperformed.

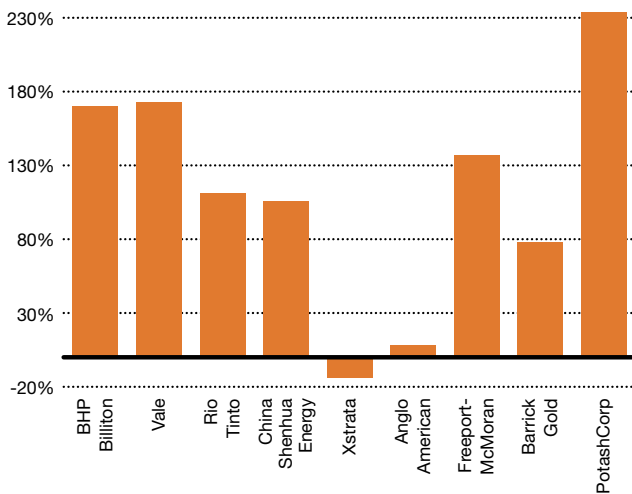


Source: Bloomberg and PwC analysis.



The 2010 four year TSR for the Top 10 mining companies (excluding Coal India which listed in 2010) provides insight into challenging performance stories. While a four-year period is arguably a short time frame for the industry, we have seen the highs and lows of a commodity cycle, albeit a short one, during this period. The results show the importance of holding Tier one assets and being the leader in chosen markets.

Top 10 TSR 2007–2010



Note: Coal India figures are excluded due to lack of comparative data as it has only listed in 2010.
Source: Bloomberg and PwC analysis.

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The state of Silver

Silver made headlines in 2010 and Silver Wheaton had the highest one year TSR of the Top 40. Investor interest in a minor metal, commonly considered a by-product by most miners was enormous. This reinforces the story that commodity markets have become more dynamic in the last year.

The formation of silver ETFs five years ago has clearly driven new interest in the market. From May 2006 to early 2011, the largest of these (iShares Silver Trust) moved from holding just over 600 tonnes to over 11,000 tonnes of silver.

Much of the rise in the price of silver has been on the back of speculation, although there are some growing commercial uses, such as the importance of silver in solar cells. It is clear, however, that ETF's are playing an increasing role in the volatile silver market—indeed at the time of writing this volatility has caused significant price fluctuations. Understanding how financial investors will act is increasingly as important as understanding demand and supply characteristics in the short-term.



Emergence of Sovereign Wealth Funds (SWFs)

It is not new for SWFs to invest in the resources sector. Several of the largest funds (notably from the United Arab Emirates, Norway and Kuwait) were set up with oil money, and have not been shy to invest in commodities-based businesses, although historically mostly in the oil sector. What is relatively new is that non-commodity SWFs have begun to invest heavily in mining – either through a desire to diversify their portfolios, taking advantage of the under-valued resources sector or, perhaps more importantly, to secure supply of commodities for their home markets.

For some, SWFs have been both a stable source of capital, with longer investment horizons than most, and strategic partners. This can be seen in China Investment Corporation's ("CIC") investments in Teck Resources and Bumi Resources, both of whom sell much of their production to China.

Mining companies should consider the perception of political overtones around some SWF investments. With operations becoming more geographically spread, often in locations with limited democracy and immature or evolving governance systems, SWFs may be seen to be leading the charge for foreign governments in securing resources. The game has indeed changed.



Citizens of the world

The mining industry has increased its focus on stakeholder management in response to growing pressure on executives. There has been broad agreement that cooperation between the public sector, private sector and society is needed to deliver equitable returns for all.

In many cases the mining sector is at the forefront of much of this debate, reflecting the attitudes of the companies and pressure from stakeholders in the regions in which they operate. More than ever, companies need to deliver benefits to local communities, which increases the onus to demonstrate leadership through transparency in reporting, corporate values and direct contributions.

For example, in 2010 the International Integrated Reporting Committee (IIRC) was formed in an effort to strengthen reporting and address all stakeholder needs. We believe there is still work to be done in terms of improving reporting. Our analysis revealed significant differences between the reporting by companies from emerging and traditional markets when it came to matters such as water and energy consumption, pollution and social investment. For many companies from the emerging markets there was little or no information available, whereas for the traditional players comparability is challenging due to differences in methodologies applied and measures used.



Disclosing government payments

'Pay your fair share', 'Publish What You Pay', 'Extractive Industry Transparency Initiative', 'Dodd-Frank Tax and Royalty Disclosure Rules' – all of these thoughts, ideas and rules embody similar concepts: do the payments mining companies make to governments contribute to sustainability, fairness and transparency?

Various voluntary initiatives are now in play, followed by upcoming rules-based disclosure standards, for example, in the Dodd-Frank Act in the US that was enacted in July 2010. We have heard from mining industry leaders that gathering this data is difficult.

In what format should the data be disclosed?

Will this data be comparable amongst mining companies and between countries?

Mining company leaders face a long road to balance the consistency and data integrity aspects

with fair and accurate disclosures, to accomplish the transparency that stakeholders are requesting.

As governments continue to implement active changes to laws surrounding taxation, royalties and disclosures, mining companies should continue to consider political environments when making investment decisions. We expect continuing focus and discussion to come in this area in the near term as mining companies gather and report, in varying forms, the data that stakeholders demand.

03

A view from the top





As in prior years, we have discussed the future of the mining industry with CEOs of a number of the Top 40 companies. This article summarises those views.

First and foremost, the CEOs hold a higher degree of confidence in the future than we have seen in the last few years. It is not only the CEOs' words which show this, but also their willingness to commit substantial capital to fund the expansion of major mineral regions. We've also seen 2011 start in an active merger and acquisition environment, and whilst mega deals are not yet coming through, most other types of transactions are common place.

The CEOs continue to believe in the emerging markets story and particularly the ongoing growth in China – 30 years of achieving its targets and Five Year Plans has convinced the miners that the likelihood of the 12th Five Year Plan being successfully achieved is high. They point to the 7% growth target as being the floor not the ceiling and support this with results from recent history. By any measure, adding this level of supply year in year out is both a significant challenge and opportunity for the industry.

Most point to China as the short-term driver of the industry; at the same time, they talk of the other rapidly growing economies such as India, Indonesia and Brazil contributing to increased mineral demand. Other positive macro-economic developments include the recovering US economy, which remains a major mineral consumer, and the demand generated by the rebuilding of part of Japan.

While confidence in the future of the global economy has grown, risk remains. Growth in Europe remains sluggish and sovereign debt issues do not seem to be fully flushed through the system. In addition, the political unrest moving through the Middle East and the impact of the earthquake and tsunami in Japan are examples of black swan events to which CEOs have had to respond. They are becoming accustomed to expecting the unexpected and have focussed on increasing organisational flexibility to be able to respond more quickly to the volatility generated by such events.

As the mining industry is a long-term game, CEOs see their role as looking through the short-term blips that may occur and planning for the long-term. There is a consistent view that commodity demand in the long-term will be strong and the CEOs want to position their companies to benefit.

While the majors will always be looking to acquire assets, the view of the CEOs we spoke to was that

building was better than buying at the current time. In fact, if you take that one step further, expanding rather than building is seen as the most cost effective and easiest way to grow. Indeed, while many lament the lack of new greenfield projects throughout the industry, they are also relatively cautious in incurring major expenditures on early stage exploration, relying instead on the junior sector which has historically been more effective on a pound for pound basis. This could be a dangerous approach and could lead to major shortages of minerals in years to come if the junior sector loses its current support.

Building new mines and expanding existing mines is not getting any easier. Cost inflation, lead times and skill shortages are increasing challenges to all industry players and no-one is immune. Whilst geography has a major impact on how short these essentials may be, there is increasing empirical evidence that stretched boom towns, such as Perth in Western Australia, are more common than they were only six months ago. The tighter these towns become and the less available the resources, the less likely that supply will come to market at the time that plans might currently suggest. The CEOs see that they have a real challenge in this area, but also note that while slippages and cost increases occur (often in tandem), they also lead to stronger commodity prices as supply struggles to keep up with ongoing increases in demand.

Given so many challenges in building and operating mines, we are seeing innovative initiatives by miners, particularly pushing technology further to the forefront of the industry. While peopleless mines appear a realistic goal, it is difficult to see the construction of new mines reaching the same point anytime soon.

CEOs are faced with a continuing challenge of properly managing existing talent and securing the right talent for successful future projects around the globe and notably in emerging markets. CEOs believe the talent management process must continue to evolve to keep up with the unique industry challenges surrounding location of mines and type of workforce.

In the intervening 12 months since we last undertook these interviews, the greatest change to the thoughts of the CEOs is around resource nationalism. Last year this was an emerging issue, spearheaded by the Australian Government's announcement of a proposed Resource Super Profits Tax. Whilst resource nationalism remains an ill-defined term, the industry is seeing varied, but regular, occurrences which provide the CEOs with much food for thought – for example, in the last 12 months governments

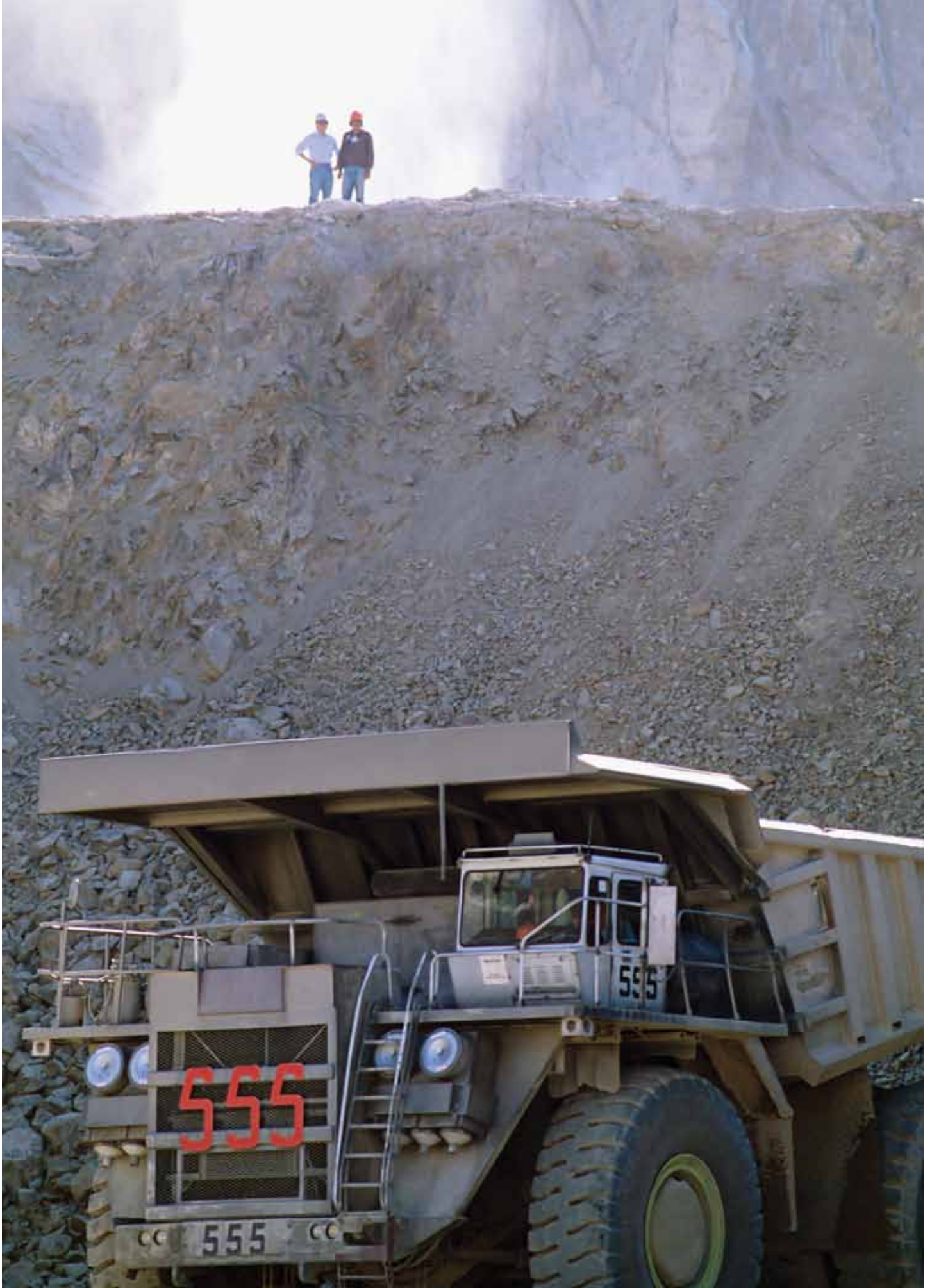
in Australia, Brazil, Canada, Chile, DRC, Guinea, South Africa and Zimbabwe, to name just a few, have all taken action in different ways and others have openly discussed thoughts of doing the same.

The challenges facing CEOs seem more diverse and plentiful in a booming mining industry and certainly none report the last year as being easy, or expect the future to get any easier. All stakeholders need careful consideration and relationships need to be forged ever deeper. One stakeholder that some seem to be taking for granted is the customer. Clearly, in a supply constrained world, the miner has the upper-hand and the customer has to take what it can. Many of the customers are not happy with this arrangement, particularly in bulk minerals as they sense their sector is far more fractured than the mining industry and they are unable to pass increased raw materials prices on to their own customers.

Indeed these same bulk mineral customers appear to be making their move, increasingly buying undeveloped tier two and three assets. The dash to secure resource is on, and India and China are both up to their necks in it. The CEOs are acutely aware of these developments and recognise that this will ultimately lead to greater supply. However, as many of these assets are more marginal than the current crop owned and operated by the majors, they perceive that much of this activity will push the industry cost curve much higher, which will help underwrite higher long-term commodity prices.

The final thought is that funding is not the same key issue it was a year ago – an incredible statement given where things were so recently. Cash flows are plentiful.

In closing, the CEOs are confident of the future but expect volatility. They too believe that the game has changed. While specific commodities have different outlooks, almost all are seen as positive. CEOs know that all stakeholders want their share – record profits and cash flow may be great to offer up to investors; however, they do not pacify a government wanting to address a budget deficit or customers struggling to pass on costs to end users. Last year we raised the entrance of diplomacy as a pre-requisite skill of the modern mining CEO. In 2011 the ability to navigate competing stakeholder demands could well be the differentiating factor in the industry.



04

Nine-year trends 2002–2010



The information included below differs from the rest of our analysis as it includes the aggregated results of the companies as reported in Mine in each of the respective years disclosed. As such, the 2009 column presented below differs from that included in the Financial Review section as it relates to the 40 companies that were included in our previous Mine publication.

\$ billion	2010	2009	2008	2007	2006	2005	2004	2003	2002
Aggregated income statement									
Revenue	435	325	349	312	249	222	184	110	93
Operating expenses	246	217	208	176	141	141	129	81	72
Adjusted EBITDA	189	108	141	136	108	81	55	29	21
Amortisation, depreciation and impairment	34	31	57	19	12	16	15	10	9
PBIT	155	77	84	117	96	65	40	19	12
Net interest cost	7	6	6	5	3	4	3	3	4
PBT	148	71	78	112	93	61	37	16	8
Income tax expense	38	22	21	32	27	16	9	4	2
Net profit	110	49	57	80	66	45	28	12	6
Increase/(decrease) in revenue	34%	(7%)	12%	25%	12%	21%	67%	18%	-
Increase/(decrease) in adjusted EBITDA	75%	(23%)	4%	26%	33%	47%	90%	38%	-
Year on year increase/(decrease) in net profit	124%	(14%)	(29%)	21%	47%	61%	133%	100%	-
Adjusted EBITDA margin	43%	33%	40%	44%	43%	36%	30%	26%	23%
Net profit margin	25%	15%	16%	26%	27%	20%	15%	11%	6%
Aggregated cash flow statement									
Operating activities	137	83	104	95	77	58	41	22	-
Investing activities	(79)	(74)	(102)	(126)	(67)	(38)	(23)	(20)	-
Financing activities	(35)	10	14	36	4	(11)	(10)	1	-
Aggregated balance sheet									
Property, plant and equipment	511	467	402	371	262	224	196	140	116
Other assets	432	334	274	284	192	148	120	83	72
Total assets	943	801	676	655	454	372	316	223	188
Total liabilities	387	354	339	329	217	178	151	114	101
Total equity	556	447	337	326	237	194	165	109	87
Return on equity	22%	13%	17%	28%	31%	25%	20%	12%	7%

Income statement – Revenue smashes through \$400 billion

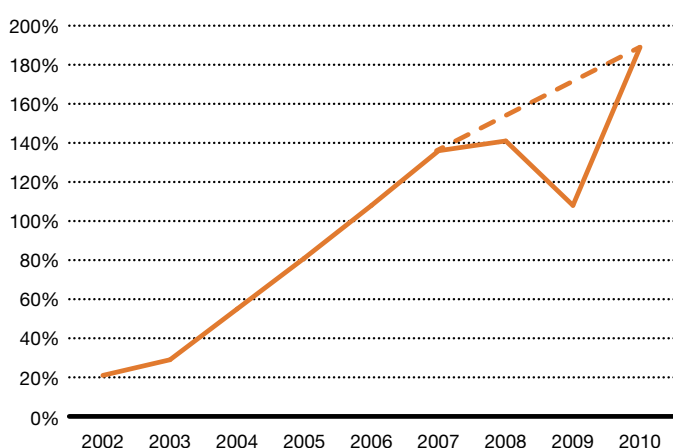
- At \$435 billion, revenue exceeded the \$400 billion barrier to reach the highest level ever reported, a 34% increase over 2009. This has been driven by increases in prices in major commodities and a return to growth in production, illustrating the mining industry's come-back since the global financial crisis.
- Consistent with revenue, adjusted EBITDA has also hit its highest level. At 43% the 2010 adjusted EBITDA margin is in-line with 2006 and 2007 results as relative increases in operating expenses have offset the rise in revenue.

- Despite increases in the scale of the Top 40, net interest cost has remained relatively flat as a result of falling interest rates, coupled with more interest earning cash reserves and less interest bearing debt on company balance sheets.
- Net profit has increased by 124% compared to 2009 to surpass \$100 billion for the first time. However, similar to adjusted EBITDA margins, the 2010 net profit margin of 25% is slightly lower than the net profit margin achieved in 2007 and the record 2006 net profit margin.

- Adjusted EBITDA has steadily increased over the last nine years, except in 2008 and 2009 during the global financial crisis. The table below shows adjusted EBITDA for the last nine years, including a trend line of what adjusted EBITDA could have been if the longer-term trend continued during the crisis.

This shows that the 2010 result is a return to the historical trend, rather than an outlier result.

2002–2010 Adjusted EBITDA (\$ billion)



Source: PwC analysis.

Return on equity and return on capital employed lag despite record profits

Year	ROE	ROCE
2010	22%	18%
2009	13%	9%
2008	17%	13%
2007	28%	22%
2006	31%	23%
2005	25%	18%
2004	20%	14%
2003	12%	8%
2002	7%	5%

ROE has increased since 2009, but is still well off the 2006 peak of 31% and is not significantly higher than the 2002-2009 average of 19%. Net profit in 2010 reached above \$100 billion for the first time and the majority of these historical profits have been retained by companies. This, combined with relatively expensive capital raisings over recent years, has kept equity invested in the industry relatively high, pushing down returns. Determining the most appropriate and efficient capital structure remains a challenge for the industry.

Operating costs and margins – a new base

Despite record revenue and net profit, margins continue to be impacted by increased operating expenses. The 2010 adjusted EBITDA margin is no higher than in the boom years of 2006 and 2007, despite record commodity prices exceeding those previously achieved. These results suggest that there has been a fundamental shift in the cost base of the industry. Costs have remained high through the financial crisis and with continuing pressure on the price of key inputs such as energy and reagents, coupled with ever increasing capital construction costs, there appears to be no let-up in sight for the industry. Labour continues to be in high demand. With many newly announced major growth projects commencing and skill shortages in a number of locations, the cost of hiring and retaining workers is more likely to increase over time.

Ongoing weakness in the US dollar has meant that for the first time commodity currencies have higher relative strength than the US dollar, also impacting margins for many.

Industry valuations often use historical average commodity prices as long-term assumptions, but given the shift in the industry's cost base, commodity prices cannot return to historical averages. We have seen this game change.

Cash flows – Operating cash flow returns, but investing lags

- At \$137 billion for 2010, operating cash flows increased to their highest level, a 65% rise over 2009 and only the second time they have exceeded \$100 billion.
- Investing cash flows increased by 7% but were still well below the \$126 billion invested in 2007. In 2010 for every dollar earned in revenue only 18 cents were invested, significantly lower than the 40 cents invested per dollar of revenue in 2007 and the 2003-2009 average of 26 cents per dollar. In 2010 Investing cash flows were only 58% of operating cash flows, compared to an average of 94% for 2003-2009.
- With recently announced capital projects, we expect investing cash flows to increase again in the coming years. However, companies struggle to meet their capex targets as complexities often delay project timetables.
- Financing cash flow was a net outflow for the first time since 2005, with a net of \$35 billion being repaid to lenders or returned to shareholders.

Balance sheet – Assets approach \$1 trillion

- Property, plant and equipment continued the upward trend experienced every year since 2002, as capital expenditures and acquisitions exceeded depreciation and disposals.
- The increase in property, plant and equipment is well below the 2002-2009 average of 23% and is the second smallest year-on-year increase in the history of Mine; only slightly higher than the 2008 increase of 8%, which was largely the result of significant impairment charges in that year.
- Total assets increased to close to \$1 trillion, largely driven by record levels of cash and property, plant and equipment on company balance sheets.
- The 24% increase in equity in 2010 was largely in line with the average increase of 27% from 2002-2009, with the bulk coming from profits, rather than capital raising.

Top 40 analysis – Three companies debut in 2010

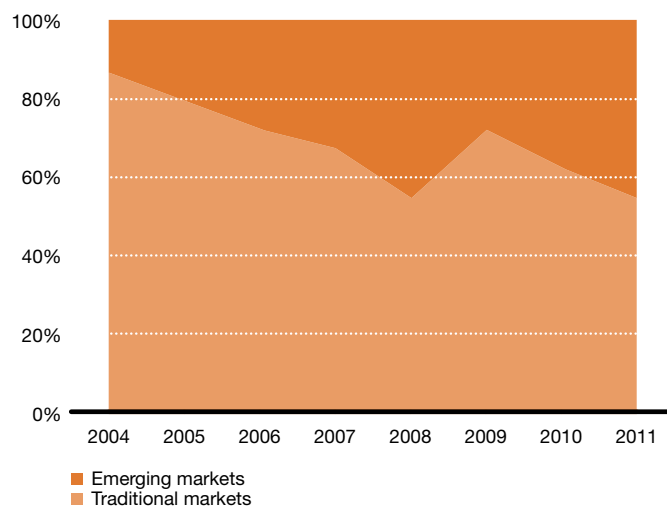
We have examined the composition of the companies included in each of the eight publications of Mine. Looking back, there has been remarkable stability in the composition of the Top 40. We can see:

- 17 companies have been included in every edition of Mine, with a further 20 being included in four or more editions.
- Over the years a number of companies have dropped off as a result of mergers and acquisitions, the

majority of which were Australian and Canadian mid-tier miners. Amazingly there were no South African or UK based miners acquired. Notable names include:

- o Australia: Lihir Gold, WMC Resources, and Zinifex
 - o Canada: Falconbridge, Glamis Gold, Inco, Noranda and Placer Dome
 - o United States: Phelps Dodge
- Where change has occurred, there has been a shift in the countries represented, with a higher portion of emerging market companies making the Top 40 in recent years. This increased to 18 in 2010. This move reflects the continued shift in the players and power base of the mining industry.

Composition of Top 40



Source: PwC analysis.

- The trend has partially been the result of more public information being made available for companies from emerging markets as a result of the public listing of stakes in a number of state-owned enterprises. It is important to note that there are a number of additional Chinese and Russian companies that would otherwise have been included in the Top 40 each year if sufficient information was available at the time of publication.
- In *Vertical Integration – ‘no-go’ or ‘gung-ho!’* we discuss the increased level of integration in the industry. We expect to see a few new names among the top mining companies in coming years.

05

Vertical integration

'no-go' or 'gung-ho!'?



Over the last three decades, as Wall Street and management theorists encouraged companies to focus on their core competencies, the mining and metals industry became less vertically integrated. Recent events however have indicated a growing trend towards the vertical integration of yesteryear. Vertical integration strategies vary, but recent trends show that it has been largely upstream as metals companies and end-users seek to add mining assets, and miners add infrastructure, reintroducing the question of 'what makes a mining company'?

Vertical integration trends have been shaped by an increase in global demand for metals and the growing importance of securing stable supplies of increasingly scarce resources.

Metals companies have looked to vertically integrate primarily to secure alternative sources of raw material supply to facilitate their own continued operation. Additional objectives often include gaining greater control over the price of production inputs and to provide future growth prospects.

Integration exposes companies to new dimensions of market risk in different sectors of the industry and potentially decreases flexibility to react to changing market conditions. It soaks up significant capital, which could otherwise be deployed on growing the existing business. Integrating often requires M&A as organic vertical growth is often impossible or impractical and deals can be risky and often do not generate the expected value. Vertically integrating can stretch management into new areas of focus and could simply add too much complexity to an organisation.

Despite these risks, the mining and metals industry is vertically integrating, albeit in different ways



and for different reasons. The steel industry has seen considerable vertical integration as producers drive for greater self-sufficiency of raw materials, either due to increasingly tight supply of inputs or increasing frustration with the major miners' ability to dictate price and pricing terms. This strategy seeks to reduce the market power of the major iron ore producers through decreased reliance on third-party suppliers. An example of this strategy is ArcelorMittal, which is significantly increasing its in-house iron ore and coal business as part of a strategy to double iron ore production to 100 million tonnes per annum. Many other major steel companies have publicly stated their intentions to increase iron-ore and coking coal self-sufficiency;

- Taiwan's China Steel plans to increase iron ore self-sufficiency from 2% to 30% by 2015;
- POSCO targets 50% raw material self sufficiency by 2014; and
- Tata Steel plans to reach 100% iron ore and 50% coking coal self-sufficiency.

While these stated desires are clear, only time will tell whether these companies, and others, are able to successfully and profitably deliver these strategies.

Recent vertical integration has also included end-users of mining products acquiring upstream assets. Many power producers, including Huadian of China and Tata Power of India, have made major coal mining acquisitions. Amongst zinc smelters, Nyrstar has been active in acquiring mining assets, including their 2011 deal for Canada's Farallon Mining, which increased its self-supplied zinc concentrate usage to 31%. This trend will likely also apply to traders as they increasingly look to build up upstream holdings, seen by Glencore in their run up to a potential IPO and China Minmetals in their acquisition of assets from Oz Minerals and recent attempt for Equinox.

We are beginning to see companies also look at other ways of achieving their integration objectives, such as combining strategic investment and off-take or partnership agreements to lower the risk associated with integration, but still reap similar benefits. A number of companies have adopted this approach, taking minority stakes or providing initial funding to major projects. Examples include China Railway's 12.5% equity stake in African Minerals with a 20 year off-take agreement and JFE Steel's 20% investment in the Byerwen Coal project with a long-term off-take agreement.

In contrast to other miners, Vale has taken a 27% stake in the Brazilian steel production assets owned by ThyssenKrupp CSA. This equity

investment is combined with an exclusive iron ore supply agreement, solidifying a domestic buyer for Vale's Brazilian iron ore.

Although vertical integration strategies vary amongst the miners, generally there is no desire to increase their presence in metals manufacturing or sales. Where integration has occurred, the focus is primarily on infrastructure assets, largely for the same motivation as described above – ensuring security of access to key production and transport needs. Vale, for example, is adding a number of bulk iron ore ships to their in-house fleet.

Overall, trends in vertical integration reflect the changing nature of the industry, particularly as customers are becoming competitors to their current suppliers. For companies moving upstream in the quest for self-sufficiency, the mines being acquired are generally not Tier one assets and are usually in the development phase. With the priority for new entrants often being security of supply, lower tier assets coming on-stream will shift the industry's cost-curve.

While traditional mining houses are not expected to vertically integrate downstream, many will likely continue to integrate into infrastructure. In metals, tightening supplies for raw materials and increasingly variable commodity prices will continue to drive producers upstream either through direct ownership and control or through minority ownership and strategic off-take agreements. In a supply constrained world, for many companies there is no alternative. What remains to be seen is whether vertical integration can deliver sustainable value and how the balance between miners, metals companies, and the markets they serve will change.

06

Financial review





Income statement

	2010 \$ billion	2009 \$ billion	Change %
Revenue	435	330	32
Operating expenses	(246)	(220)	12
Adjusted EBITDA*	189	110	72
Impairment charges	(1)	(12)	(92)
Depreciation & amortisation	(33)	(27)	22
PBIT	155	71	118
Net interest expense	(7)	(5)	40
Income tax expense	(38)	(23)	65
Net profit	110	43	156

* EBITDA adjusted to exclude impairment charges.

Key ratios

	2010 %	2009 %
Adjusted EBITDA margin	43	33
Net profit margin	25	13
Return on capital employed	18	9
Return on equity	22	11

Profits rising

The Top 40 had an outstanding year, with net profit increasing 156% from 2009 to break the \$100 billion barrier. High commodity prices and increased production explain most of this strong performance as operating margins flowed through to the bottom line. The key ratios demonstrate a well rounded performance by the Top 40, with return on capital employed and return on equity doubling in percentage terms from 2009. However as noted in Nine Year Trends, the returns remain below the highs of 2006 and 2007.

Revenue

Revenue increased 32% from 2009, exceeding the \$400 billion mark to reach its highest level since we started our analysis. The jump was attributable to both record high commodity prices coupled with an overall 5% rise in production.

	Revenue (\$ billion)		Adjusted EBITDA margin (%)	
	2010	2009	2010	2009
Rio Tinto	57	42	44	32
BHP Billiton	53	51	45	39
Vale	46	24	59	48

The top three companies by revenue represent 36% of total revenues, largely unchanged from the prior year, reflecting the strong performance across the board. The mix however has changed significantly, with Rio Tinto taking top spot from BHP Billiton this year and Vale nearly to doubling its revenue. Vale's strong performance in 2010 is primarily due to a return to full production in 2010 following the strength in the iron ore market. Rio Tinto and Vale together accounted for 35% of the total increase in revenues from the prior year.

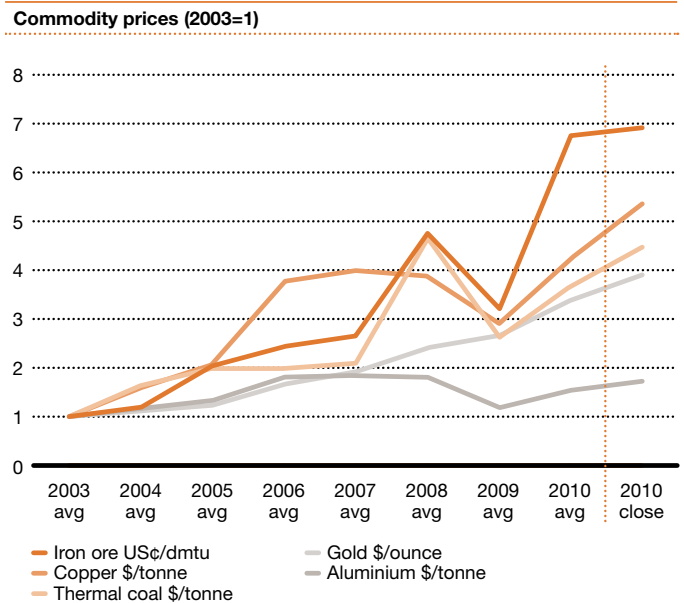
However, it is worth noting that BHP Billiton's revenue would have topped Rio Tinto's had its year end been 31 December rather than 30 June, as BHP Billiton had a \$9.6 billion (39%) increase in half year revenues in the second half of 2010.

Commodity prices

Higher commodity prices contributed to the improved margins and profits in 2010. The average price of all five commodities noted below increased from the prior years, with percentage increases ranging from 26% to 111%. Copper, gold, coal and iron ore reached new average highs in the year, while aluminium could not surpass pre-global financial crisis levels. The increasing trend continued with year end prices higher than annual averages.

Average	Iron Ore \$/dmtu	Thermal Coal \$/tonne	Copper \$/tonne	Gold \$/ounce	Aluminium \$/tonne
2003 average	30	27	1,789	364	1,431
2004 average	36	44	2,868	410	1,717
2005 average	62	53	3,684	445	1,900
2006 average	73	52	6,725	604	2,568
2007 average	80	56	7,124	697	2,638
2008 average	145	125	6,938	872	2,567
2009 average	97	70	5,178	974	1,671
2010 average	205	98	7,558	1,227	2,200
2010 close	210	120	9,600	1,421	2,470

Note: Iron ore prices used above are the Asian Basin price for Hamersley fines sourced from the AME Group Iron Ore Outlook. The thermal coal price is the typical price for Hunter Valley settlements, basis 6,700 kcal/kg GAD or 6,322 kcal/kg GAR, sourced from the AME Group Thermal Coal Outlook.



Source: Bloomberg, AME Outlooks.

Iron Ore

Iron ore turned in record prices with an increase of 111% in the 2010 average price as demand for steel rebounded, tightening the market for iron ore. Iron ore prices showed volatility in mid 2010, but generally trended upwards throughout the year. With record prices and more contracts moving towards shorter-term pricing, it is no surprise that iron ore has received so much recent attention.

Copper

The copper price reached record levels with the 2010 year-end spot price reaching \$9,600 per tonne and the average price up by 46%. This was influenced by continued strong demand for copper, led by China and supply constraints due to a combination of labour strikes, notably in Chile and Peru, mechanical failures and grade diminution.

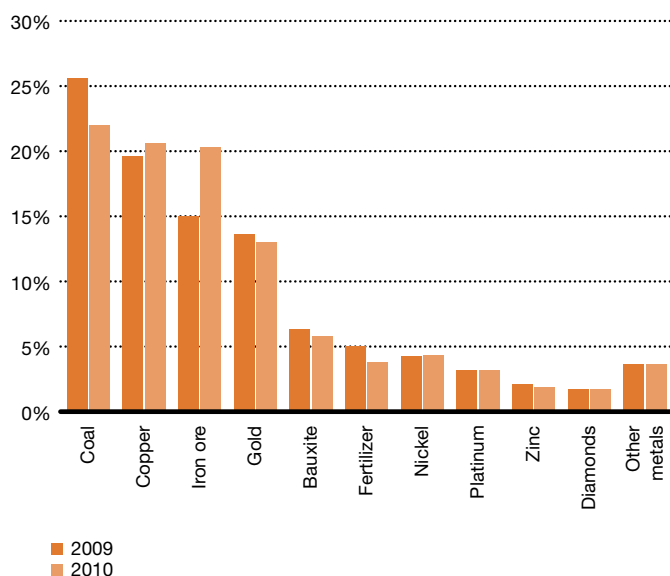
The copper price continued its upward trend in the first quarter of 2011, driven largely by positive economic data from the world's top consumer, China, and an expected recovery in the US economy. Consistent with the prior year, the underlying fundamentals of copper remain strong and the industrial metals required to rebuild Japan's damaged infrastructure combined with continued growth in the developing world are expected to contribute to continued high demand in the second half of 2011. Supply also remains severely constrained.

Gold

Gold has been on a constant upward trend since the average price of \$364 per ounce in 2003, reaching the new high of \$1,421 at the end of 2010. Although gold prices experienced some price volatility in early 2011, the driving factors behind the continued high prices have remained in place, leading to further price increases through the first part of 2011.

Revenue by commodity

Share of revenue by commodity



Source: PwC analysis.

Coal, copper and iron ore account for 63% of Top 40 revenue (2009 - 60%) generated this year. Iron ore revenues increased by \$35.8 billion in the year and represented 20% of total revenues, up from 15% in the prior year. The rise is due to higher prices and increased production volumes, with production up 16% on the back of expansion projects and the return to full capacity by Vale. Coal's share of the total declined in 2010 due to the strength of iron ore.

2010 Production

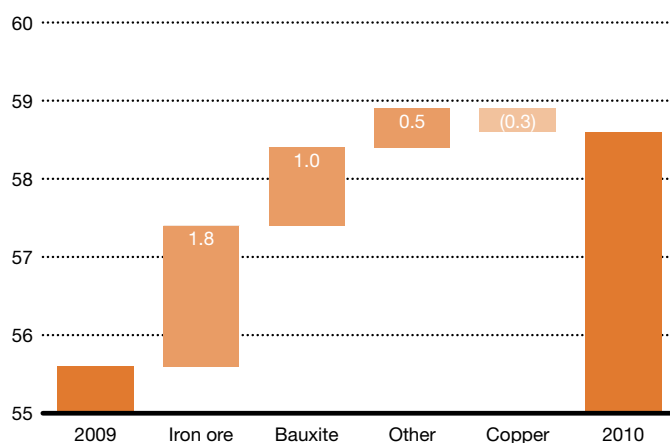
Commodity (measure)	Top 40 production (million)	Change from the prior year (%)
Coal (tonnes)	1,499	1
Copper (tonnes)	7	(4)
Iron ore (tonnes)	716	16
Gold (tonnes)	34	2
Bauxite (tonnes)	40	10
Potash (tonnes)	13	30
Nickel (tonnes)	1	4
Platinum (ounces)	4	0
Zinc (tonnes)	3	0
Diamonds (carats)	14	(1)

Increases in production across the board are evidenced above, with only copper and diamonds showing declines.

The largest boost in production comes from potash, a reversal of the declines in 2009. Iron ore production levels have returned to 2008 levels as iron-ore producers expand operations and returned to full production rates. In 2010, with demand on the rise, iron-ore mines operated at full capacity, brought major capital projects online, and generated a 16% increase in production levels. Copper production decreased as a result of lower grades and labour strikes in Chile and Peru. Major capital projects also came online in coal, but these were offset by Rio Tinto's sale of its US coal assets. Increasing demand for bauxite spurred increased production by Rio Tinto at Weipa.

Total production

(Using Copper equivalent tonnes—2010 closing spot)

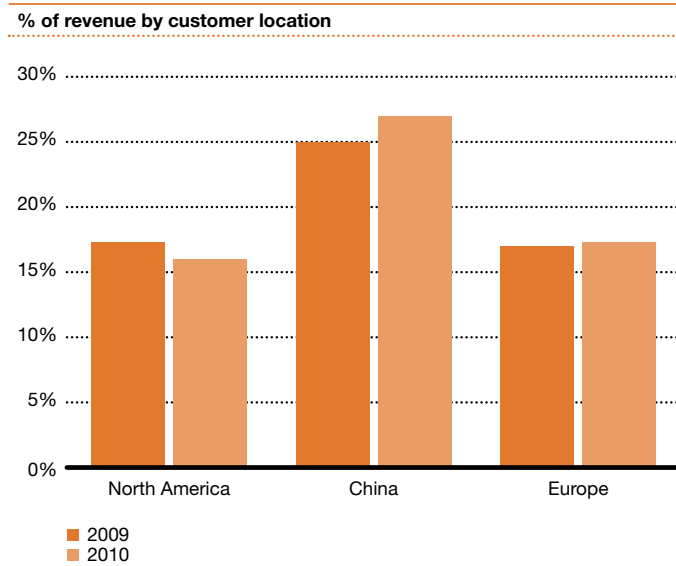


Source: PwC Analysis.

The graph above shows a comparison of total production of the Top 40 year-on-year, using one tonne of copper as an equivalent unit, based on 2010 closing prices. This methodology allows for a comparison of relative production across all commodities. The results show a 5% increase in overall production. This is more than global economic growth but less than the economic growth in the developing countries that have been the primary drivers for higher demand. The increase in production, led by iron ore, stems from large expansion projects coming on-line resulting in higher production across a number of commodities. For those that were willing and able to invest by continuing capital expansions during the global financial crisis, the payoff, in the form of increased production, is beginning to be seen.

We have calculated the remaining mine life of the Top 40 using reserves and 2010 production data. When converted into copper equivalent units at the end of 2010, the Top 40 had a remaining mine life of 35 years. This mine life has decreased by two years from 2009 as a result of production increasing by more than the additions to reserves.

Share of total revenue by customer location



Source: PwC analysis.

The above chart tells the tale of China's influence on the mining industry and the dominant role that it plays in demand for commodities. On a percentage basis, China increased its share of revenue from 25% to 27%, whereas North America accounted for a smaller portion of revenues, providing further confirmation of the shift in the industry to emerging economies.

Costs

Total operating costs increased 12% over the prior year, with employee costs the driving factor. Despite a decrease in direct employment, employee benefits expense rose by 7% from the prior year, for those in the Top 10 that disclose employee numbers and personnel costs. The

actual increase for the same companies, when considered on a per employee basis, is 18%. The decrease in direct employment reflects a shift to contractor and other forms of labour. There is an increasing scarcity of skilled labour in the industry, as expansion projects to capitalise on booming prices fully utilise the available human resource. With no let up in sight, these cost pressures will continue.

Foreign currency fluctuations continue to create volatility in the results and played a role in the cost increase. The Top 10 reported a negative impact of foreign currency changes on their operating costs, representing 18% of the total increase in operating expenses. In particular, movement of the Canadian dollar, Australian dollar and Brazilian real relative to the US dollar contributed to these losses.

Working to partially offset the above increases were cost savings derived from increased efficiency in production processes reported by a number of companies. It is difficult to compare these reported achievements due to the lack of empirical evidence in market releases, lack of disclosures by some and inconsistencies in approach between companies.

Income taxes

While income tax expense increased by 65% from the prior year due to increased profitability, overall the effective tax rate declined from 35% to 26%. The lower effective tax rate is largely attributed to the impact of exchange rate fluctuations and limited ability to use tax losses in the prior year that were absent in 2010. This led to an unusually high effective tax rate in 2009, in particular for BHP Billiton and Vale. The rate of 26% returns to historical norms. While royalties are not consistently treated, these costs are typically not included in income taxes.

Chilean mining clusters

Accelerating the development of world-class suppliers

In Chile, BHP Billiton and Codelco, alongside the Chilean government, aim to develop mining sector suppliers through a mining cluster program. This program seeks to build "world class" skills and capabilities in approximately 250 local suppliers, in order to better support the growth of the mining industry within Chile and export supply services to mining projects around the world. By involving not only suppliers and mining companies, but also the government, universities and R&D centers, the industry is taking a collaborative approach to building capability.

"The cluster program will help solve the mining industry's problems and build a knowledge-based mining services sector. BHP Billiton is strongly committed to supporting and incubating these suppliers"

**Peter Beaven, President
BHP Billiton Base Metals**

The talent race is back on!

The PwC 2011 Annual CEO Survey shows that more than 83% of CEOs believe there is a need for change in the way they manage talent. Mining is no different from other industries in this respect, but has some particular challenges given the locations of operations and type of workforce it employs.

There is a growing mining presence in emerging markets, where there is a dual challenge of incentivisation of staff and talent mobility. Mining companies increasingly see international experience as an important credential for top performers and a necessity to support growing operations in developing countries.

Joint ventures also present a challenge. The prevalence of joint ventures introduces additional complexity, as HR and compensation policies from JV participants can conflict. Disparities in compensation become more apparent, a particular issues for emerging market miners. There is a real risk that for globally mobile staff, compensation will be increasingly set at the highest common denominator.

A third issue occurs where companies that downsized during the global financial crisis are now hiring some of their ex-employees as contractors, paying significantly higher rates than previous in-house employees. The swift change in the environment to a growth phase presents the question – should these contractors be put back on the payroll?

Mining company returns—risk vs. reward

The returns generated by the mining industry can be categorised in three notable forms:

Returns to the company - in the form of net profits

Payments to governments – primarily through taxes and royalties

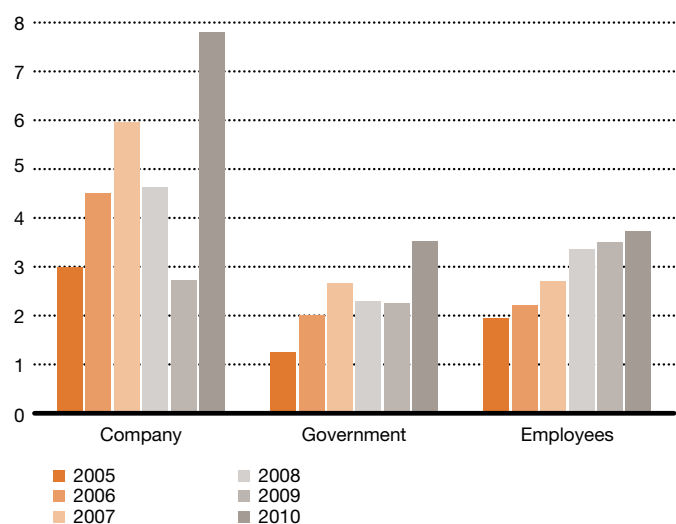
Payments to employees – primarily through salaries, wages, bonuses and other benefits

Of the three forms, returns to mining companies inherently carry the most risk, followed by payments to governments which are somewhat linked to profitability. Payments to employees are the least risk-sensitive.

When performance lags, employees and governments receive a relatively fixed return whilst mining companies receive little to no return. In contrast, in good years mining companies receive strong returns - a reward for the risk undertaken.

The graph for this year's Top 10 illustrates this reality. In 2009 during the financial crisis the government share decreased by only 2% and the share for employees increased by 5%, while companies took a significant hit.

2005–2010 Average returns for the Top 10 (\$ billion)



Source: PwC analysis.

Note: The graph above provide average returns, to the extent available, for those in the Top 10. The graph does not include non-income based taxes. Payments to governments that are not based on profit create risk as mining companies generally continue to make such payments even in years of lower profits. According to PwC's Total Tax Contribution studies, on average corporate income tax is less than 50% of all the taxes and contributions made by mining companies.

Cashflow statement

	2010 \$ billion	2009 \$ billion	Change %
Cashflow related to operating activities			
Cash generated from operations	167	110	52
Taxation paid	(24)	(20)	20
Other	(6)	(4)	50
Net operating cash flows	137	86	59
Cashflow related to investing activities			
Purchase of property, plant and equipment	(67)	(58)	16
Purchase of investments	(24)	(19)	26
Sale of investments	8	5	60
Exploration	(6)	(6)	-
Other net investment-related cash flows	10	1	900
Net investing cash flows	(79)	(77)	3
Cashflow related to financing activities			
Issue of shares	6	33	(82)
Share buy backs	(5)	-	-
Increase in borrowings	35	69	(49)
Repayment of borrowings	(50)	(76)	(34)
Dividends	(22)	(18)	22
Other	1	-	-
Net financing cash flows	(35)	8	(514)
Net increase in cash and cash equivalents	23	17	13
Cash and cash equivalents at beginning of the year	81	59	
Effect of foreign currency exchange rate changes on cash and cash equivalents	1	5	
Cash and cash equivalents at end of the year	105	81	

Operating cashflow – how will it be spent?

In 2010, the Top 40 rebounded from the effects of the global financial crisis with operating cash flows breaking through the \$100 billion barrier again. Higher commodity prices and increased production contributed favourably to the \$51 billion, or 59%, increase in operating cash flow.

With cost containment and cash preservation no longer the number one issue for industry CEOs, the dilemma now for mining leaders is how to most effectively deploy the \$105 billion cash on hand to ensure sustained success.

Income taxes paid by the Top 40 increased by 20% this year. Taxes paid typically lag accounting profits. As such, we anticipate a substantial rise in income taxes paid in 2011.

The rise in income taxes paid is significant, especially when coupled with the Top 40's total economic contribution to the government, including income and non-income based taxes, royalties, and infrastructure development.

Investing cashflow – home is where the heart is

As expected, the Top 40 continued to devote cash resources to purchases of property, plant and equipment. The behaviour of the Top 40 indicates optimism about their own projects. Investments in organic growth opportunities including sustaining capital, represented 85% of net investing cash flows.

The Top 40 have announced expansion capital programs of \$311 billion. We expect this trend to continue over the medium term.

The deal market is waking up, with a 26% increase in cash payments for investments in 2010. While the volume of deals was up, the value still lags well below the record of 2007, as mega-deals become harder to close. For more detail on mining industry transactions, refer to our Mining Deals publication at www.pwc.com/mining.

Exploration spend remains flat and relatively low amongst the Top 40. At just under \$6 billion and only 8% of net investing cash flows, the Top 40 are not investing significantly in exploration activities, instead effectively outsourcing these activities to the junior sector. Given ongoing supply-side challenges, few new world-class projects, and those that have been identified largely being in remote, challenging-to-operate environments, the lack of expenditure on exploration remains surprising.

Financing cashflow – it is better to give than to receive

Financing cash flows turned in 2010, moving to a net outflow of \$35 billion demonstrating the shift in fortunes. Capital raised decreased by 32%, coupled with a 22% increase in distributions to shareholders in light of strong operating results, contributed to the net cash financing outflows of \$35 billion.

The push for capital expenditure

With record high commodity prices, top mining companies are looking to add capacity as quickly as possible. With mega-deals proving difficult to execute, in-house greenfield and expansion capital projects have become a top priority.

In recent months the Top 40 have announced plans to invest \$311 billion in capital projects in the coming years, of which \$120 billion is scheduled for 2011. These announcements represent a major increase over the \$67 billion spent by these same companies in 2010. The increase is even more pronounced as the 2010 spend includes sustaining capital expenditures, which are

generally not included in announced new projects.

Interestingly, although many of the Top 40 companies have provided their capital plans for 2011, details on which projects will be pursued and at what expected cost is often not forthcoming.

Supply and demand

Capital projects in the mining industry often are slower to reach full output than companies initially predict. Unforeseen complexity can drive delays to new production, tightening metal supply against forecasts. This can ultimately lead to increasing prices.

Can it even be done?

The projects announced by the Top 40, in addition to a number of projects planned by other companies and in other industries, could push the world's ability to deliver capital projects to the limits. So, the question remains, is there enough skilled labour, equipment, and material to deliver all of the projects that are planned? The likely answer is no and as constraints materialise, projects will likely be delayed and more marginal projects or those that cannot secure resources could be delayed or cancelled.

Balance sheet

	2010 \$ billion	2009 \$ billion	Change %
Current assets			
Cash	105	81	30
Inventories	50	43	16
Accounts receivable	51	37	38
Other	36	41	(12)
Total current assets	242	202	20
Non-current assets			
Investment in associates and joint ventures	35	33	6
Property, plant and equipment	511	436	17
Goodwill and intangibles	91	75	21
Other	64	52	23
Total non-current assets	701	596	18
Total assets	943	798	18
Current liabilities			
Accounts payable	49	40	23
Borrowings	21	20	5
Other	56	42	33
Total current liabilities	126	102	24
Non-current liabilities			
Borrowings	130	143	(9)
Other	131	112	17
Total non-current liabilities	261	255	2
Total equity	556	441	26
Total equity and liabilities	943	798	18

Ratios	2010	2009
Gearing (%)	8	16
Current (times)	1.92	1.98
Quick (times)	1.52	1.56
Net debt (\$ billion)	46	82

Disappearing debt

With total assets increasing to \$943 billion, the industry is poised to break through the \$1 trillion mark in 2011, as the Top 40 continues to grow in size and scale. Noteworthy is that these assets are funded almost entirely by equity, with net debt down to \$46 billion and borrowings at only 16% of total assets. This shift also reflects the alternative sources of capital now available to the industry, as the new era has ushered in an increase in joint ventures, off-take funding and other arrangements.

The strong cash position has left gearing at just 8%, amazing when considering that less than two years ago a number of companies were struggling to refinance short-term borrowings and many raised equity to help them get through the financial crisis. In 2010 70% of the Top 40 reduced their gearing, with 14 companies having no net debt.

With the Top 40 planning to spend \$311 billion on capital projects in the coming years, the industry has significant capacity to fund the growth and to add some debt without stressing the balance sheet too much.

Some shareholders are already asking what companies are doing with excess cash and whether they should return it. Companies are already responding with significant share buy-backs launched by a number of companies in the first half of 2011.

Buy, Build, Distribute

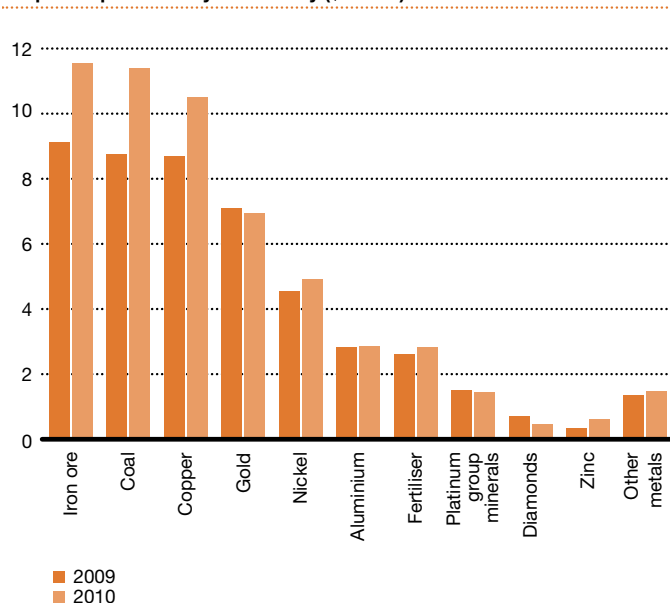
Cash on hand has increased 30% to \$105 billion in 2010, a remarkable achievement given the challenges experienced through the financial crisis. This position has been built with steady and consistent performance, despite the volatility experienced in market capitalisation over the past three years. The build-up of cash could be seen as a reflection of strong performance or equally as conservative balance sheet management. The question is: how will the cash be used in 2011—buy, build, distribute? Or all of the above?

Net assets increased 26% or \$115 billion—staggering numbers particularly when similar growth was observed in 2009, increasing total equity by more than 50% in two years.

Organic Growth

The Top 40 continued to value organic growth as a means for expansion, with a 17% increase in plant, property and equipment. The graph below shows the capital expenditure on mining assets by commodity and the continuing focus on the largest three, iron ore, coal and copper.

Capital expenditure by commodity (\$ billion)



Source: PwC analysis.

Goodwill rises

With stronger market conditions, impairment charges all but disappeared in 2010. Goodwill remains on balance sheets but is concentrated within a small number of companies, with Rio Tinto representing 32% and Xstrata 14% of the total. The most notable increase in goodwill came from Kinross' acquisition of Red Back Mining (\$5 billion goodwill) with Vale and Rio Tinto each also adding \$1 billion. Of the total intangible asset balance of \$91 billion, goodwill comprised \$47 billion.

Customers

Accounts receivable increased 38% on the prior year. With Days Sales Outstanding only increasing by two to 43 days, the rise is more of a reflection of the increase in commodity prices on fourth quarter sales than decline in the cash collections from customers in the industry.

07

Reserves

STOPE	RIG ID	DRILL	PREP	CHARGE	FIRE	BOG	REMOTE
		Y/N	Y/N	Y/N	Y/N	Y/N	Y/N
1117 FWS	08-171						
1117 HWS							
1137 HKN							
800 R	08-170						
08-170	08-1170						

PRODUCTION

BOG
 HOLD
 PROD PD18
 PD1
 SKYD

Reported reserves

	Gold	Platinum	Copper	Zinc	Nickel	Iron ore	Metallurgical Coal	Thermal Coal	Bauxite	Potash
	(million oz)		(million tonnes)							
No. of companies	15	5	19	7	5	7	12	12	3	2
2009 reserves	582	211	271	40	19	14,939	11,449	67,822	1,177	746
(Depletion)	(34)	(4)	(7)	(3)	(1)	(716)	(226)	(1,273)	(40)	(13)
Other net addition/ (reduction)	71	3	36	3	-	1,278	336	831	(31)	25
2010 reserves	619	210	300	40	18	15,501	11,559	67,380	1,106	758
Change (%)	6%	(1%)	11%	0%	(4%)	4%	1%	(1%)	(6%)	2%
Remaining life (years)	18	51	41	12	21	22	51	53	27	57

Successful conversion

In some commodities mine life was extended in 2010, but overall our analysis shows that on a copper equivalent tonnes basis, the industry's remaining mine life decreased by two years to 35. This demonstrates that while the Top 40 experienced exploration success, it was not as much as the increase in production during the year.

Gold exploration gains

PwC's annual Global Gold Price survey for 2010 again highlighted the use of higher gold prices in reserve calculations which lead to lower gold cut-off grades. The average gold price used in the calculation increased from \$974 per ounce in 2009 to \$1,227 per ounce in 2010. The surging gold prices have made higher cost mines economically feasible. Furthermore, successful exploration results throughout the year have also pushed gold reserves higher, such as the gold contained at Oyu Tolgoi in Mongolia, Goldcorp's South American and Canadian projects and Kinross' projects in Mauritania and South America.

Copper in focus

Increasing long-term price assumptions following the run up in the copper price fueled a uniform increase in copper reserves across the Top 40. The increased copper reserves were primarily attributable to Ivanhoe and Rio Tinto's massive Oyu Tolgoi project in Mongolia as well as

Freeport McMoRan's addition of copper reserves at its North American properties. New reserves have significantly exceeded depletion of ore as production was down, resulting in an extension of the life of the copper mines by about eight years over 2009.

Pressure on zinc and nickel

Zinc and nickel reserves remained at about 2009 levels as exploration programs have not discovered significant new ore bodies in the last few years. The remaining zinc life of Top 40 companies has decreased from 13 years at the end of 2009 to 12 years and nickel has declined to 21 years – the shortest remaining lives of all commodities. We note that a number of major zinc producers are not currently included in the Top 40, such as Vedanta Resources plc and Minmetals Resources Limited.

Pay dirt

The huge iron ore investments by the majors in expanding their operations to meet ever growing demand has hit pay dirt in 2010 with a significant increase in reserves leading to overall growth in remaining mine life to 22 years. Significant additions were recorded by all major iron ore players.

Coal keeps rising

With global steel production increasing by 17% in 2010, according to the World Steel Association, metallurgical coal was in high demand and production increased lockstep with steel. Similar to iron ore, prices showed some volatility mid-year, generally increasing during the year to close strongly, but still below record highs seen in mid-2008. Anglo American added the most significant new reserves at its Grosvenor project in Australia.

Production of thermal coal was stable, with additions offsetting production. New reserves were reported by BHP Billiton (due in part to the resource conversion at Mt Arthur), Xstrata (whose reserves increased due to reclassification from resources in Rolleston West and approval of the Bulga project) and China Shenhua (due to new drilling at Shendong Mines). These additions for the Top 40 were slightly offset by Rio Tinto's divestiture of its North American coal assets.

Bauxite challenges

Production of bauxite was relatively stable year on year. However due to the changes in Brazilian environmental laws, BHP Billiton and Rio Tinto have reduced part of their bauxite ore reserves. These resources will be reclassified back to reserves once new license approval has been granted. This change reflects the impact of the challenging operating environment in many countries due to the heightened focus on the mining industry.

Exploration expenditure

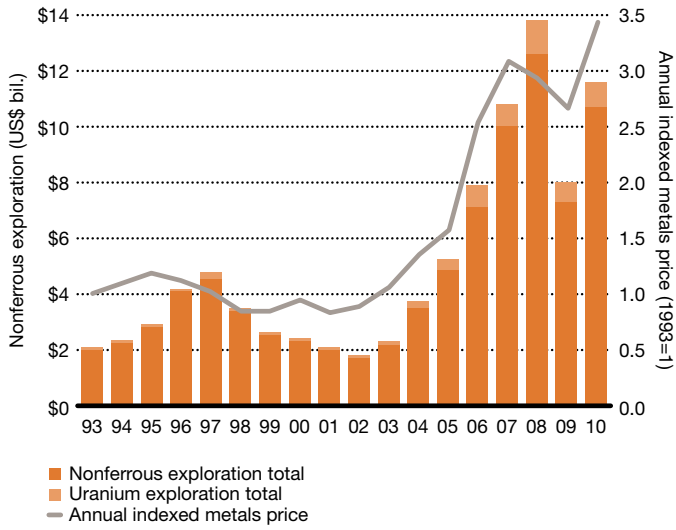
After a severe drop in exploration spend last year, 2010 saw a moderate increase to just below \$6 billion by the Top 40. In our analysis we noted that the focus of the Top 40 remained on brownfield exploration. With purse strings remaining tight some companies spending remained at only 50% of previous levels however plans for further increases in 2011 and 2012 have been announced by many. According to Metals Economics Group's *World Exploration Trends 2011* the total global spend reached \$12.1 billion, up from \$8.4 billion in 2009. The Top 40, therefore, accounted for less than half of the total spend, showing the continued importance of the junior sector to worldwide exploration.

Gold and base metals dominated 2010 exploration expenditure, comprising almost 85% of the total, according to Metals Economics Group:

"In 2010, global economic fundamentals kept the spotlight on gold, and historically high prices prompted gold explorers to increase their aggregate budget by \$1.9 billion. This increase lifted planned spending on the yellow metal to \$5.4 billion and its share of the total budget to 51% - the first time since 1999 that Gold accounted for more than half of the total planned spending."

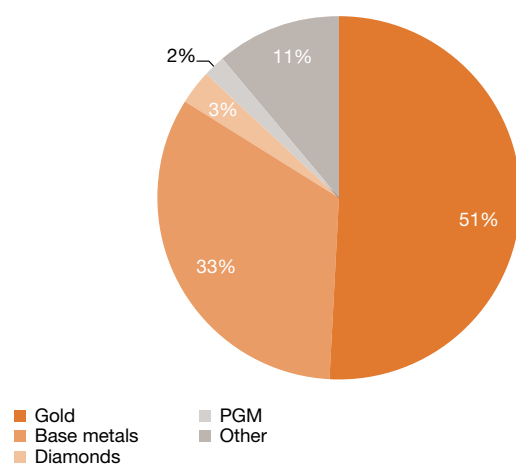


Exploration expenditure



Source: Metals Economics Group: World Exploration Trends 2011.

2010 Worldwide exploration budget by commodity



Source: Metals Economics Group: World Exploration Trends 2011.





08

What's *mine* is *mine*

In today's world governments in many of the traditional and emerging mining countries are looking at reforms to their mining codes, reviewing their views on sustainability and refreshing their approach to royalties and taxation. At the same time non-government stakeholders' influence is growing. Naturally this has focused attention on the drivers for this activity and what this all means to a miner's licence to operate.

With these issues in mind, mining executives operating around the world face increased demands when assessing new and emerging markets for investments, acquisitions or new projects. In the attached article, the geopolitical risk company Eurasia Group have highlighted several examples of where governments have

changed policy. It is clear that there are a number of different motivations at play in these territories and mining companies have to become increasingly adept in dealing with the influencers behind changes in regulations.

The questions around who pays for resource development, who benefits and how these benefits are distributed remain. This is not new for miners or for authorities who have always had to balance the elements of control over mines and resources with the ability to sustainably develop assets in the investment climate. What has emerged recently is a greater voice from stakeholders on all sides to challenge whether there is a balanced, equitable outcome for all parties and a question to miners, can you prove your worth?

Across the industry there are a multitude of examples of activity where miners are doing just this, from Anglo American's Zimele

programme for local procurement through to Vale's partnership with the Earth Institute for the development of sustainability goals for international foreign direct investment. The trend is clear and it will continue, with regulations around traceability of products, human rights, carbon emissions, energy consumption, biodiversity management and water usage, to name but a few, all playing a part in the story. Each issue comes with a number of focused groups of stakeholders keen to ensure their opinions are heard.

It is interesting how the mining story has been told and how integration into a country's industrial supply chain is playing a greater role in investor presentations and speeches. The scale of mining projects has been increasing as mineral grades are challenged and projects have to look to new, often more remote locations requiring infrastructure, to expand. Infrastructure is not only the obvious rail, port and power networks but also the human infrastructure, such as medical healthcare and community support programs. There are already many examples where miners are working with local partners further along the supply chain, which is often not fully described in the story of the total economic impact that a miner generates. It is here that the collaboration between private

By Divya Reddy, The Eurasia Group

As the global economy emerges from the financial crisis, governments are reassessing their economic priorities with an overarching goal of maximising economic growth and addressing budget deficits. In this context, many governments are considering or actioning a more interventionist approach to the mining sector, particularly in light of a strong outlook for commodities demand and weak budgetary outlooks in a number of minerals-rich countries. Operations are also receiving heightened attention at the local level and as such miners are required to be mindful of community and environmental obligations as well.

Resource nationalism: On the heels of stimulus spending to counter the effects of the financial crisis, governments worldwide accrued budget deficits that they will now seek to plug as they look ahead to longer term economic growth and fiscal stability. Importantly, while political risk is traditionally considered in a developing country context, resource nationalism in the form of taxation and royalty revisions is also gaining ground in industrialised countries. In Australia, the government appears likely to pass the Minerals Resource Rent Tax on iron ore and coal companies in 2012, although the scope was significantly moderated from an earlier proposal due to successful industry lobbying. At the same time, a rise in populist rhetoric in the run-up to this year's elections in Peru led to all major candidates supporting increased taxes on the mining sector. A victory by Nationalist candidate, Ollanta Humala, would increase the likelihood that mining companies will be required to pay higher taxes in Peru.

Elsewhere, resource nationalistic policies are being driven by industrial policy priorities. For example, Brazil's upcoming mining reform, likely to pass in 2012, is designed to align mining investments to the country's industrial policy goals. Along with royalty hikes, the reform will impose tighter investment requirements and introduce tax mechanisms to incentivise the industrialisation of minerals domestically. Similarly in India, the federal government in February raised iron ore export taxes with an eye to expanding domestic steel production, while a number of state governments are trying to impose export taxes for similar reasons.

State capitalism: The promotion of national champions has become a growing trend in the mining industry. As mining companies increasingly find themselves competing against state-owned or state-backed companies, governments may take a more statist approach to their mining sectors and promote national champions. In Russia, a long-standing battle for control over Norilsk Nickel will over time likely give way to Kremlin intervention to create the foundation of a metals national champion. In South Africa, an important near-term priority for the government is the development of a state-owned mining company, the African Exploration Mining and Finance Corporation. In the near-term, the outfit poses a limited competitive threat to established players, but reflects the government's increasing involvement in the sector.

Sustainability/community relations: Local opposition to mining projects on environmental or social grounds has led to a number of recent shutdowns of mines by generally pro-mining regimes. In Guatemala, human rights accusations led the government to order the shutdown of the Marlin gold mine, while in Panama, President Ricardo Martinelli overturned passage of a new mining code that would have promoted investment in the sector following a series of protests by indigenous communities. Canadian company Greystar is also facing environmental opposition to developing its copper mine in Colombia, and in the Philippines the South Cotabato local government has banned open pit mining preventing the development of Xstrata's giant Tampakan copper-gold project. Local security risks can also challenge mine operations, as miners in Cote d'Ivoire and Mexico are currently experiencing.

Government stability/transparency: Tumultuous or murky political environments can also have significant impacts on mining companies. For instance, in Kyrgyzstan, although the parliament's approval of Almazbek Atambayev as Prime Minister in December 2010, followed by the establishment of a cabinet, were positive steps toward restoring political order in the country, the majority coalition is likely to be unstable over time, given the divergent political views of its member parties. Frontier markets also tend to be more vulnerable to general government instability, particularly around elections. For example, ahead of a 7 November 2010 presidential run-off vote, mounting tensions and violent clashes in Guinea cast a large shadow over the future of mining operations, which depend, in part, on President Alpha Condé's ability to secure a smooth political transition from military to civilian rule.

sector and society, along with the historic relationship with public sector and policy intervention, needs to continue to evolve. Where there has been successful collaborations, these should form key stories to tell, to ensure that the equitable outcome message is clear.

Looking to the future, with a greater focus on sustainability, will miners be able to address stakeholder

issues and ultimately influence governments to manage issues of resource nationalism, state capitalism, community relations and transparency? What is perhaps clear is whilst it is a judgement call for companies as to where they invest and how to manage their relative appetites for risk, when operating in a country the relationships with all stakeholders that they have in that country will be scrutinised

increasingly on the global newswires and social media sites. It will be their actions and behaviours being analysed as much as financial results and balance sheets. The interplay of corporate and society in developing opinion is greater than ever and along with a greater need to address regulatory and increased stakeholder power, companies have a real opportunity to help the debate around resource development.

09 *The golden rules*





The price of gold always receives a lot of attention and this was definitely true during 2010, when it increased for the tenth consecutive year to \$1,421 per ounce, up 23% year on year. As the price continues to rise to new highs in the first part of 2011, the question is; what will happen next? Because gold is indestructible and not consumed in the way other commodities are, it is not as influenced by typical supply and demand factors but rather as a means for storing wealth. There are a number of other macro-economic factors that are keeping prices at the current level and which could continue to drive prices even higher, including the European sovereign debt crisis, unrest in the Middle East and increased central bank buying of gold.

As gold is priced in US dollars, changes in the value of the dollar influence the price of gold. The US dollar remained weak in 2010, partly as a result of U.S. monetary policy, such as the US Federal Reserve's second round of quantitative easing. With gold utilised as an alternative 'currency' to the US dollar, this has the effect of driving up the price of gold.

Gold ETFs experienced substantial growth as investors looked to such funds to either speculate, or as an alternative to US treasury bills or money market funds, as the US dollar depreciated. The total holdings of gold through ETFs reached a high of approximately 70 million ounces of gold, more than double total gold production of the Top 40 in 2010.

Growth in emerging countries also affects the price of gold – through increased purchases of gold by their central banks, as well as their citizens, as wealth increases. This is highlighted by the People's Bank of China encouraging the people of China to purchase gold as a hedge against inflation in their Financial Markets Review in March 2011 and the Central Bank of the Russian Federation purchasing 140 tonnes of gold in 2010, an increase of 21% over 2009.

Overall there was a significant shift in demand in 2010 from the official sector, with central banks becoming net buyers of the yellow metal for the first time in two decades.

Since there is substantially less gold available than US dollars, small shifts from U.S. dollars to gold can cause a considerable increase in demand. At the end of 2010, preliminary figures from the International Monetary Fund's (IMF) Currency Composition of Official Foreign Exchange Reserves indicate that emerging and developing economies that report to the IMF hold \$1.4 trillion of US dollars in their Official Foreign Exchange Reserves. Even a 5% shift in US dollar holdings to gold by these countries would represent a massive 50 million ounce increase in demand for gold that is comparable to 71% of total investment in ETF's at the end of 2010 and would significantly affect gold prices.

As a result of high gold prices and the fact that gold companies attract the 'gold premium', resulting in the use of higher multiples than base metal companies, unique transactions can be considered to obtain this premium. One such example is a base metals company that either sells or spins out to its shareholders its gold assets if it is thought that the assets are not attracting the gold premium.

Another way to unlock this premium is through a transaction with a gold streaming or royalty company. Gold streaming companies enter into streaming transactions which are contracts to purchase gold production from other companies, often those for which the gold production is a byproduct. In this instance, the stream company will gain the benefit of the gold premium which the base metals producer was not able to.

Given the shortage of world class deposits that contain only gold, larger gold companies, in their quest to replace resources, often consider acquiring properties with substantial copper along with gold. In time, this may change the dynamics associated with the gold premium.

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Glossary

Current ratio	Current assets / Current liabilities
EBITDA	Earnings before interest, tax, depreciation and amortisation.
Adjusted EBITDA	EBITDA adjusted to exclude impairment charges. A measure that is close to the underlying cash earning stream of the company before servicing the capital base.
PBIT	Profit before interest and tax
PBT	Profit before tax
EBITDA margin	EBITDA / Revenue
Adjusted EBITDA margin	Adjusted EBITDA / Revenue
Gearing ratio	Net borrowings / Net borrowings plus shareholders' equity
GFC	Global Financial Crisis
Market capitalisation	The market value of the equity of a company, calculated as the share price multiplied by the number of shares outstanding
Net Borrowings	Borrowings less cash
Quick ratio	(Current assets less Inventory) / Current liabilities
Net profit margin	Net profit / Revenue
Return on capital employed ("ROCE")	Net profit / Average property plant and equipment plus current assets less current liabilities
Return on equity ("ROE")	Net profit / Average shareholders' equity
SWFs	Sovereign Wealth Funds
Top three	BHP Billiton, Vale and Rio Tinto
Top four	BHP Billiton, Vale, Rio Tinto and China Shenhua
Top 10	BHP Billiton, Vale, Rio Tinto, China Shenhua, Xstrata, Anglo American, Freeport-McMoran, Barrick Gold, Potash Corp, Coal India.
Top 40	40 of the world's largest mining companies
TSR	Total shareholder return: as measured by dividends and capital gain in a given period over the opening share price.

Top 40 companies analysed

Name	Country **	Year end
Agnico-Eagle Mines Limited (*)	Canada	31-Dec
Anglo American plc	UK	31-Dec
AngloGold Ashanti Limited	South Africa	31-Dec
Antofagasta plc	UK	31-Dec
Barrick Gold Corporation	Canada	31-Dec
BHP Billiton Limited / BHP Billiton plc	Australia / UK	30-Jun
Cameco Corporation	Canada	31-Dec
China Coal Energy Company Limited	Hong Kong	31-Dec
China Shenhua Energy Company Limited	Hong Kong	31-Dec
Coal India Limited (*)	India	31-Mar
Compania de Minas Buenaventura SA	Peru	31-Dec
Consol Energy Inc.	United States	31-Dec
Eurasian Natural Resources Corporation PLC	UK	31-Dec
Fortescue Metals Group Limited	Australia	30-Jun
Freeport-McMoRan Copper & Gold Inc.	United States	31-Dec
Goldcorp Inc.	Canada	31-Dec
Gold Fields Limited	South Africa	30-Jun
Grupo Mexico S.A. de CV	Mexico	31-Dec
Impala Platinum Holdings Limited	South Africa	30-Jun
Industrias Penoles S.A.B De CV (*)	Mexico	31-Dec
Ivanhoe Mines Limited	Canada	31-Dec
Jiangxi Copper Company Limited	Hong Kong	31-Dec
Kazakhmys Plc	UK	31-Dec
KGHM Polska Miedz SA (*)	Poland	31-Dec
Kinross Gold Corporation	Canada	31-Dec
MMC Norilsk Nickel	Russia	31-Dec
National Mineral Development Corporation Limited	India	31-Mar
Newcrest Mining Limited	Australia	30-Jun
Newmont Mining Corporation	United States	31-Dec
Peabody Energy Corporation	United States	31-Dec
Potash Corporation of Saskatchewan Inc.	Canada	31-Dec
Rio Tinto plc / Rio Tinto Limited	UK / Australia	31-Dec
Shandong Gold Mining Co., Ltd (*)	China	31-Dec
Shanxi Kishan Coal and Electricity Power Company Limited	China	31-Dec
Silver Wheaton Corp. (*)	Canada	31-Dec
Teck Resources Limited	Canada	31-Dec
The Mosaic Company	United States	31-May
Vale SA	Brazil	31-Dec
Xstrata plc	UK	31-Dec
Yanzhou Coal Mining Company Ltd (*)	Hong Kong	31-Dec

(*) Refer to companies which were not included in 2009 analysis.

(**) Refers to the country of primary listing where the shares are publicly traded.

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Explanatory notes for aggregated financial information

We have analysed 40 of the largest listed mining companies by market capitalisation. Our analysis includes major companies in all parts of the world whose primary business is assessed to be mining.

The results aggregated in this report have been sourced from the latest publicly available information, primarily annual reports and financial reports available to shareholders. Where 2010 information was unavailable at the time of data collation, these companies have been excluded. Companies have different year-ends and report under different accounting regimes, including International Financial Reporting Standards (IFRS), US Generally Accepted Accounting Principles (US GAAP), Canadian GAAP, and others.

Information has been aggregated for the financial years of individual companies and no adjustments have been made to take into account different reporting requirements and year-ends. As such, the financial information shown for 2010 covers reporting periods from 1 April 2009 to 31 December 2010, with each company's results included for the 12-month financial reporting period that falls into this timeframe.

All figures in this publication are reported in US dollars, except when specifically stated. The results of companies that report in currencies other than the US dollar have been translated at the US dollar exchange rate for the respective year.

Some diversified companies undertake part of their activities outside the mining industry, such as the petroleum business of BHP Billiton and parts of the Rio Tinto aluminium business. No attempt has been made to exclude such non-mining activities from the aggregated financial information.

Entities that are controlled by others in the Top 40 and consolidated into their results have been excluded, even when minority stakes are listed.

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PwC is a leading adviser to the global mining industry, working with a wide variety of explorers, producers and related service providers to ensure we meet the challenges of the global mining industry into the future.

Our strength in serving the global mining industry comes from our skills, our experience, and our seamless global network of dedicated professionals who focus their time on understanding the industry and working on solutions to mining industry issues.

For more information on this publication or how PwC can assist you in managing value and reporting, please speak to your current PwC contact or telephone/ e-mail the individuals below who will put you in contact with the right person.

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PwC mining publications

Country Mine publications

Besides the Global Mine publication PwC prepares a number of Country Mine Publications which focus on analysis of trends in the mining industry in particular regions.



Aussie mine—Rise and Shine :: November 2010

PwC's annual review of trends in the mid-tier Australian mining industry. This report focuses on the annual results of the largest 50 mining companies listed on the Australian Stock Exchange with a market capitalisation of less than \$5 billion at 30 June 2010.

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South Africa Mine—Review of trends in the South African mining industry :: November 2010

This second edition of SA Mine focuses on the state of the mining sector in South Africa. It aggregates the financial results of mining companies with a primary listing on the Johannesburg Stock Exchange (JSE) and large mining companies with a secondary listing on the JSE whose main operations are in Africa at 30 June 2010.

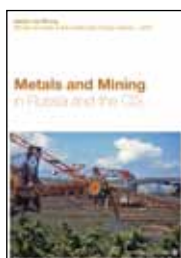
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Junior mine - Trends in the TSX :: October 2010

PwC Canada's review of trends in the mining industry through analysis of the top 100 mining companies on the TSX Venture Exchange, based on market capitalisation at 30 June 2010.

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Metals and Mining in Russia and CIS :: April 2010

This inaugural edition of Metals & Mining in Russia and CIS focuses on the state of the mining sector in this region and the major trends in its development. It analyses the financial results of 20 major mining companies in Russia, Ukraine and Kazakhstan.

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Other PwC Mining Publications

Our commitment to the industry goes beyond our services. As industry leaders, we are globally recognised for our broad knowledge of the mining industry and the laws that govern it.

Set out on this page are examples of recent mining thought leadership publications.



Global mining deals 2010 – You Can't Always Get What You Want :: March 2011

It's likely that Mick Jagger and Keith Richards had other things on their minds while crafting "You Can't Always Get What You Want", the Rolling Stones' 1969 classic, but we can't think of a more fitting theme for mining M&A in 2010 and, more importantly, for the decades ahead. The bottom line is that, with the world's population estimated to reach 8.3 billion by 2030 amid fears of a fleeting supply of resources, there may not be enough to go around. Someone, somewhere, may be disappointed.

With this in mind, Mining Deals 2010 revisits mining M&A in 2010 and looks at anticipated trends for M&A in 2011. Our report sets out the winners, losers and those waiting in the wings.

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As good as gold? Global perspectives on the rising price of gold: 2010 Global Gold Price Survey Report :: December 2010

Annually, PwC surveys gold mining companies from around the world. We spoke with 44 companies, asking them questions varying from when do you think the price of gold will peak, to, what gold price are you applying to your reserves in 2010?

This year we took an even deeper look into the gold sector, noting trends around the relationship between the price of gold and M&A activity, hedging strategies, the investment market's increased attractiveness toward junior mines involved in gold, struggling global currencies and countries' increased interest in gold. As the price of gold seeks to challenge its high in 1980, the gold sector is in the midst of an exciting period of time. What will your company do to capitalize on the price of gold?

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Global mining tax comparison: Income taxes, mining taxes and mining royalties :: December 2010

This publication is an analysis of the taxes in mining countries around the world, focusing on income taxes, mining related taxes and royalties applicable in that country.

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Financial reporting in the mining industry

This provides a comprehensive analysis of financial reporting in the global mining industry. It sets out the major accounting practices adopted by the mining industry under IFRS in respect of issues of particular relevance to the mining sector. We are currently updating this publication to address all recent changes and developments in IFRS and industry practice.

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Optimizing extended mining operations through value driver modeling :: November 2010

The global financial crisis brought cost management back into focus for many mining companies. This publication seeks to demonstrate that robust modeling of operational cost and value drivers across the extended life of the mining operation is a key requirement for maximising value, regardless of the economic cycle.

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Sustainable cost reduction in the mining sector :: September 2010

As the mining industry emerges from the Global financial crisis, many companies are already outlining plans for moderate to aggressive growth over the short to medium term. While production volumes will need to grow to meet an expected upswing in commodities demand, one of the largest opportunities for shareholder value creation is operating and capital cost reduction.

This publication highlights leading practices to achieve sustainable cost reductions in mining operations. It also describes an effective approach to improve capital productivity, which focuses on rigorously challenging project economics and detailed design solutions during the early stages of a mining project.

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Total Tax Contribution - A study of the economic contribution mining companies make to public finances :: May 2010

The taxes and other contributions that mining companies pay to government is an important element in the creation of prosperity and stability in the countries in which they operate. However, the full extent of this contribution is not always recognized. Using the PwC Total Tax Contribution framework, this second study for the mining sector aims to bring greater transparency to the wider economic contribution that mining companies make to public finances. The study is larger than the original study and includes 22 mining companies operating in 20 different jurisdictions.

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