Mine 2016

Slower, lower, weaker... but not defeated



Review of global trends in the mining industry

pwc



Foreword

Welcome to PwC's 13th annual review of global trends in the mining industry – Mine. This analysis is based on the financial performance and position of the global mining industry as represented by the Top 40 mining companies by market capitalisation.



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Introduction

Records tumble

2015 was a ***race to the bottom*** with many new records set by the Top 40 mining companies. The Top 40 experienced their first ever collective net loss, their lowest return on capital employed, unprecedented capex containment and the tag team effect of prevailing debt levels plus impairments, sending leverage to new heights. Such records are stark and irrefutable.

There has been no shortage of analysis suggesting that late 2015 marked the bottom of the market. Sporadic rallies in early 2016 built expectations, with many pens poised to herald a gradual but sustained return to prosperity. However, most aspirations have since been snuffed, dismissed as unfortunate interpretations of increased volatility. Some industry leaders have taken the opportunity to reinforce their expectations of subdued conditions persisting through 2016 and beyond.

Whether 2015 or 2016 marks a turning point remains to be seen, but we maintain the view that these results ***do not mean*** the Top 40 are ***defeated***.

Only a few years ago, the Top 40 lived up to Olympic expectations…

The Top 40 were ***faster*** in their pursuit of production. Rampant Chinese demand led to a fierce race to increase capacity at any cost. Business models were adapted to accommodate short-term decisions and production junkies emerged.

The market climbed ***higher***, reaching dizzying levels. Production records were smashed, and the industry was awash with cash. Big licks of the prize money was then plunged into new projects (and acquisitions), leading to bulging balance sheets, prepared to take on escalating demand.

And the belief was ***stronger*** for longer! Higher prices were the expected new norm. China's demand would continue to strengthen forever and miners were masters of the market.

However, the boom, like all others, had its limits. Many of the Top 40 let their attention stray too long from the marathon of mining and the 2015 scoreboard is telling … ***slower, lower, weaker.***

Slower

The Top 40 bulked up when prices were high, but they now face many handicaps to progress. There is now less free cash, a lower appetite for expansion from lenders and shareholders alike and infringements arising from past decisions – these are borne out in the high levels of impairments that have been revealed and will continue to emerge. Whilst falling short of a *Mine* record , the Top 40 had impairments of $53 billion in 2015 and have now written-off the equivalent of 32% of capex spent since 2010. It is no wonder that inertia prevails.

The Top 40 are looking to maximise value from shedding assets, and mothballing marginal projects or curtailing capacity. This is further evidenced by a significant drop-off in capex, signalling an almost stagnant investment environment.



Lower

Lower demand for bulk commodities, combined with a bleak global outlook and a production hangover, sent commodity prices down. All mining companies, regardless of size or commodity diversification, felt the pinch, with the traditional miners taking the biggest hit.

The market capitalisation of the Top 40 dropped 37% in 2015, a drop disproportionately greater than that in commodities prices. Investors were concerned by liquidity and punished the Top 40 for poor investment and capital management decisions and, in some quarters, for squandering the benefits of the boom.

The almost complete erosion of the gap between the market capitalisations and net book values demands attention. In an industry where the main asset – namely, the ore reserves and resources – is generally not included on the balance sheet, should we conclude that the market is simply being circumspect in ascribing nil value to the vast majority of these long life assets? Or do we condition ourselves for more pain, beyond the nearly $200 billion of impairments in the past five years, if prices do not recover?

Medals should be on offer to those who made demonstrable inroads on costs, with some "wind assistance" via lower input costs. However, the commodities price decline proved insurmountable and EBITDA slumped by 39%. The bottom line for 2015 was the first net loss in the history of *Mine* and, as expected, dividends were cut.



Weaker

Whilst there has been an overall reduction in absolute debt balances, leverage is at an all-time high of 46% and cash used to repay debt is broadly equal to cash from borrowings. The result was that the Top 40 are more vulnerable and, in 2015, those miners carrying heavy debt loads were particularly unloved.

In previous years, the Top 40 took advantage of favourable debt markets and locked in longer dated, lower interest debt. What they hadn't expected was the abrupt evaporation of earnings and, in some instances, this has impacted covenant compliance.

Ratings and, in turn, valuations reflected the increased liquidity risk among the Top 40.

Investors responded by reducing their exposures, whatever the longer-term investment proposition. Monetisation of both core and non-core assets was essential for some, whether executed during the year or not. Disposal programs have been accelerated and alternative financing is more widespread in the Top 40 than ever before.

Thermal coal miners are particularly exposed to challenges beyond traditional market conditions, including shifting social norms and geopolitical pressures. This has led to the declaration by some of a "war on coal" and we note the casualties of former Top 40 stalwarts Peabody and Arch Coal, which sought bankruptcy relief over the past year.



…But not defeated

It is within the power of the Top 40 to rebuild their investment propositions and rise off the canvas. But if there is one thing that 2015 has shown, it is that the foundation cannot be as dependent on China and no one holds expectations of a sequel to "Mine 2005 - Enter the Dragon."

Significant restructuring needs to continue and deal volumes are likely to reshape the industry ownership mix and hierarchy in the near future. Costs have already been cut deeply, but need to be demonstrably sustainable at these levels if prices stay depressed. Pressure will rise as attention turns to the next wave of productivity initiatives, which will have longer-term paybacks and require fundamental rethinking of structures, processes, systems, technology, organisational designs and capability needs. This is unchartered territory for the industry, at a time of rapid change in all sectors of the global economy.

A crowd favourite in 2015 emerged in lithium, cheered on by the acceleration of the battery boom. For the first time, a lithium company has made the Top 40. Whilst this must be viewed in the context of the much larger traditional energy sources, there is no doubt that the energy landscape is changing and new world disrupters will have a role to play.

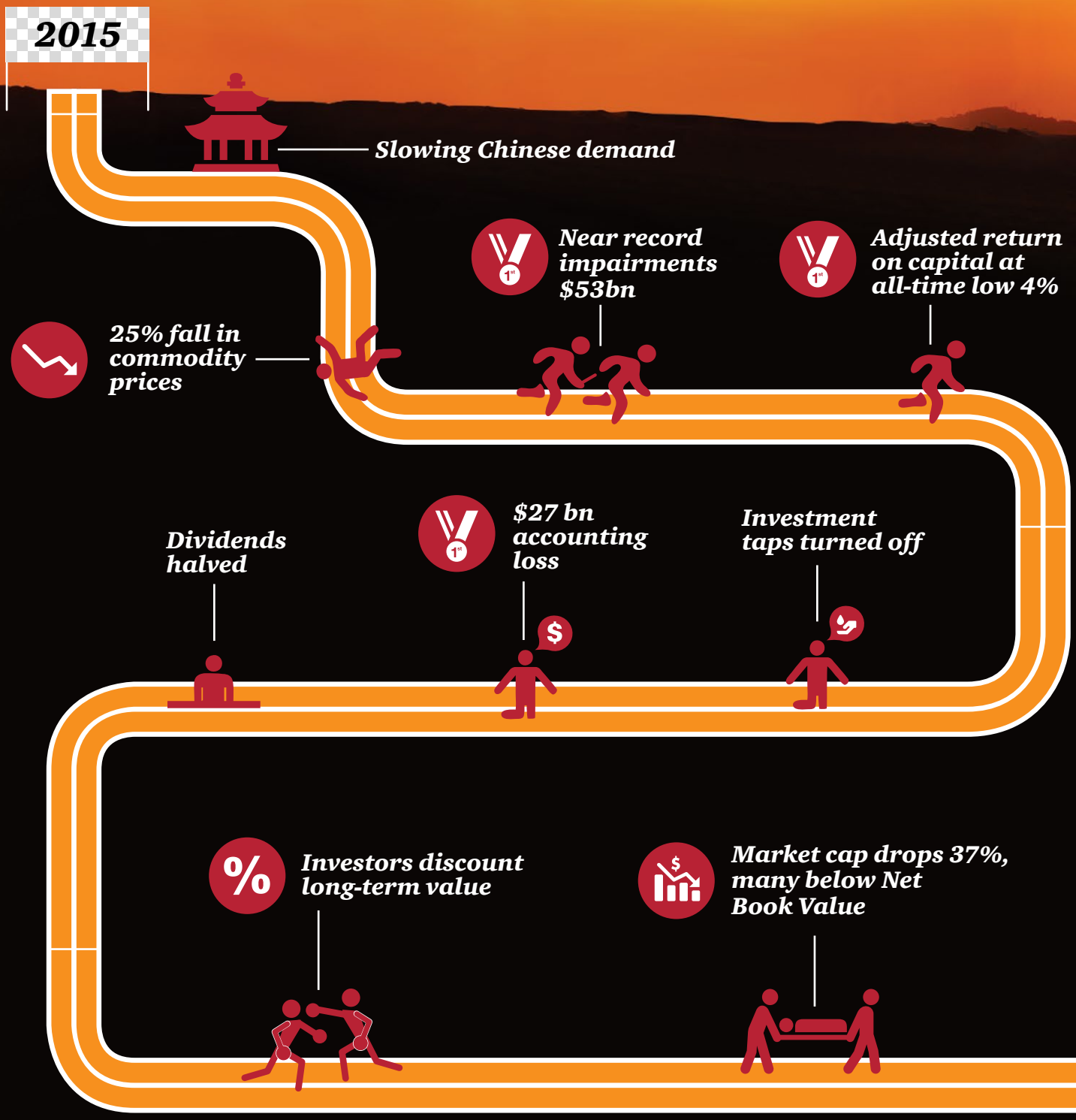
Longer term victors within the Top 40 are harder to place. How might the 2025 edition of Mine reflect on the impact of unrelenting social licence to operate pressures on the Top 40 composition? How might risk tolerances drive higher industry participation from non-traditional sources, or greater government ownership? Runners are lining up, with fresh contenders being nominated from many locations. Or will the old guard remain largely intact, proving there is no substitute for experience? Time will tell. We will explore some of these broader industry disruption themes in more detail over the coming months.

Jock O'Callaghan
Global Mining Industry Leader

Jason Burkitt
Mining Leader United Kingdom

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Mine Project Team Leader

Industry in perspective




The battery revolution
Thermal coal facing existential threats
Inroads into cost reduction
Q1 sharp rebound in commodity prices and market capitalisation off the canvas and up by 29%
Overall debt down but ¼ of the Top 40 net debt to EBITDA above 4
Ratings downgrades
Recent extreme volatility
2016

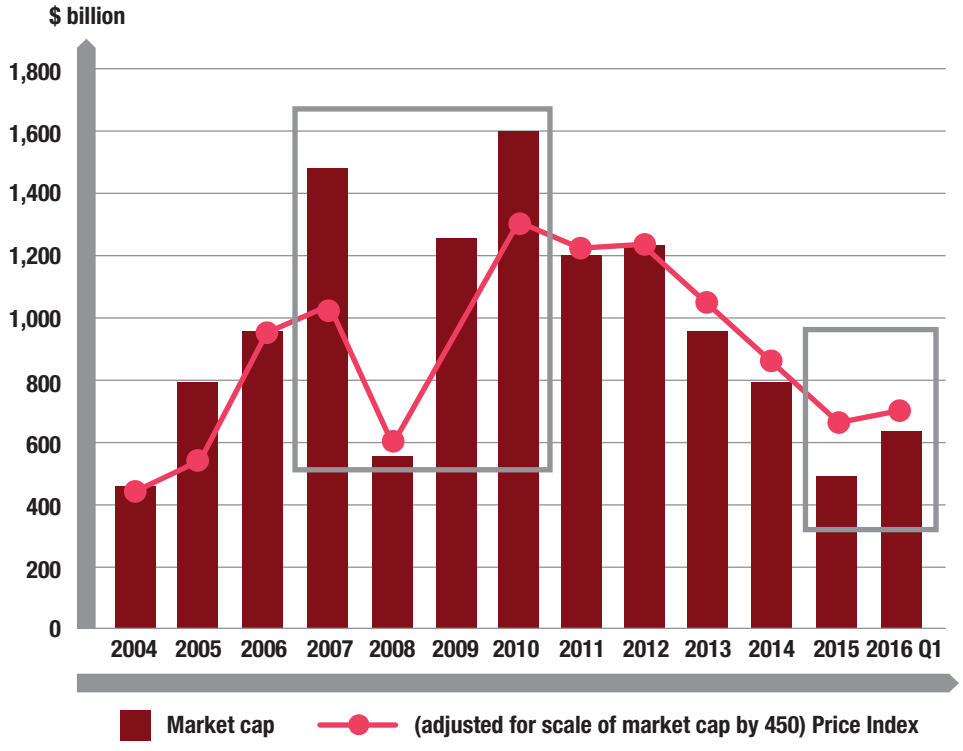
Race to the bottom

In 2015 investors were quick off the mark to short the Top 40 and growing liquidity concerns piled on the pressure for some. With fresh exposure of poor capital discipline and rock bottom returns on equity, the Top 40 beat commodities prices to the bottom.

Over the history of *Mine*, the combined market capitalisation of the Top 40 has closely tracked spot commodity prices (see the graph below). It is also true that valuations have proved more volatile than the underlying commodity price movements, overshooting in rising markets and punishing valuations in the troughs. This was clearly evident in 2015, when debt burdens suddenly began to appear unaffordable and many in the Top 40 were marked down owing to liquidity concerns, as had occurred in 2008, in the midst of the global financial crisis. With concerns peaking close to year end, the Top 40 witnessed a decline in market capitalisation of 37% during 2015, with many of the established members of the Top 40 marked below their book values for the first time in the history of our publication.

The strong correlation between the perception of the future earnings potential of the industry and short-term commodity prices is concerning, given that mining is clearly a long-term game. Although management of the Top 40 has a long-term investment focus, many shareholders struggle to overcome a "spot mentality" and are much more focussed on the short term. This impacts on the capital available for allocation in a declining market, eventually constraining supply and the conditions necessary for a new cycle to begin. When it does, shareholders will hope that capital discipline is better than during the most recent boom, and that returns on equity will be commensurate with the risks being taken. Until then, the industry will remain ***slower, lower, weaker.***

Market cap of Top 40 vs Adjusted Price Index



Market capitalisation of the Top 40 companies against an adjusted price index for a basket of commodities including copper, coal, nickel, zinc, gold, silver and iron ore.

Source: PwC analysis



Commodities prices down

25%

Liquidity squeeze

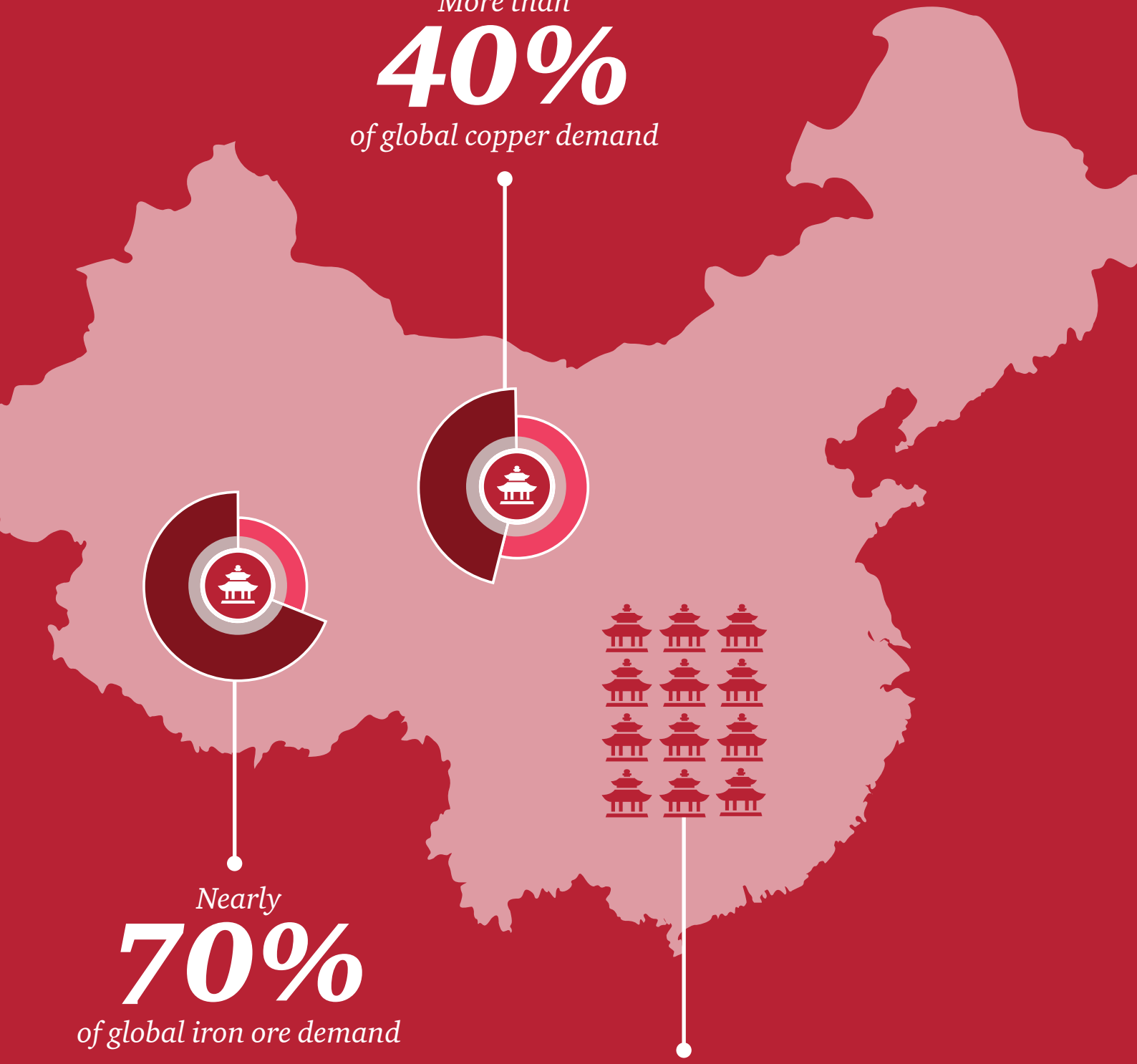
Spot mentality drives market caps down 37%

China accounts for

More than

40%

of global copper demand



Nearly

70%

of global iron ore demand

12 *of the Top 40 mining companies'*

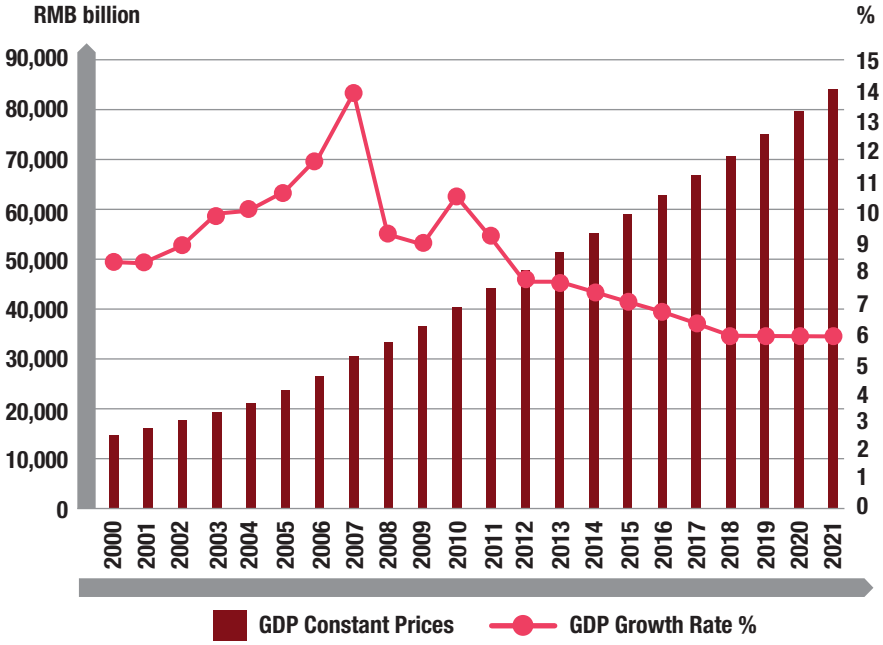
Slower...

Growth is slower and those who await a sequel to *"Mine 2005 – Enter the Dragon"* will be disappointed.

Over the past decade, global commodities demand and prices were largely driven by unprecedented Chinese growth. In the medium-term, China will continue to be crucial to the prosperity of the mining industry. Representing approximately 40% of global demand, China cannot be ignored.

However, China can no longer be relied on as the sole driver of prosperity in the sector. China's New Economic Plan highlights the nation's aspiration to transition from a manufacturing-based economy to a service-based economy. As this transition gains momentum, China's rampant demand for raw commodities seen during the boom will not be replicated.

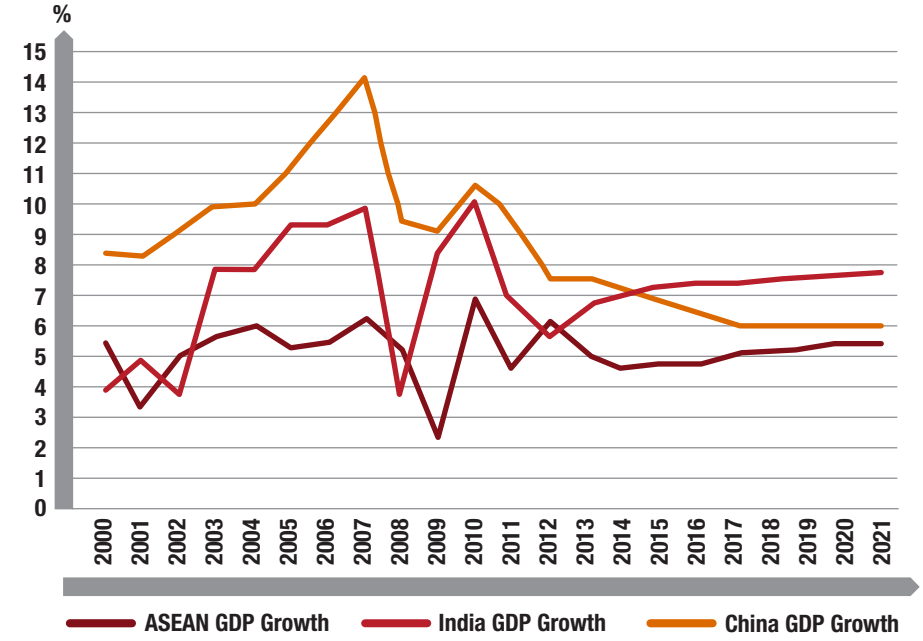
China GDP at constant prices and GDP growth rate (RMB billion)



Source: IMF

Chinese GDP growth is forecast to tail off and hover around 6% annually to 2020; this is a significant decline compared to recent decades. Nevertheless, as can be seen when tracking GDP at constant prices, China continues to grow and will remain a critical part of the mining industry's story.

China, India and ASEAN-5* GDP Growth

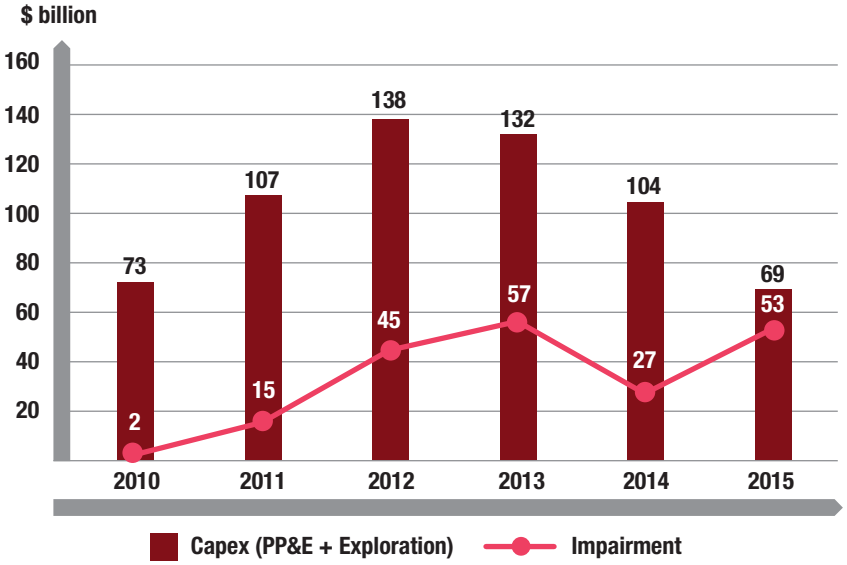


** The ASEAN-5 comprises Indonesia, Malaysia, the Philippines, Thailand and Vietnam.*
Source: IMF

There are a few notable growth regions, including the ASEAN nations and the Indian sub-continent, which will assist with future growth. However, even the most bullish observers would agree that there is no new China on the horizon.

With a further $53 billion of impairments in 2015, miners have now collectively impaired the equivalent of 32% of their actual capex since 2010, implying that significant value has been destroyed

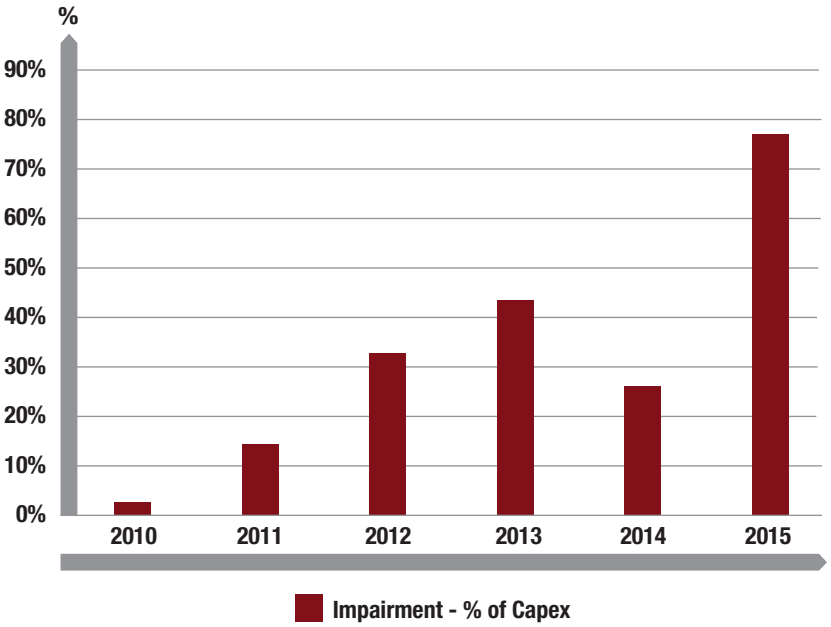
Capex vs impairment



Source: PwC analysis

Impairments of $53 billion in 2015 may not be an absolute record, but at 77% of 2015's capital expenditure, this is the highest proportion ever recorded. While it is perhaps unfair to focus on the charges incurred this year as price assumptions were adjusted down, a longer-term perspective highlights a lack of capital discipline. In fact, from 2010 to 2015, the Top 40 have impaired the equivalent of a staggering 32% of their capex incurred.

Top 40 impairments as a percentage of capital expenditure



Source: PwC analysis

During the mining boom, in an effort to continually increase production, mining companies undertook expansion strategies that included unrestrained capital spending programs and high-priced mergers and acquisitions. Often, a disciplined capital allocation approach was lacking and this exposed many companies to significant write-downs when commodity prices inevitably subsided from their historic highs. Glencore, Vale, Freeport and Anglo-American have arguably been the hardest hit, with impairments totaling nearly $36 billion, or 68% of the total impairment recorded across the Top 40.

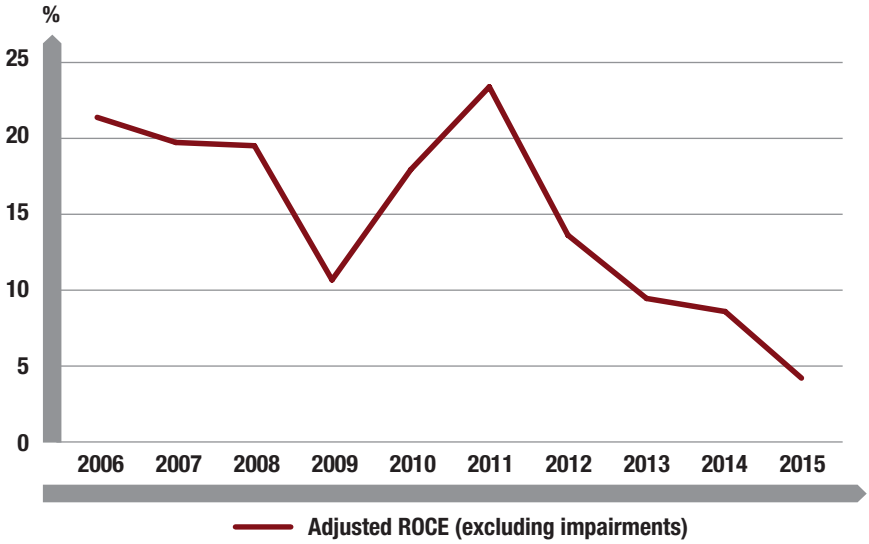
Investors will not be surprised by the continued decline in capital expenditure. In fact, they have demanded it. Less welcome is the acceleration in impairments relative to capex. Such value destruction has not gone unnoticed and has contributed to the ongoing negative sentiment.

Capital efficiency hits at an all-time low

In 2015, the adjusted return on capital employed (ROCE) halved from 8% to 4% year-on-year, reaching a record low in the history of *Mine*. This compares to the commonly cited 15% hurdle rate for new projects and the rising costs of capital.

This reduction occurred despite the total capital employed dropping 24% year-on-year in 2015, as companies reduced spending and focused on managing their working capital. While significant sums were still spent on projects, after allowing for depreciation, impairment and disposals, the Top 40 reduced investment on property, plant and equipment from $650 billion to $580 billion. Ultimately, the sharp fall in earnings drove down the returns, even excluding impairments. Without impairments included, the ROCE was negative.

Top 40 adjusted return on capital employed (ROCE)



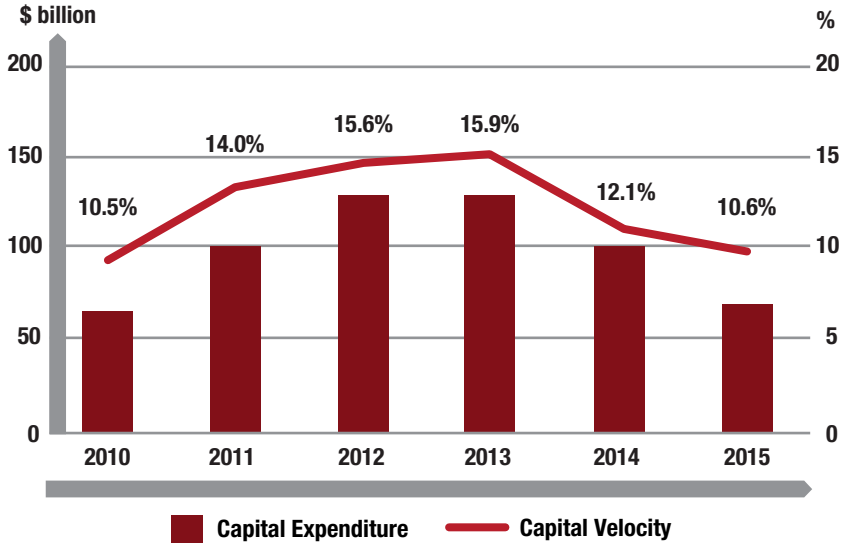
Source: PwC analysis

The significant drop off in capex will inevitably slow future growth

Capex fell to just $69 billion in 2015 – half of the levels seen in 2012 and 2013.

Cutbacks and capex reductions, in particular, have been a running theme among the Top 40, as decision-makers look to maximise value from current assets. 2015 saw the first wide-scale mothballing of marginal assets. As a result, capital velocity has decreased to 10.6%, with the pursuit of growth consigned to the sidelines for now. Given the spot mentality brought about by lower returns and poor capital deployment in the past, few of the Top 40 have indicated they will sanction major expansion projects in the near future, even if they have the firepower to do so.

Top 40 capital velocity compared to capital expenditure



Source: PwC analysis

Shedding assets to survive

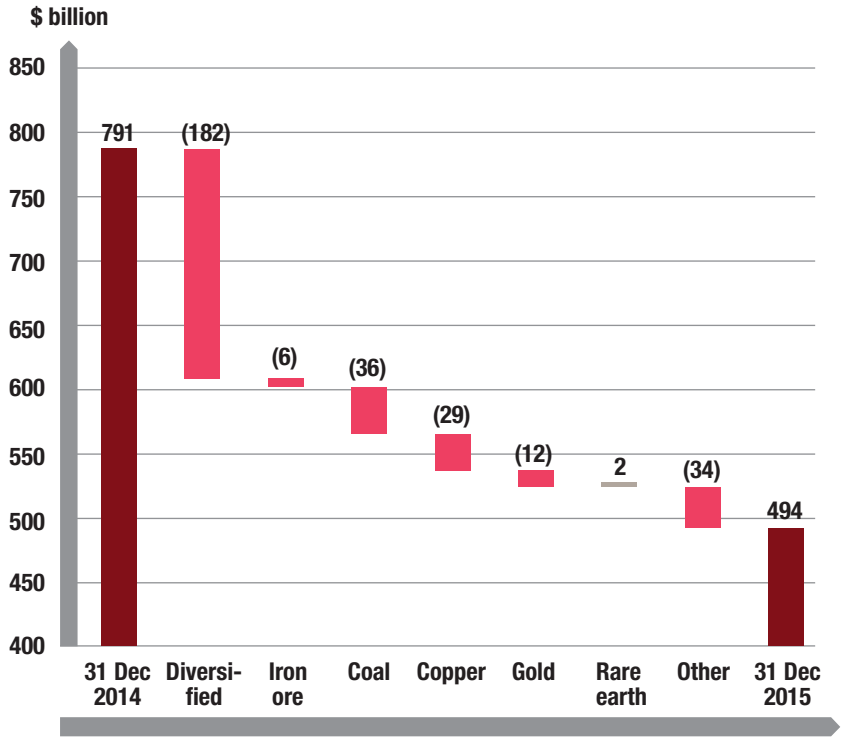
Major traditional miners began the year attempting to manage debt and shedding non-core assets, as part of a broader streamlining and consolidation effort. This is evident from an examination of assets held for sale, disclosed on companies' balance sheets. Almost a third of the Top 40 had acknowledged having assets on the block at year end. Many more will be under consideration in 2016 if the current pricing conditions continue.

Weakening commodity prices introduced a sense of urgency with these efforts, pushing companies to monetise assets and shore up their debt-burdened balance sheets. This has continued into 2016 with two recent high profile examples being Freeport McMoRan's sale of the Tenke copper project for $2.6 billion and Anglo American's sale of its Brazilian niobium and phosphates business for $1.5 billion.

Lower...

Market capitalisations dive 37% – $297 billion lost and market capitalisations below Global Financial Crisis levels.

Movement in top 40 market capitalisation



Source: PwC analysis
NB: 2014 market capitalisation is as reported in Mine 2015

The market capitalisation for the Top 40 was $494 billion by the end of 2015 – a 37% decrease from 2014 and the lowest level seen since 2004. All gains made during the commodity super-cycle were effectively wiped out. The collapse was all the more painful for producers in 2015 because the value destruction was perceived as self-inflicted, whereas during the global financial crisis, by contrast, extraneous market forces drove valuations down across multiple sectors.

The current market capitalisation of the Top 40 is only a third of its value from five years ago, retracing its steps to the position it held prior to the huge spending that occurred to expand supply at a time when demand was slowing.

Only nine of the top 40 companies showed increases in market capitalisation. Of these, four were gold companies, reflecting the stronger performance of gold relative to the other commodities.

The declines in market capitalisation were disproportionately spread between traditional and emerging companies.

2015
Lost Value

Emerging Companies

22%

$64bn

Among the emerging companies, there were, some notable gains.

Three Chinese companies:

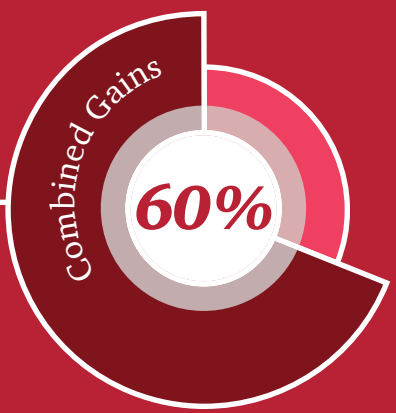
- Sichuan Tianqi Lithium
- Tongling non-ferrous metals
- Zhongjin Lingnan non-ferrous metals

Traditional Companies

45%

$226bn

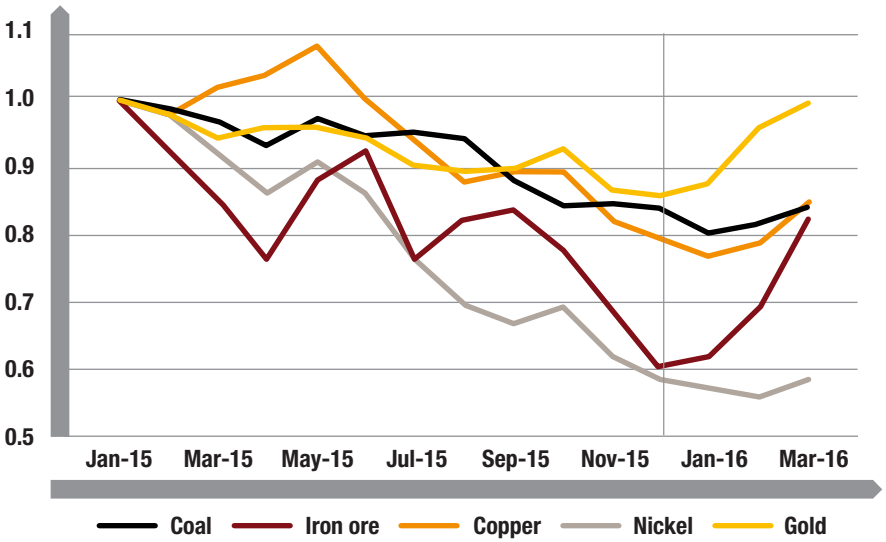




Commodity prices plunge

2015 saw a year-on-year decline of 25% in our commodities price index. Whilst individual commodity prices fluctuated throughout the year, nickel was the worst performer, dropping by 41%. Iron ore was a close second, falling 40%. Gold dropped by a relatively modest 14% in 2015, and also rallied strongly in Q1 2016.

Price indices, selected commodities (January 2015 = 1)

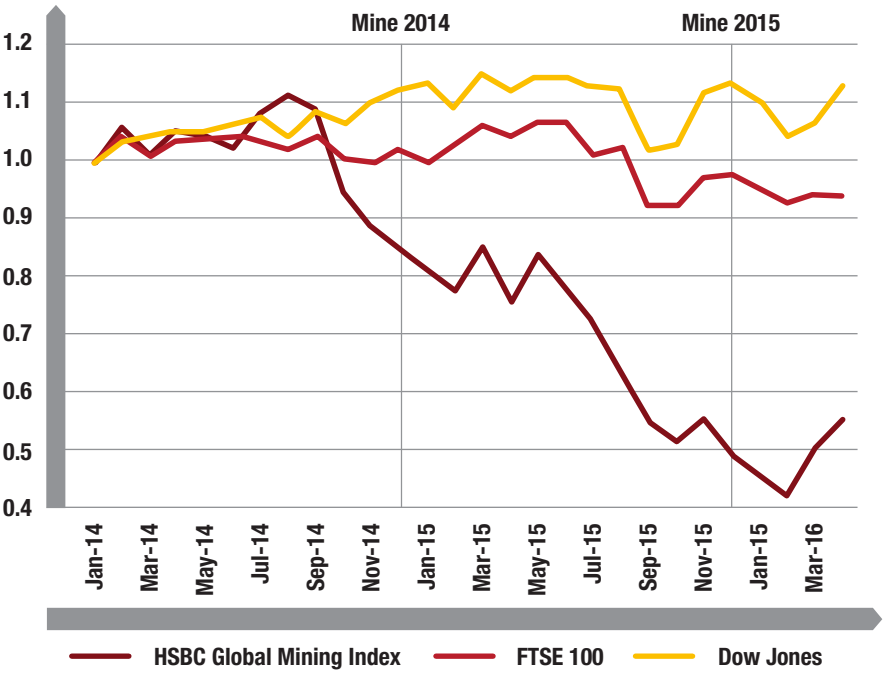


Source: The World Bank

The gap between miners and the broader market widens

The 2014 edition of *Mine* noted a gap emerging between the HSBC Mining Index and the broader market in late 2014. That trend continued in 2015. Whilst the FTSE 100 was down 4% and the Dow Jones up 1%, the HSBC Global Mining Index was down a staggering 42%. This disparity illustrates the generally pessimistic sentiment currently held towards the industry.

Global mining indices (2014=1)



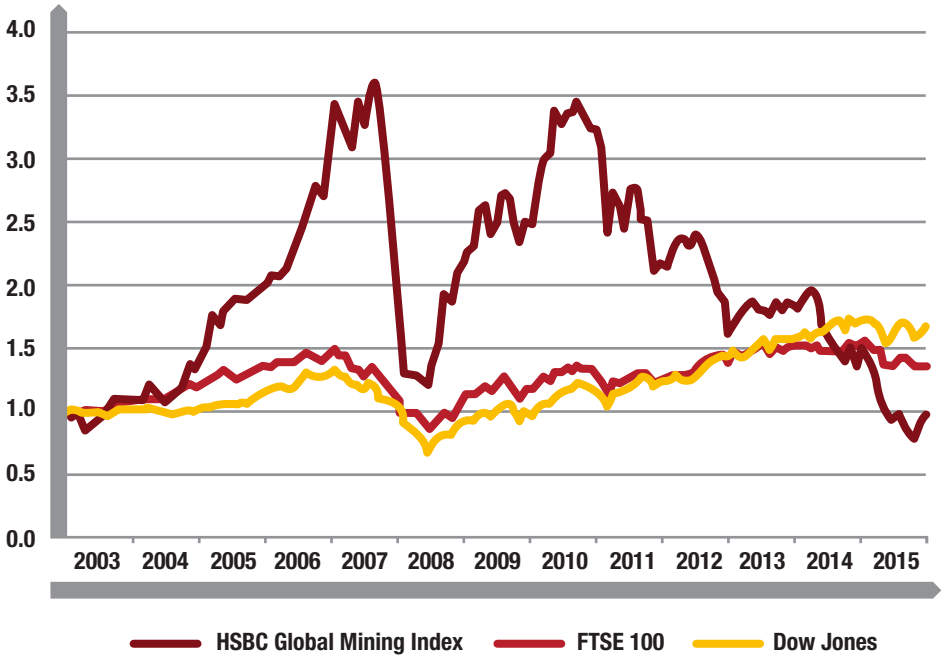
Source: Bloomberg

How low can you go?

During the depths of the global financial crisis, it was hard to fathom that global sentiment towards the mining industry could ever get worse. However, throughout this period, the HSBC Global Mining Index tracked higher than the FTSE 100 and Dow Jones – a far different scenario than we are currently witnessing, where the reverse has happened. There are a few possible explanations for this counterintuitive scenario. In 2009, the industry was partially insulated by a medium-term view that the inevitability of Chinese growth would support a mining recovery. This perspective proved correct in the short term – mining companies rebounded strongly from 2009-2011. However, since early 2011, the value of mining stocks has slowly eroded in relation to broader market indices.

By 2014, the headroom had completely disappeared between the indices, with mining stocks underperforming in relation to the other indices. Since the peak of May 2008, the HSBC Mining Index has lost nearly 80%. By February 2016, the index reached a new low. More alarmingly, the index has fallen 36% beyond the lowest point reached during the global financial crisis, in February 2009.

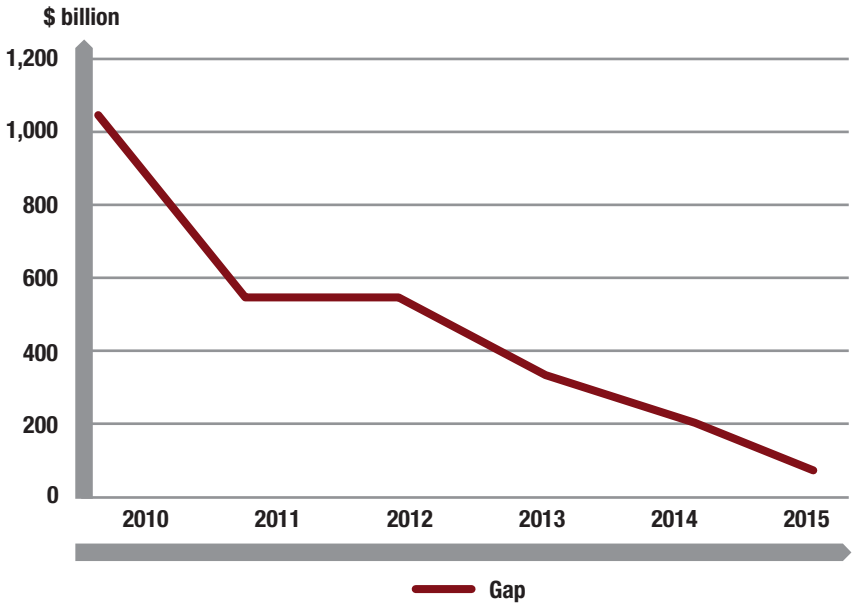
Global indices over the life of Mine (December 2003 – April 2016)



Source: Bloomberg



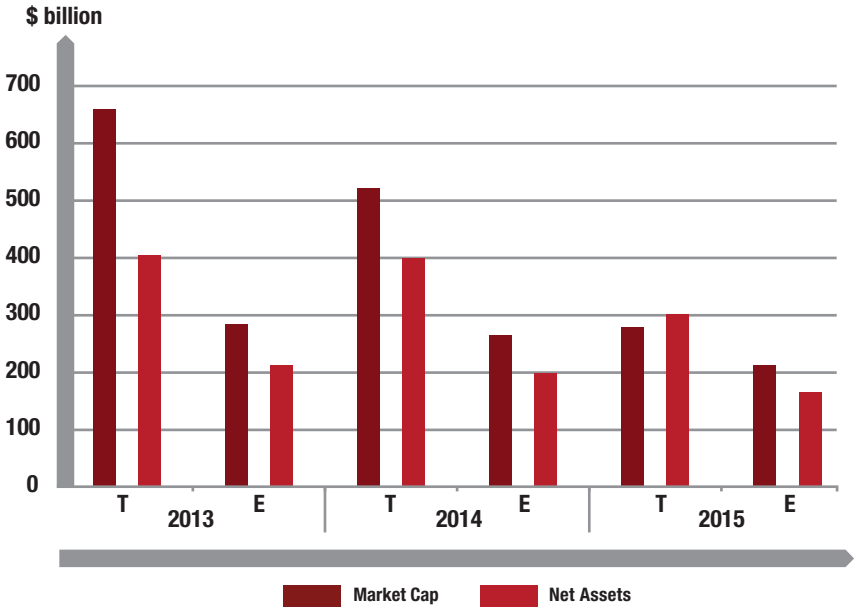
Headroom of market capitalisation over net book value



Source: PwC analysis

The combined market capitalisation for the Top 40 reached its peak in 2010, exceeding combined book values by more than $1 trillion (65%). By the end of 2015, this gap had shrunk to just $18 billion (4%). In total, 15 of the companies have market capitalisations that are below book value, up from 12 companies in the previous year.

Market capitalisation vs net book value of traditional and emerging companies



Source: PwC analysis

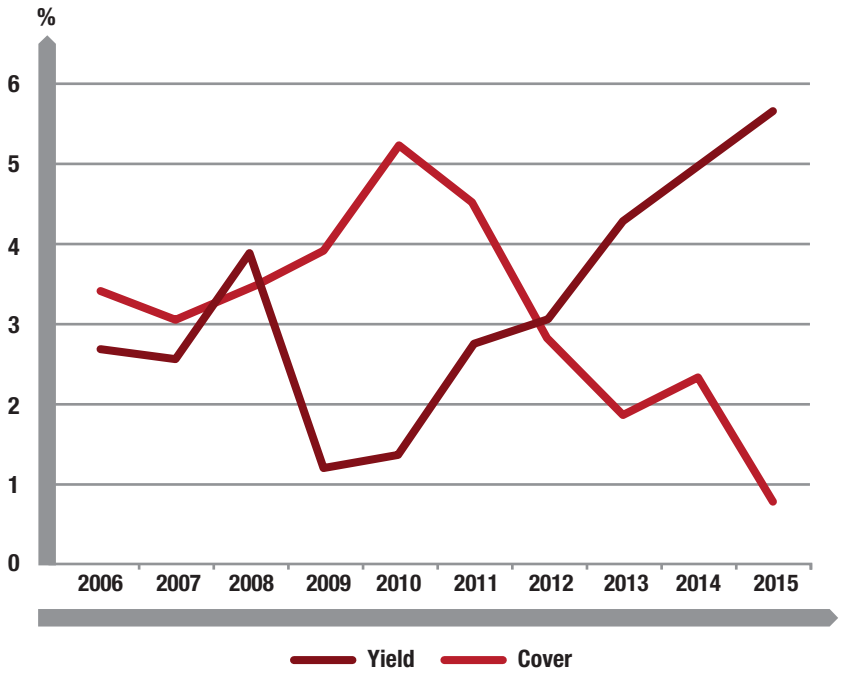
In 2015, the combined market capitalisation of the traditional companies went below book value. The huge premiums attributed to these companies during the boom have disappeared. With most of the inherent value of these companies being in the ground, rather than on balance sheets, investors are either expecting to get no incremental value in the future from the reported reserves or are placing no upside value to what is carried on the balance sheet. Irrational? Or can investors be forgiven for this view, given the recent history of impairments and the lacklustre shareholder returns?

Valuations of emerging companies have generally held up better than those for traditional companies. Although they have fallen, in 2015 they remained above book values, and these companies have seen fewer impairments to date.

Investment returns miss the target

Until recently, increasing dividend yields grabbed the headlines. However, increasing yields were actually more a reflection of the market capitalisation challenge than of the fortunes of mining shareholders. The yields mask a complete u-turn from boom-time dividend policies. More companies have now announced clear percentages of profit distribution policies. The big story today is the abandonment of progressive dividends by the majors, confirming that no miner was immune from a sustained commodity cycle downturn, however diversified their portfolio.

Dividend coverage and yield



Source: PwC analysis

Little from the boom and even less in the bust

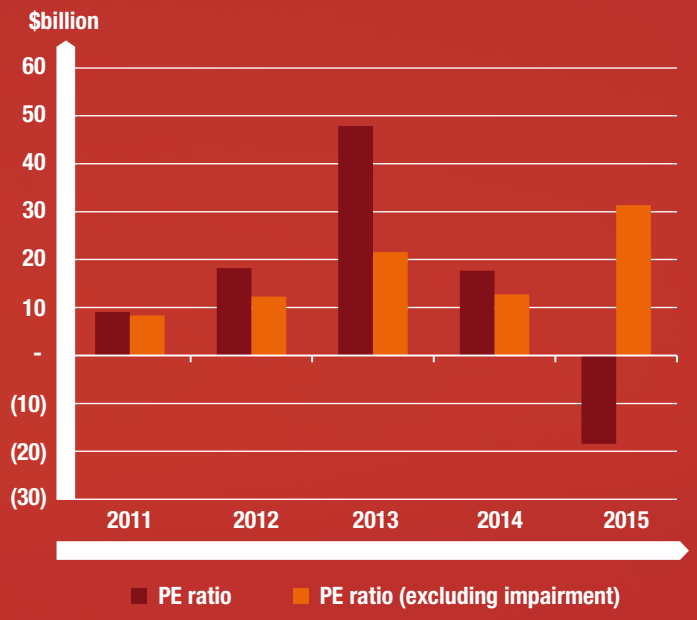
Shareholders were not fully rewarded for the high commodity prices and huge profits experienced in the boom, as management ploughed cash and profits into bigger and more marginal assets. During those times, production was the main game and shareholders were rewarded through soaring stock prices. However, this investment proposition relied on prices remaining high.

The Top 40 attempted to address poor shareholder returns by continuing to pay dividends in 2014 and 2015, but it was "too little too late", as the cash dried up, locked into assets that are not able to realise value at the lower prices.

With many Top 40 companies turning off capital expenditure and shedding non-core assets, it appears that management is aware of shareholder discontent with poor investment decisions in the past. However, in a year where the industry reported an overall net loss, dividends will remain a luxury, as companies pay down debt and strengthen balance sheets.

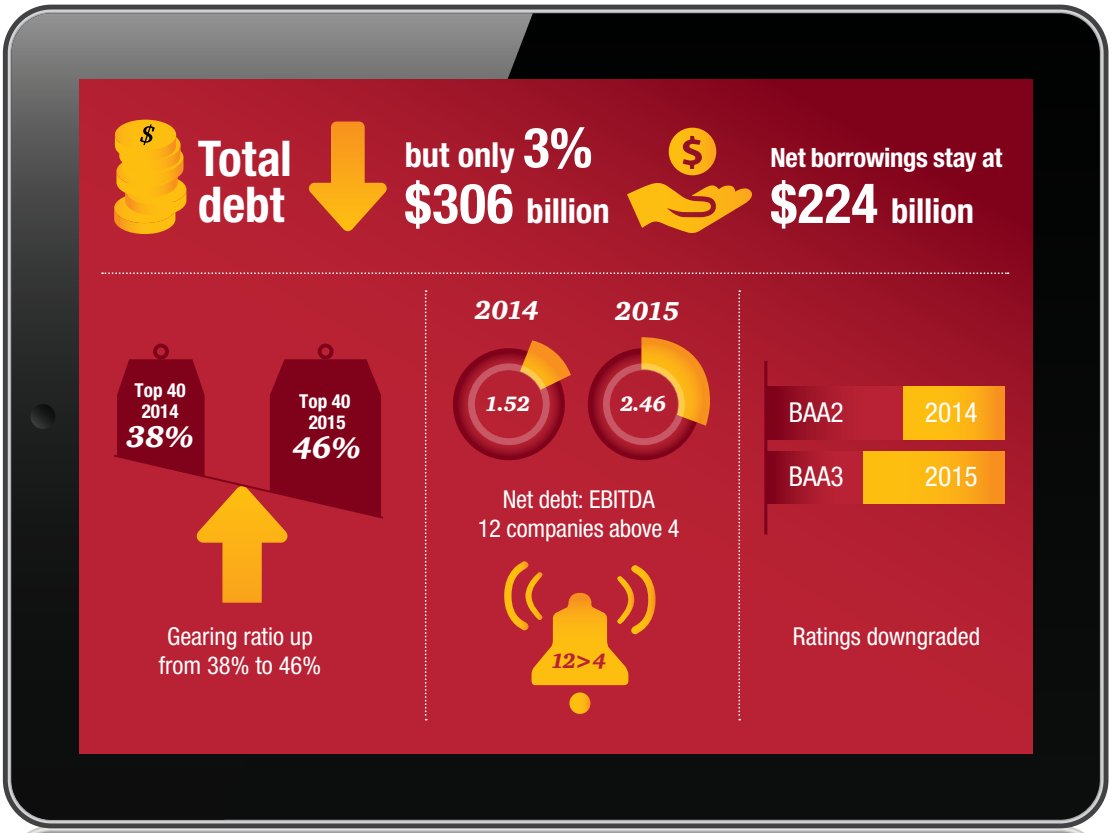
Price to earnings ratios may indicate further pain ahead

Although there are limitations with backward-looking PE ratios, the numbers do indicate a worrying trend. For the first time in the history of *Mine*, PE ratios in the industry were negative. Surprisingly, when adjusted for impairment, the PE ratio spiked to 31.4, up from 12.7 in the previous year. This is an indication that, based on the adjusted low level of earnings, there is still a valuation premium when compared to the low margins experienced in 2015. This high adjusted PE ratio does little to support the notion that the bottom has been reached.



Weaker...

Debt burdens will mean heavy lifting – gearing is up to the highest on record and key liquidity ratios are raising alarm bells for many.



This is the first edition of *Mine* where we have observed a sustained deterioration in the viability of the Top 40. Even during the global financial crisis, the liquidity crunch was quickly solved through a combination of rights issues and a sharp rally in commodity prices. Cheap and readily available debt was used to fund investment programs. However, with the softening market, today's earnings are not always sufficient to provide absolute confidence that the borrowings will be repaid when they become due.

Accordingly, debt management has risen up the agenda of many of the Top 40. For some, the driver was maintaining access to capital at reasonable rates. For others, it was simply crucial to survival. The Top 40 trimmed total debt by $10 billion or 3% in 2015. Despite this, net debt remained stagnant and liquidity metrics have begun to trigger some alarms.

Short-term borrowings, requiring repayment within 12 months, have increased by 9% to $48 billion. The change in maturity profiles was most stark among emerging companies, where short-term borrowings increased from 16% of total in debt in 2014 to 22% in 2015.

While the Top 40 may have been comfortable with their level of borrowings at the start of the year, their perceived ability to service this debt came into sharp focus during the year as their earnings deteriorated. The key net debt to EBITDA ratio, often a covenant applied by lenders, rose by 62%, from 1.52 to 2.46, from 2014 to 2015. Alarmingly, 12 of the Top 40 have a net debt to EBITDA ratio above four. This figure is a staggering increase from the previous year, when only four companies had such a high ratio.

In addition to this, the falling market capitalisations of a number of former highly-geared Top 40 members forced them out of our sample altogether. These companies included Consol Energy Incorporated, ALROSA and First Quantum Minerals Limited, all had gearing levels above the previous year's Top 40 average of 43%.

Ratings downgraded

It is perhaps no surprise that credit rating agencies announced a series of credit downgrades in 2015. Some companies, including Anglo American and Vale, were even relegated to below investment grade.

The Top 40's response has been twofold: even greater focus on cutting expenditure, whether operational or expansionary, and an acceleration in asset sales. Until now, non-core asset sales volumes have been subdued, as buyers and sellers contemplated the value expectations gap. However, the pressing need for miners to monetise assets is changing this dynamic. Combined with speculation that the bottom may have been reached, the scene has been set for a large increase in deals, which we expect will eclipse the $14 billion of disposals realised in 2015. The question remains whether coveted tier 1 assets and/or less marginal assets may change hands. What is clear is that the need to monetise assets now has increased the Top 40's appetite to consider all options, as evidenced by the recent streaming deal announcements.

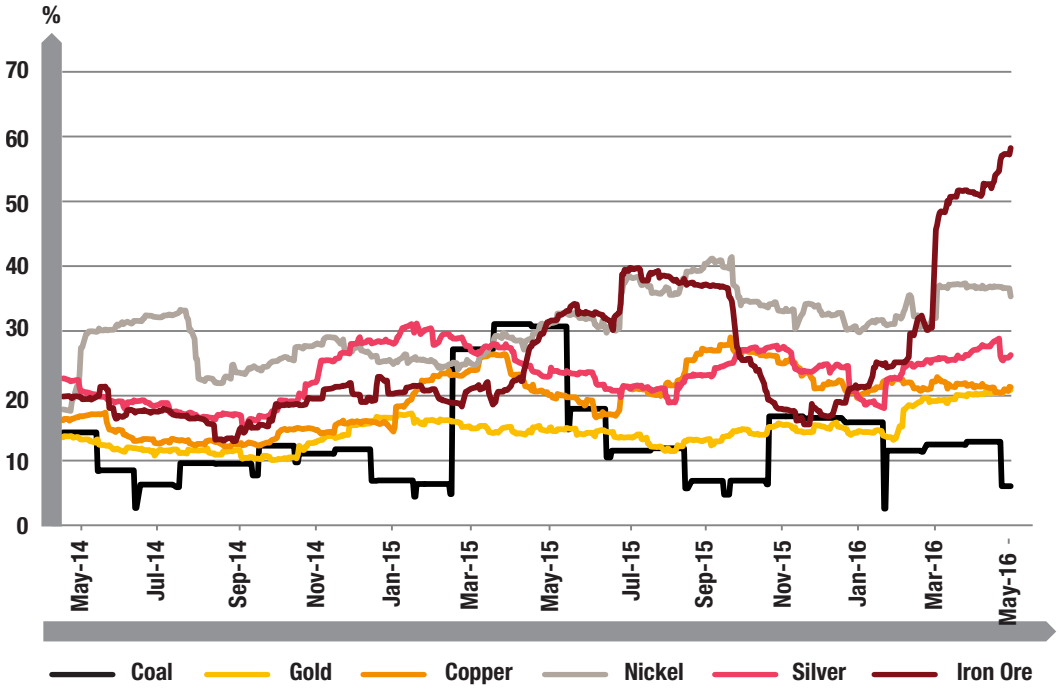
Extreme volatility – 2016 has seen a sharp reversal in commodity prices but, with extreme volatility, it is still premature to call 2015 the bottom

Early 2016 saw growth among the Top 40 in terms of market capitalisation, which increased by 30% to the end of April. We attribute these movements to the upswing in commodity prices witnessed since the beginning of the year, along with the execution of debt market management. Diversified and gold companies have benefitted most, as the result of a bounce in gold and iron ore prices. Coal, conversely, has not experienced a resurgence; a reminder of the challenges that this sector faces.

Last year, we identified increased levels of volatility in commodity prices and the need for miners to adopt more flexible strategies. 2015 continued this theme, particularly in the iron ore market, where prices plummeted to levels not seen since the global financial crisis. Volatility (tracked over 10, 30, 50 and 100 days) saw record highs reached in 2015 and it gathered momentum, albeit unexpectedly, in early 2016.

It is unlikely that global demand for iron ore will return to pre-crash levels. China, alone, cannot be relied on for the commodity's revival. However, demand is only one part of the iron ore volatility picture. Speculative futures trading has also impacted on the commodity's strength. Recent efforts by the Chinese Government and commodity exchanges to tackle the problem of speculative trading, by reducing trading hours and raising fees, have been publically welcomed by many industry chiefs.

Three month rolling volatility - 24 months

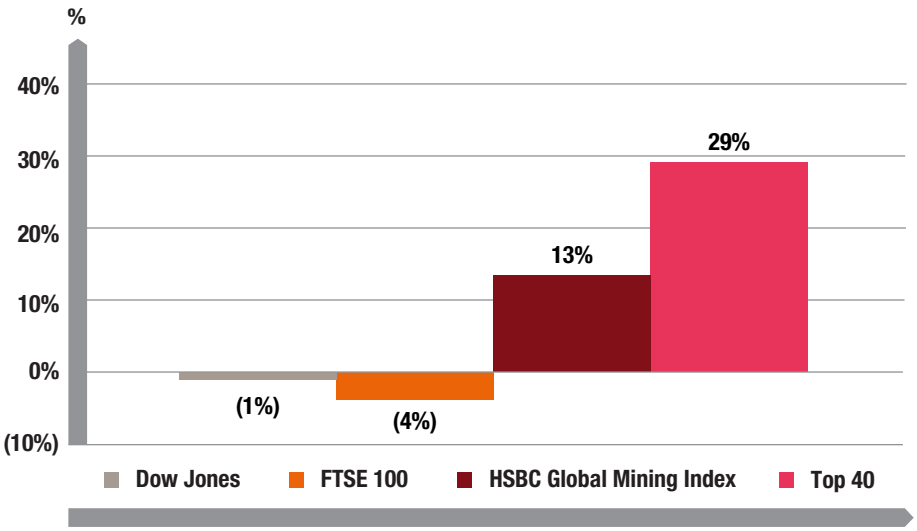


Source: PwC analysis

… But not defeated

2016 rebounds strongly, for now…

Global indices vs Top 40 market capitalisation (Q1 2016)



Source: PwC analysis and Bloomberg

The start of 2016 brought some welcome relief. Commodity prices were generally up and the HSBC Global Mining Index rebounded 13% to the end of March 2016. Over the same period, the Top 40 fared even better, experiencing a climb of 29% in their market value. These numbers were especially positive, given that the FTSE 100 and Dow Jones contracted 4% and 1%, respectively, over the same period.

The widening gap between miners and the broader market indices that we have reported since 2014 started to reverse, albeit with much volatility (previously noted above).

2014 OPEX
$502bn

2015 OPEX
$419bn

Key contributors

Production increases

External benefits*

Controlled by management

* See detail on page 32

Cost cutting initiatives widespread and effective

Although it is difficult to isolate and compare data on the quantifiable benefits and relative successes of cost cutting initiatives, our analysis suggests (see page 32 of financial analysis) that management has delivered actual costs savings from their initiatives announced in the preceding years.

The Top 40 appear to have worked smarter and implemented more productive methods to drive greater volume growth from existing plant and equipment at lower unit costs.

A noteworthy example of reported cost reductions in 2015 was BHP Billiton's reduction in operating cash costs of $2.7 billion and the generation of productivity-led volume efficiencies of $1.2 billion. After reporting $2.9 billion in cost savings in 2015 (due to a combination of internal and external factors), Rio Tinto announced it would further cut cash costs by $1 billion per annum in 2016 and 2017.



The War on Coal

Of all commodities, thermal coal has been the most maligned over the past year. One would be hard pressed to find a near-term prognosis of prosperity anywhere within the mining and energy sectors. Although the emerging economies, particularly the Indian sub-Continent and Southeast Asia, may drive future import demand, it is highly unlikely that they will replace the unprecedented demand from China witnessed over the past decade.

Although China's waning demand has occupied the spotlight, it is one component of a broader social and geopolitical trend that has been referred to by some as a "war on coal". Some major banks are no longer financing coal-fired power plants, historical stalwarts of the United States coal industry, Peabody Inc. and Arch Coal, both filed for bankruptcy in 2015, coal production in the United States fell 39% from early April 2015 to April 2016, and divestment has become a running theme in the coal narrative just as closure and cleaner technology had been in the power sector.

Coal has also been under pressure owing to technological advancements and the reduced costs of less carbon-intensive energy sources, particularly renewables and LNG. Solar installations and solar adoption have moved at a pace faster than many predicted, as a result of reduced costs and improved battery storage. These developments offer new opportunities and markets for mining companies that can adapt to the changing energy mix.

Nevertheless, in the short – and medium-term, coal remains the most inexpensive energy source we have and there are 1.2 billion people on Earth without access to electricity. Although the movement to "phase-out" coal is real, the commodity will continue to play a critical and significant role in the energy mix of many economies.

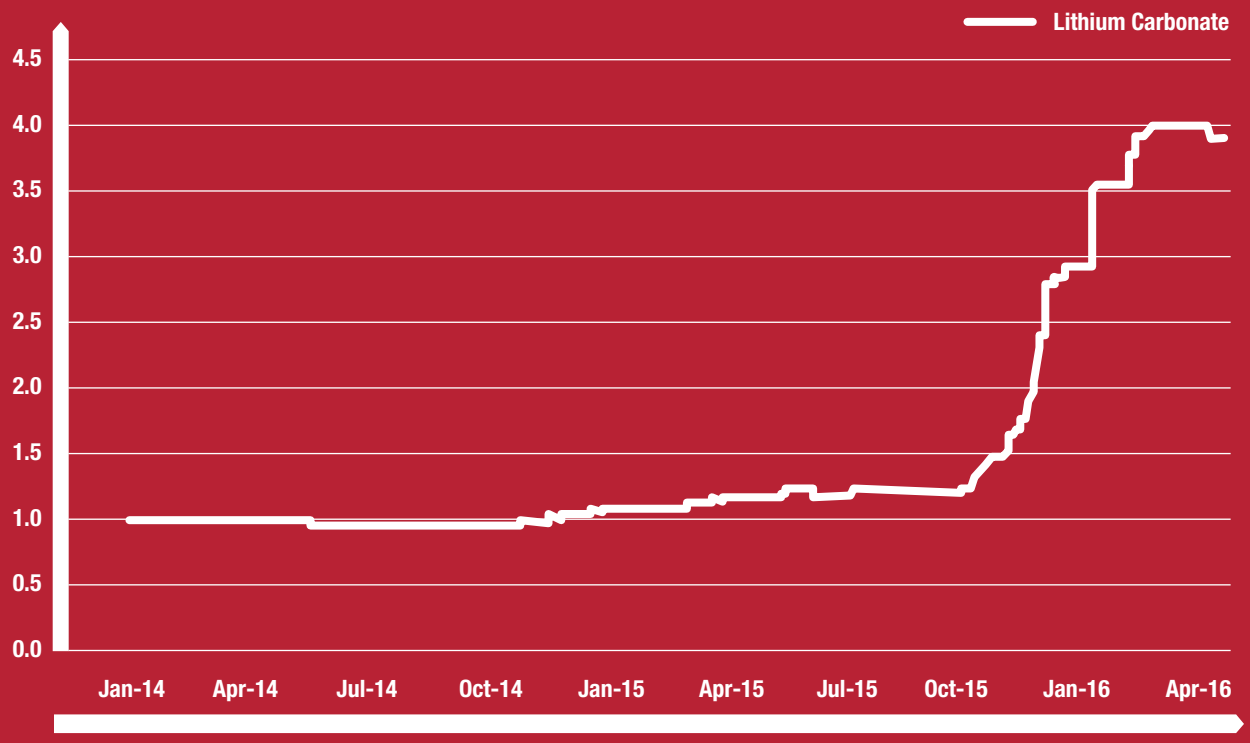


The battery revolution leads to lithium's rise

While coal's fortunes have been less than optimal, lithium has been the darling of investors, with prices effectively doubling over the past six months. Lithium has experienced unprecedented demand over the past year due to its widespread application in batteries. A key component of this is a widely anticipated shift from fossil fuel based cars to electric vehicles over the next decade.

Deutsche Bank now forecasts that the global lithium supply market will triple over the next ten years. Two questions have been asked in regard to the sustainability of growth in lithium: 1) whether lithium-battery technology will be supplanted by other energy sources, such as hydrogen fuel cells; and 2) whether the boost to lithium resulting from anticipated electric vehicle adoption will result in oversupply and, subsequently, flattening of its growth. However, it is unlikely that lithium will be replaced in the near term. Large corporate actors – particularly in the electric vehicle market – are designing their products around lithium-ion technology and this will not change overnight. Lithium's long-term demand remains to be seen, as other technologies requiring new metals could replace lithium at the top of the commodity podium. In the near term, however, the oversupply scenario can't be ignored. As seen over the course of this publication, speculation often overshoots demand and lithium may not be an exception, as miners shift rapidly into the South American market and Deutsche Bank forecasts supply tripling over the next 10 years.

Lithium Carbonate Mid Price Index (Jan 2014 = 1)



Source: Thompson Reuters

The Top 40

Name	Country(**)	Traditional (T) v Emerging (E)	Year End	2015 Ranking	2014 Ranking
BHP Billiton plc/BHP Billiton Limited	UK/Australia	T	30-Jun	1	1
Rio Tinto plc/Rio Tinto Limited	UK/Australia	T	31-Dec	2	2
China Shenhua Energy Company Limited	China/Hong Kong	E	31-Dec	3	3
Coal India Limited	India	E	31-Mar	4	6
MMC Norilsk Nickel	Russia	E	31-Dec	5	11
Glencore plc	UK/Australia	T	31-Dec	6	4
Grupo México S.A.B. de C.V.	Mexico	T	31-Dec	7	10
Vale S.A.	Brazil	E	31-Dec	8	5
Potash Corp. of Saskatchewan, Inc.	Canada	T	31-Dec	9	7
Saudi Arabian Mining Company (Ma'aden)	Saudi Arabia	E	31-Dec	10	19
The Mosaic Company	United States	T	31-Dec	11	12
China Coal Energy Company Limited	China/Hong Kong	E	31-Dec	12	14
Zijin Mining Group Co. Ltd	China/Hong Kong	E	31-Dec	13	17
Goldcorp Inc.	Canada	T	31-Dec	14	13
Newmont Mining Corporation	United States	T	31-Dec	15	20
Barrick Gold Corporation	Canada	T	31-Dec	16	15
China Northern Rare Earth (Group) High-Tech Co. Limited *	China/Hong Kong	E	31-Dec	17	40
Freeport-McMoRan Copper & Gold Inc.	United States	T	31-Dec	18	9
Fresnillo plc	UK/Mexico	T	31-Dec	19	New
Polyus Gold International Limited	UK /Russia	T	31-Dec	20	22
Shaanxi Coal Industry	China/Hong Kong	E	31-Dec	21	New
Newcrest Mining Limited	Australia	T	30-Jun	22	32
Sumitomo Metal Mining Company	Japan	T	31-Mar	23	25
Uralkali	Russia	E	31-Dec	24	36
Antofagasta plc	UK	T	31-Dec	25	16
Jiangxi Copper Company Limited	China/Hong Kong	E	31-Dec	26	24
Anglo American plc	UK	T	31-Dec	27	8
Agnico-Eagle Mines Ltd	Canada	T	31-Dec	28	37
Randgold Resources Limited	UK	T	31-Dec	29	34
AngloGold Ashanti Ltd	South Africa/ United States/ Australia	T	31-Dec	30	New
Sichuan Tianqi Lithium	China/Hong Kong	E	31-Dec	31	New
NMDC Limited	India	E	31-Mar	32	21
Tongling Non Ferrous Metals Group	China/Hong Kong	E	31-Dec	33	New
Yanzhou Coal Mining Company Limited	China/Hong Kong	E	31-Dec	34	26

Name	Country(**)	Traditional (T) v Emerging (E)	Year End	2015 Ranking	2014 Ranking
Silver Wheaton Corporation	Canada	T	31-Dec	35	2014 Top 40
Cameco Corporation	Canada	T	31-Dec	36	33
Zhingjin Lingnan Non Ferrous Metals	China/Hong Kong	E	31-Dec	37	New
Shandong Gold Mining Company Limited	China/Hong Kong	E	31-Dec	38	39
Inner Mongolia Yitai Coal Company Limited	China/Hong Kong	E	31-Dec	39	18
Fortescue Metals Group Limited	Australia	T	30-Jun	40	31

* Inner Mongolia Baotou Steel Rare-Earth Hi-Tech Co., Ltd
** Refers to country of primary listing where shares are publicly traded

We use the Top 40 companies by market capitalisation at 31 December 2015 as a proxy for the performance of the mining industry. The explanatory notes detail how we aggregate and analyse the financial information of the Top 40 companies.

Changes to the Top 40 this year include:

- Four new entrants, all of which are Chinese companies: Shaanxi Coal, Sichuan Tianqi, Tongling and Zhongjin Lingnan.
- Fresnillo has been included instead of Penoles (due to Fresnillo having a larger market cap and the avoidance of double counting).
- AngloGold Ashanti has remerged in the Top 40 for the first time since 2013.

Notable changes in the composition of the Top 40 include:

- The number of Chinese companies has risen from nine to 12 (even though one Chinese company dropped out from last year).
- Notable absentees from the 2014 Top 40 include First Quantum and Teck Resources. Previous Top 40 companies Goldfields and Kinross again failed to regain Top 40 status.
- The market capitalisation threshold for attaining Top 40 status remained consistent at $4.5 billion, which is surprising, given the huge decreases in value of the top mining companies, and demonstrates that the new entrants are catching up.
- The number of emerging companies included in the Top 40 has increased by two and now totals 19. There is now an almost even split between the emerging and traditional companies in the Top 40.



Financial analysis

First net loss in history of Mine

Adjusted EBITDA declined by 39%

Costs down, but offset by lower prices

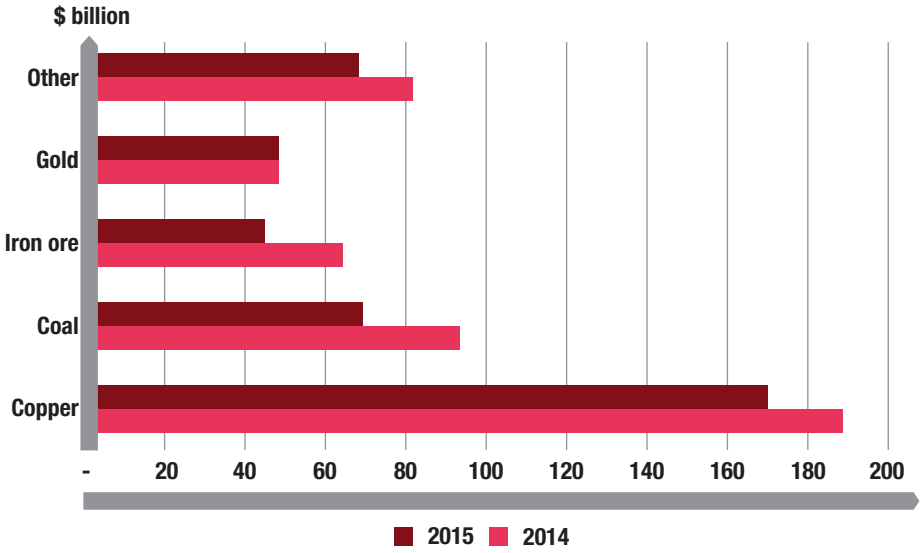
Income statement

$ billion	2015	2014	Change (%)
Revenue	539	678	(21%)
Operating expenses	(419)	(502)	(17%)
Other operating expenses	(29)	(27)	7%
Adjusted EBITDA	91	149	(39%)
Impairment charges	(53)	(24)	121%
Depreciation and amortisation	(42)	(39)	8%
Net finance cost	(19)	(14)	36%
PBT	(23)	72	(132%)
Income tax expense	(4)	(22)	(82%)
Net profit	(27)	50	(154%)
Net profit less impairment	26	74	(65%)
Effective tax rate	(17%)	31%	
Equity	349	399	
Capital employed	648	747	
Key Ratios			
Adjusted EBITDA margin	17%	22%	
Net profit margin	(5%)	7%	
Return on capital employed	(4%)	7%	
Return on equity	(8%)	13%	
Return on capital employed excluding impairment	4%	10%	

Revenue misses the mark

Despite increased production levels, spiralling commodities prices drove revenues down 20%

Revenue by commodity



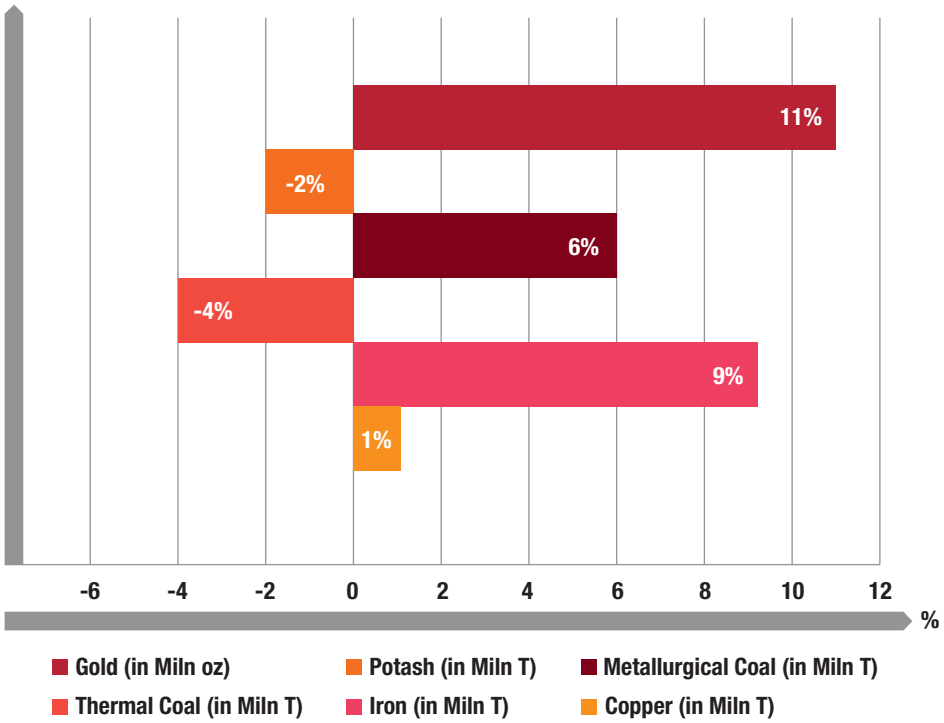
Note: Chart excludes Glencore's marketing and trading revenues, and certain other companies' non-mining revenues

Source: PwC analysis

The revenues of the Top 40 declined from $678 billion in 2014 to $539 billion in 2015, a significant reduction of $139 billion. This was an acceleration of the downward trend that began in 2012.

Copper, coal, iron ore and gold account for 83% of the Top 40's revenue. Aside from gold, revenue by commodity was down across the board, with the biggest reductions in iron ore (down 30%) and coal (down 26%).

Production change from prior year



Source: PwC analysis

Production numbers were generally higher in 2015, the only exceptions being potash (down 2%) and thermal coal (down 4%).

The existence of only three major potash producers means they are uniquely placed to respond to changes in demand. However coal, and in particular thermal coal, faced further pressures as carbon concerns continued to gather momentum (see page 25 for a discussion on the "war on coal").

The higher production levels seen in 2015 have been driven by the completion of previous expansionary projects rather than being the result of capital expenditures in 2015.

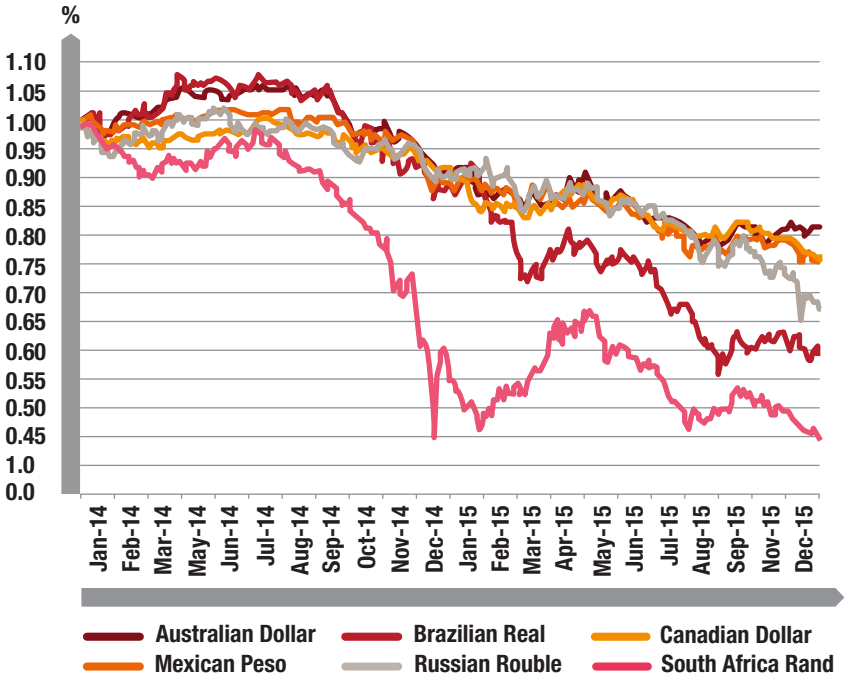
Clearing the bar on cost savings

Cost cutting initiatives widespread and effective

The Top 40 made good progress on reducing costs in 2015, as evidenced by the 17% decrease in operating costs, against a backdrop of higher production volumes and lower input costs.

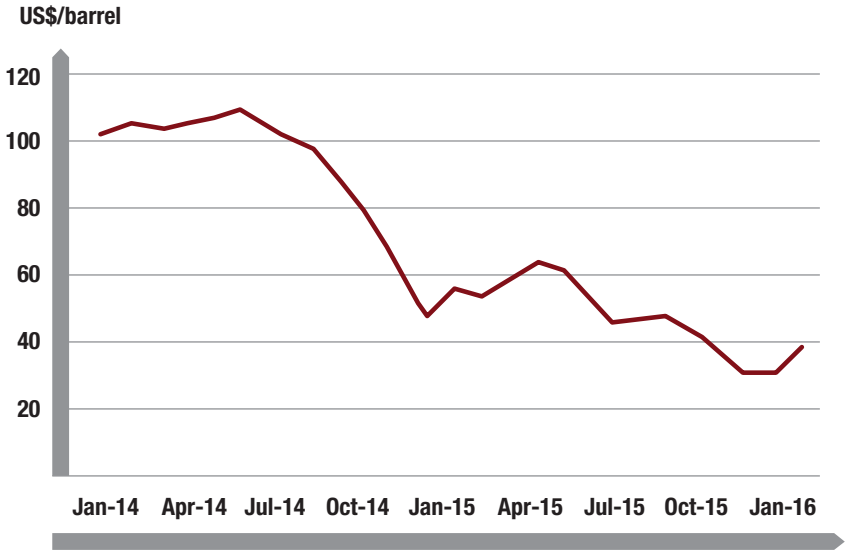
Traditional companies cut costs by 17.5% and emerging companies cut costs by 14.5%. This is all the more impressive given the production increases in the year.

US dollar vs key commodity countries' currencies (Indexed to 1 January 2014)



Source: PwC analysis

Crude oil, monthly average



Source: PwC analysis



It will be interesting to observe if these efforts can continue and the subsequent knock on effects. It has already been well documented the impact the downturn has had on mining services companies. The flattening of management layers between the mine and head office, while reducing costs, has taken a generation of experience out of the industry. Whilst management should be congratulated for cost cutting in a difficult period and in particular productivity initiatives and technological advances in areas such as automation, it remains to be seen if costs have been cut so deep that capacity constraints in the future could arise.

Strong US$ and a reduction in key input costs provide a helping hand

The strength of the US dollar in 2015 versus other key mining territory currencies assisted the Top 40 with non-US$ – country costs in some circumstances, with savings of between 20% to 30% on input and staff costs for 2015 as compared to 2014.

Miners also benefited from lower energy costs with crude oil down 47% year-on-year. The knock on effect was that shipping, freight and other input costs were down. Vale, for example, reported that lower fuel costs resulted in freight costs being reduced by $1.183 billion.

The bottom line

Adjusted EBITDA declined 39% and near record impairments of $53 billion tipped the Top 40 into a net loss of $27 billion, a first in the history of *Mine*.

Despite significant cost reductions, the hit to revenues was too great and EBITDA excluding impairment fell to $91 billion (down 39%), a new record low for *Mine*. Factoring in a near record $53 billion of impairments and a $5 billion increase in financing costs (up 36%), the Top 40 experienced a net loss – another first for *Mine*.

Energy assets drop the baton too

Eight of the Top 40 players contributed 97% of the impairments in 2015, with diversified's accounting for $29 billion and gold accounting for $9 billion.

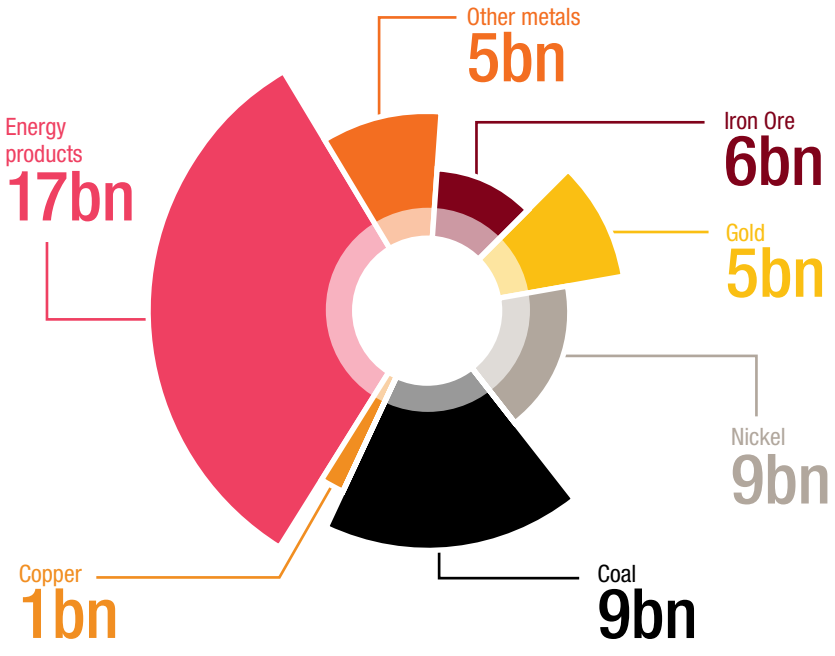
It is worth noting that $17 billion of impairments (32% of the total) related to energy assets held by the Top 40 and these are arguably not a reflection of the "mining industry" itself. This number consisted of three majors making significant write-offs of energy assets:

- Freeport McMoRan $13 billion
- BHP Billiton $3 billion
- Glencore $1 billion

Nonetheless, impairments of mining assets (non-oil and gas) were still significant, with gold and nickel having impairments of $9 billion each, followed by iron ore with $6 billion, coal with $5 billion and other metals combined with $6 billion.

Significantly, traditional companies made up 81% of the impairments for 2015. Taking into account the fact that a high concentration of emerging companies in the Top 40 are coal, iron ore and nickel producers, there are likely to be some marginal assets within these emerging companies that are shielded by foreign exchange and that may feel the pain in 2016.

Impairments per commodity 2015



Source: PwC analysis

Miners still making significant contributions to governments despite no profits

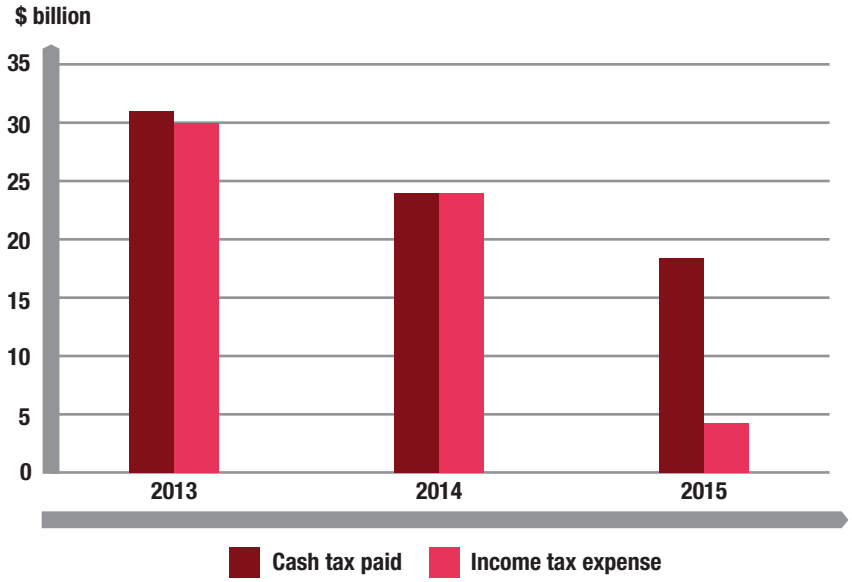
Unsurprisingly, due to an overall accounting loss before tax, income tax expense was down 81% from $22 billion in 2014 to $4 billion in 2015. Nevertheless, the Top 40 made cash tax payments of $18 billion in 2015.

Negative tax gap for mining companies

Various governments, the OECD and NGO's have strongly emphasised that a "tax gap" that exists between contributions that the corporate sector "should" be making, if all taxpayers complied with both the letter and spirit of the law, versus actual revenues collected. Miners have not been immune from criticism in this regard.

Interestingly, notwithstanding the current year accounting loss, the Top 40 contributed US$18bn in income taxes (vs accounting tax expense of US$4bn).

Tax expense vs tax paid



Source: PwC analysis

In our view that points to a "negative tax gap" for the industry. This is before considering additional government contributions that minders make through royalties and other payments.

Governments' overreliance on profit-based taxes may again ramp up the rhetoric on the mining sector to pay their "fair share". This would seem at odds with the reality and highlights the particular vulnerability of the mining industry to changes in local tax policy that are introduced long after investment decisions are made and capital committed.

The debate needs to be viewed in the context of the total contribution that mining companies make to governments in the form of other non-profit based imposts, including royalties, levies, indirect taxes and other local community contributions, not just income tax. Viewed in that light, a full and balanced assessment of whether the Top 40 is contributing their "fair share", particularly compared to other industry sectors, can be made.

Our new website compares mining taxes across different countries and by commodity. Find out more here:

pwc.com/compare-mining-taxes

Balance sheet

$ billion	2015	2014	Change (%)
Current assets			
Cash	82	92	-11%
Inventories	65	80	-19%
Accounts receivable	61	75	-19%
Other	33	32	3%
Total current assets	***241***	***279***	***-14%***
Non-current assets			
Investment in associates and joint ventures	63	70	-10%
Property, plant and equipment	579	650	-11%
Goodwill and other intangibles	64	90	-29%
Other investments and loans granted	19	20	-5%
Other	81	76	7%
Total non-current assets	***806***	***906***	***-11%***
Total assets	***1,047***	***1,185***	***-12%***
Current liabilities			
Accounts payable	88	97	-9%
Borrowings	48	44	9%
Other	35	39	-10%
Total current liabilities	***171***	***180***	***-5%***
Non-current liabilities			
Borrowings	258	272	-5%
Other	140	158	-11%
Total non-current liabilities	***398***	***430***	***-7%***
Total equity	***478***	***575***	***-17%***
Total equity & liabilities	***1,047***	***1,185***	***-12%***
Key ratios	***2015***	***2014***	
Gearing ratio	46%	38%	20%
Current ratio	1.41	1.55	-9%
Quick ratio (times)	1.03	1.11	-7%
Net borrowings (borrowings less cash)	224	224	0%
Net borrowings to EBITDA	2.46	1.52	62%
Cash to cash cycle (days)	28	23	20%
Net working capital	70	99	-29%
Shareholder returns (dividends plus buybacks)	23	25	



Debt down by $10 billion, but net debt flat

Working capital improvements



Asset bases reflect commodity prices

As might be expected, given the market conditions and shift in strategic outlook, total assets for the Top 40 decreased by $138 billion. Almost 50% of this decrease relates to property, plant and equipment, as well as to goodwill and intangible assets, which decreased by $71 billion and $26 billion, respectively, owing to depreciation, impairments and the disposal of assets.

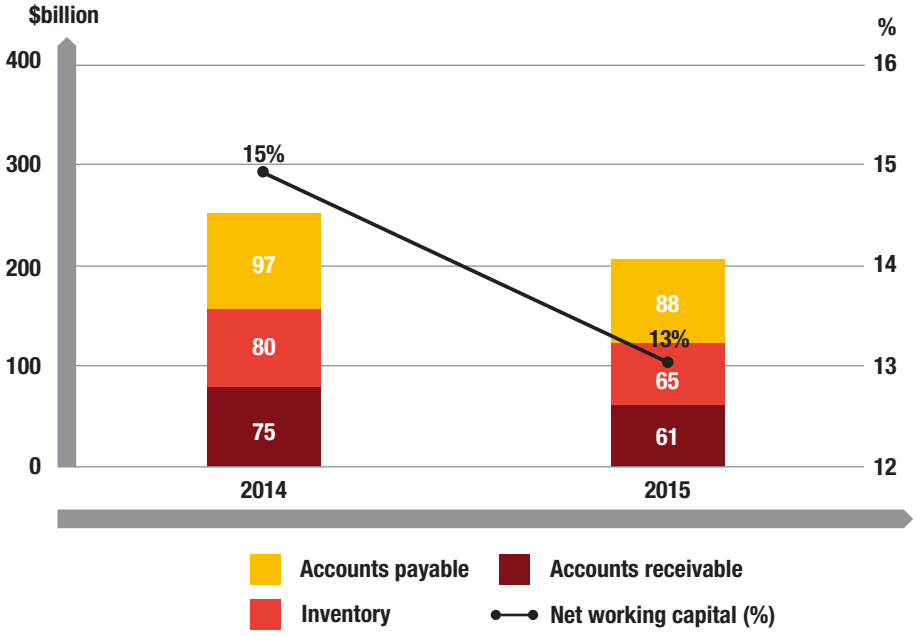
Tightening the belt on working capital

Working capital decreased year-on-year with the continued tight working capital policies of the Top 40.

	FY15	FY14
Accounts receivable ($ billions)	61	75
Day Sales Outstanding (DSO – days)	41	40
Inventory ($ billions)	65	80
Days Inventory Outstanding (DIO – days)	56	58
Accounts payable ($ billions)	88	97
Days Payable Outstanding (DPO – days)	77	70
Net working capital ($ billions)	70	99
Working capital ratio	13%	15%



Working capital changes



The success of the working capital programs is not yet clear. Total current assets and total current liabilities decreased by 14% and 5%, respectively, resulting in a $29 billion reduction in net working capital. However, the reduction may have been the result of external factors. The decrease in accounts receivable can mainly be attributed to lower commodity prices impacting on revenue rather than working capital practices, as evidenced by the minimal movement in DSO. There was more success on the supply side, with DPO increasing by seven days, highlighting the pressure applied to suppliers.

There is an incentive for companies to actively manage their working capital, as this creates the opportunity to free up more cash, a strong focus in the current environment. A simple one-day improvement in DSO, DIO and DPO has the potential to free up an additional $4 billion in cash, which could be available to fund working capital needs or capital expenditures or to service debt obligations.

Focus on financing

Overall borrowings fall, but net debt remains stagnant and leverage and liquidity ratios are ringing alarm bells.

Borrowings for the Top 40 decreased by a combined $10 billion over 2015. This was entirely attributable to a reduction by traditional companies (for which borrowings were down $18 billion) as emerging companies increased borrowings by $8 billion. The increase in emerging company borrowings was predominantly driven by Chinese companies. Notwithstanding borrowings were down, net debt remained stagnant.

Record gearing ratios

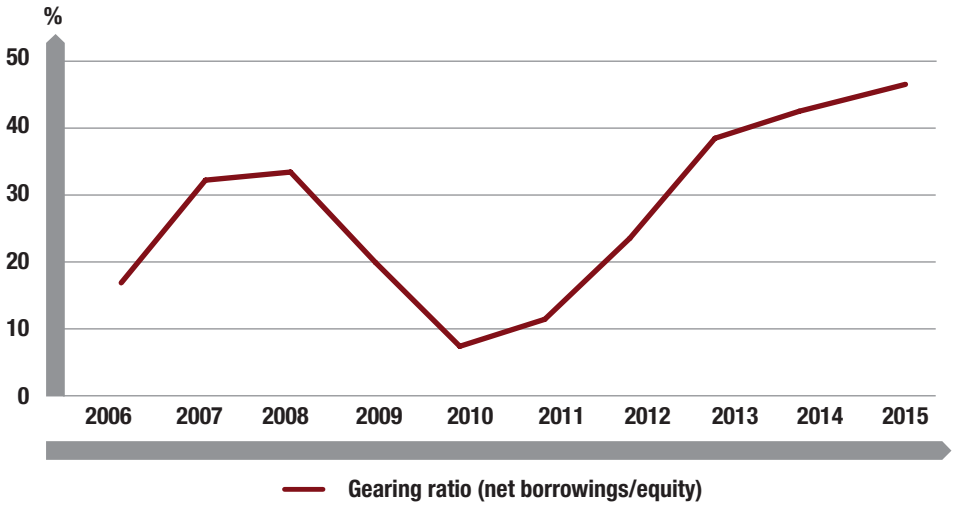
Although companies are repaying debt, leverage is rising. The Top 40 this year had a gearing ratio of 46%, a new record for Mine. The same Top 40 had an overall gearing ratio of 38% whereas last years Top 40 had gearing ratio of 43%. This years Top 40 traditional companies increased their gearing by 13%, whereas emerging companies gearing rose by 35%.

Net debt: EBITDA signalling distress

Net debt to EBITDA ratios increased from 1.52 to 2.46 in 2015. For traditional companies, this ratio increased by 46%, from 1.51 to 2.21, whereas for emerging companies, it more than doubled, from 1.53 to 3.15. Net debt for this years Top 40 did not move and therefore the increase in ratios is entirely explained by the sharp decrease in earnings as a result of the reduced commodity prices.

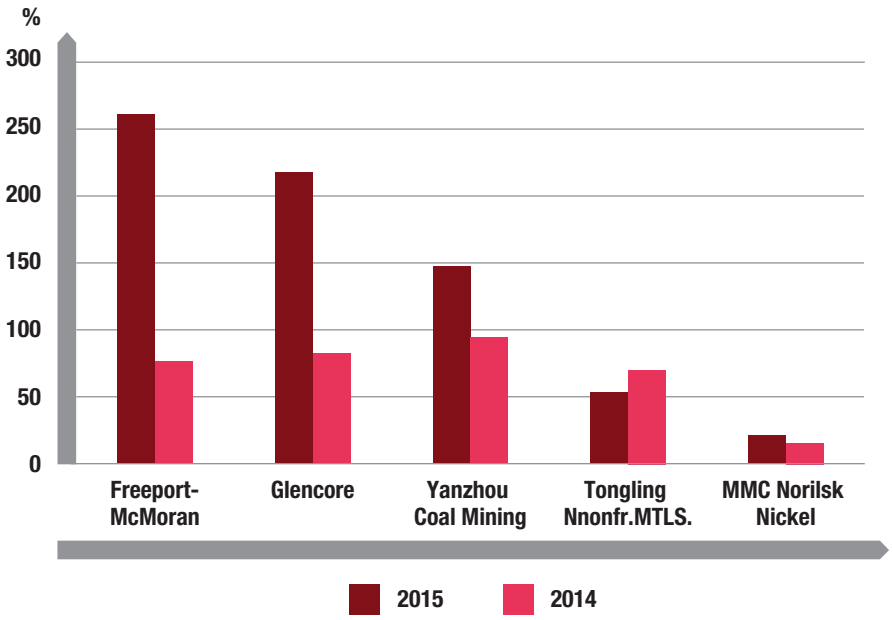
Alarmingly, 12 of the Top 40 have a net debt to EBITDA ratio of greater than 4, compared to only four companies with such a ratio in last year's edition of Mine. Of these 12 companies, eight are emerging companies, for which debt increased by 27%. If commodities prices stay depressed and earnings do not lift, the short term focus on liquidity in 2015 will likely continue.

Top 40 gearing ratio



Source: PwC analysis

Net debt as % of market cap for top 5 leveraged companies



Source: PwC analysis

Net debt: market capitalisation

Unsurprisingly, given the fall in Top 40 market capitalisation in 2015, overall net debt as a proportion of market capitalisation increased significantly from 29% to 45%. The ratios for some of the more highly geared companies in the Top 40 that have also suffered large market capitalisation slumps have ballooned. For example, Freeport-McMoRan's ratio was above 250% and Glencore above 200% during 2015.

Over the past few years, many of the traditional companies took advantage of low interest rates and rolled over their debt, extending its maturity profile. The opposite is true for emerging companies which have a much higher proportion of debt due in 2016.





Financing costs on the rise

Overall, finance costs were higher in 2015, despite the decrease in borrowings. Interest expenses as a percentage of total debt increased from 5% to 7%, which highlights the higher cost of debt for the industry, which can be attributed to the focus on liquidity and subsequent credit ratings downgrades. In fact, the problem may be more severe than it appears for many of the Top 40, given that the (now 12) Chinese companies in the Top 40 may have access to cheaper financing from Chinese banks.

Proceeds from borrowings were 17% lower in the current year, which may also indicate an increased difficulty in raising new debt.

Credit ratings take a knock

The industry received broad ratings downgrades from key agencies throughout 2015 and the beginning of 2016 and the Top 40 were not spared. Based on publicly available Moody's ratings, the Top 40 now average BAA3.

Diversified commodities companies were downgraded two rankings on average. In contrast, precious metals companies on average did not move in rankings. The downgradings reflect concerns over the deterioration in outlook for bulk commodities, particularly in iron ore.

Significant lowlights for 2015 included Anglo American being downgraded to junk status. Glencore, highly dependent on access to working capital facilities for its significant trading activities, was downgraded to just above junk status. For those seeking to raise new debt, the impact of these ratings downgrades mean that the cost of new debt will be more expensive.

Alternative financing brought off the bench

In a market where longer-term potential has been ignored and debt levels reduced, it comes as no surprise that streaming transactions have become a viable alternative financing source for the Top 40.

Top 40 companies that entered into streaming transactions included Barrick Gold, Glencore and Vale. Barrick Gold completed an agreement to the value of $610 million on a portion of their gold and silver production from the Pueblo Viejo mine. Glencore entered a streaming deal to the value of $900 million on its share of the silver production from the Antamina mine. Vale also entered into a streaming deal for $900 million in relation to the gold produced as a by-product at the Salobo copper mine.

Although concerns persist about the cost of such deals, for indebted miners trading at a discount to their implied reserve values, the attractions of streaming are obvious. Portions of an asset can be quickly monetised, instantly reducing net debt. While miners' costs of capital remain high, streaming is here to stay.

Cash Flow

$ billion	2015	2014	Change (%)
Cash flow relating to operating activities			
Cash generated from operations	113	145	-22%
Income taxes (paid)/refunded	(18)	(24)	-25%
Other	(3)	(3)	0%
Net operating cash flows	**92**	**118**	**-22%**
Cash flow related to investing activities			
Purchases of property, plant and equipment	(69)	(90)	-23%
Purchase of investments	(10)	(17)	-41%
Exploration expenditure *	–	(1)	-100%
Proceeds from sale of property, plant and equipment	1	7	-86%
Proceeds from sale of investments	13	16	-19%
Other	(4)	(2)	100%
Net investing cash flows	**(69)**	**(87)**	**-21%**
Cash flow related to financing activities			
Dividends paid	(28)	(34)	-18%
Share buy backs	(7)	(7)	0%
Proceeds from borrowings	77	93	-17%
Repayment of borrowings	(76)	(84)	-10%
Share issuances	7	4	75%
Other	(4)	1	-500%
Net financing cash flows	**(31)**	**(27)**	**15%**
Net movement in cash and cash equivalents	(8)	4	-300%
Cash and cash equivalents at beginning of the year	92	90	2%
Effect of foreign currency exchange rate on cash and cash equivalents	(2)	(2)	0%
Cash and cash equivalents at end of the year	82	92	-11%
Free cash flows	23	27	-15%

* Actual exploration expenditure amount is $348 million and $597 million for 2014 and 2015 respectively



Debt recycled/ reclassified



Cash balances down $10 billion



Free cash flow down 15%



Dividends down

Reduction in free cash flow and shareholders suffer

Cash balances down $10 billion and free cash flow dropped by 15%.

As expected, operating cash flows dropped to $92 billion (down by 22%), broadly in line with the reduction in commodities prices and revenues.

The Top 40 reacted by reducing cash outflows relating to property plant and equipment by a similar percentage (down to $69 billion) and, for a second year in a row, exploration expenditure outflows were negligible ($0.4 billion).

In the previous edition of *Mine*, we noted that the traditional companies appeared to be tightening the belt on capital expenditure at a greater rate than were the emerging companies. In 2015, the emerging companies and traditional companies broadly reduced capital outlays by the same proportions (22%).

Notwithstanding these efforts, free cash flow still suffered, falling 15% to $23 billion.

Debt recycled

Debt on the balance sheet of the Top 40 came down by $10 billion, the same amount by which cash balances were reduced. However, cash generated from borrowings ($77 billion) broadly equalled cash used to repay debt ($76 billion), suggesting that debt is being taken off balance sheet or refinanced and classified through equity.

Dividends payments continue to run out of steam

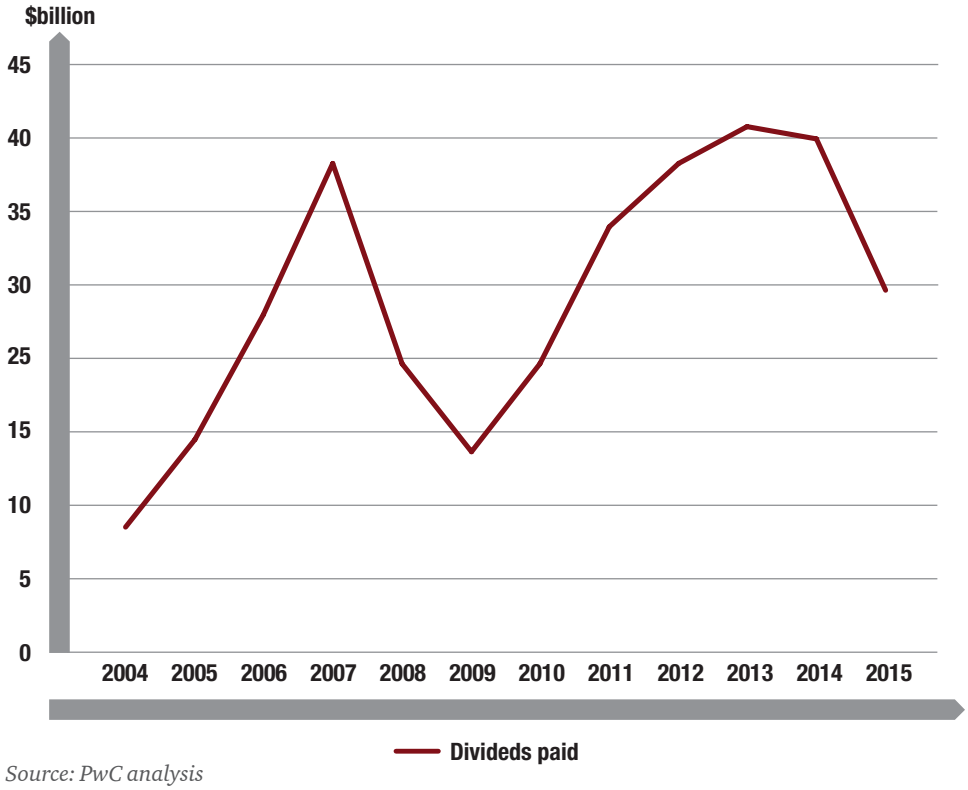
Unsustainable dividend practices have started to come to an end, with dividend payments down 18% year-on-year to $28 billion. Emerging companies reduced their dividend payments to $8 billion in 2015 (down 38%), whereas traditional companies reduced dividend payments to $19 billion (down 10%). Given the first net loss in the history of *Mine* and recent high profile announcements on dividend forecasts, it is expected that dividend payments will remain under pressure in 2016.





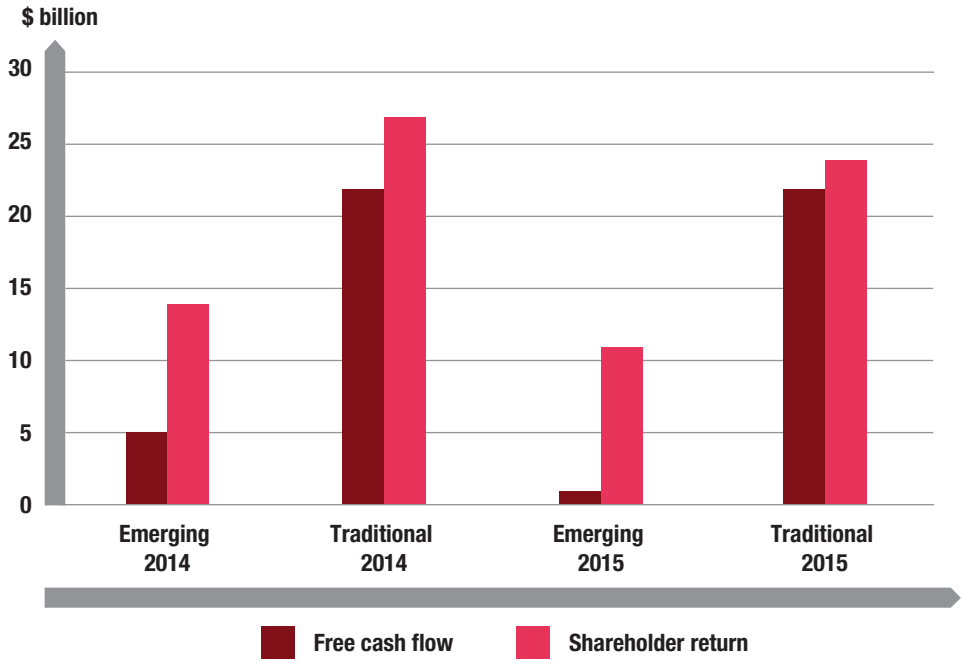


Dividend payment trends



Source: PwC analysis

Top 40 Free cash flow and shareholder returns



Source: PwC analysis

10yr

10 year trends

$ billion	2015	2014	2013	2012	2011	2010	2009	2008	2007	2006
Aggregate market capitalisation	494	783	958	1234	1202	1605	1259	563	1481	962
Aggregated income statement										
Revenue	402	500	512	525	539	435	325	349	312	249
Operating expenses	-390	-359	-350	-340	-311	-246	-217	-208	-176	-141
EBITDA	12	141	162	185	228	189	108	141	136	108
Amortisation, depreciation and impairment	-95	-63	-97	-86	-42	-34	-31	-57	-19	-12
PBIT	-83	78	65	99	186	155	77	84	117	96
Net finance cost	-19	-14	-15	-6	-6	-7	-6	-6	-5	-3
PBT	-102	64	50	93	180	148	71	78	112	93
Income tax expense	-4	-22	-30	-25	-48	-38	-22	-21	-32	-27
Net profit	-106	42	20	68	132	110	49	57	80	66
Adjusted net profit excl. Impairment	26	74	43	111	147	112	60	88	82	66
Year on year increase/(decrease) in revenue	-20%	-2%	-2%	-3%	24%	34%	-7%	12%	25%	12%
Year on year increase/(decrease) in EBITDA	-91%	-13%	-12%	-19%	21%	75%	-23%	4%	26%	33%
Year on year increase/(decrease) in net profit	-352%	110%	-71%	-48%	20%	124%	-14%	-29%	21%	47%
EBITDA margin	3%	28%	32%	35%	42%	43%	33%	40%	44%	43%
Aggregated cash flow statement										
Operating activities	92	118	124	137	174	137	83	104	95	77
Investing activities	-69	-87	-125	-169	-142	-79	-74	-102	-126	-67
Financing activities	-31	-27	-3	21	-28	-35	10	14	36	4
Free cash flow	23	27	-6	11	76	70	19	38	44	40
Aggregated balance sheet										
Property, plant and equipment	579	650	712	701	601	511	467	402	371	262
Other assets	468	535	544	544	538	432	334	274	284	192
Total assets	1,047	1,185	1,256	1,245	1,139	943	801	676	655	454
Total liabilities	569	610	624	563	482	387	354	339	329	217
Total equity	478	575	632	682	657	556	447	337	326	237

Note: All income statement data presented excludes Glencore marketing and trading revenue and costs.

Note: The information included above includes the aggregated results of the Top 40 Mining companies as reported in each respective edition of Mine,except for 2014, which uses the current years' Top 40's financial comprative financial results.



Glossary

Adjusted net profit	Net profit excluding impairments
Capital employed	Property plant and equipment plus current assets less current liabilities
Capital expenditure	Purchases of property, plant and equipment
Capital velocity	Ratio of capital expenditure to capital employed
CEO	Chief Executive Officer
Cash to cash cycle	Days inventory outstanding plus days sales outstanding less days payables outstanding
Current ratio	Current assets/current liabilities
Dividend coverage	earnings per share/dividends per share
Dividend pay-out ratio	Dividends paid/adjusted net profit
Dividend yield	Dividends paid/market capitalisation
DIO	Days Inventory Outstanding
DSO	Days Sales Outstanding
DPO	Days Payable Outstanding
EBIT	Earnings before interest and tax
EBITDA	Earnings before interest, tax, depreciation, amortisation, and impairments
EBITDA margin	EBITDA/revenue
ETF	Exchange-Traded Fund
ETR	Effective tax rate
Free cash flow	Operating cash flows less investment in property, plant and equipment
GDP	Gross Domestic Product

Gearing ratio	Net borrowings/equity
GFC	Global Financial Crisis
IMF	International Monetary Fund
M&A	Mergers and Acquisitions
Market capitalisation	The market value of the equity of a company, calculated as the share price multiplied by the number of shares outstanding
Net assets	Total assets less total liabilities
Net assets ratio	Total assets/total liabilities
Net borrowings	Borrowings less cash
Net profit margin	Net profit/revenue
NPV	Net present value
Oz	Ounce
PBIT	Profit before interest and tax
PBT	Profit before tax
Price-to-earnings ratio (PE ratio)	Market value per share/earnings per share
Quick ratio	(Current assets less inventory)/current liabilities
R&D	Research and development
Return on capital employed (ROCE)	Net profit excluding impairment/ property, plant and equipment plus current assets less current liabilities
Return on equity (ROE)	Net profit/equity
Top 40	40 of the world's largest mining companies by market capitalisation as of 31 December 2015 as defined in the explanatory notes
Working capital	Current assets less current liabilities



Explanatory notes to the financial analysis

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 2015 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), United States Generally Accepted Accounting Principles (US 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 2015 covers reporting periods from 1 April 2014 to 31 December 2015, with each company's results included for the 12-month financial reporting period that falls within this period. 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 closing US Dollar exchange rate for the respective year.

Some diversifieds undertake part of their activities outside the mining industry, such as the oil and gas businesses of BHP Billiton and Freeport-McMoRan, parts of the Rio Tinto aluminium business and Glencore's marketing and trading revenues and costs. No attempt has been made to exclude such non-mining activities from the aggregated financial information, except where noted.

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



The financial information shown for 2015 covers reporting periods from 1 April 2014 to 31 December 2015, with each company's results included for the 12-month financial reporting period that falls within this period



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