pwc.com/mine

Mine 2020

Resilient and resourceful

June 2020

pwc

Executive summary

The Top 40 mining companies are so far weathering the COVID-19 storm mostly unscathed, and certainly better than many other sectors.

A remarkable feat, given that global growth is expected to decline in 2020, something that's only happened twice in modern times: in 1944, during World War II, and in 2009, during the global financial crisis. The ability of the Top 40 to 'resource the future' continues to be relevant in the current environment as many governments will appreciate mining for being a bedrock of economic recovery out of this crisis.

Our forecast for 2020 suggests the Top 40 miners will take a modest hit to EBITDA of approximately 6%. Capital expenditure will also slow, freeing up cash flows, and giving miners the capacity to pay dividends should they choose to do so. We don't expect many mega-deals to take place in 2020 due to increased economic uncertainty and practical constraints of site visits and inspections. However, the current conditions provide opportunities for the Top 40 to capitalise on smaller acquisitions in their local markets. Gold deals are not likely to recur to the same size or quantum as in recent years.

Although mining has been able to keep operating through the COVID-19 crisis, companies have also had to adapt and evolve. Some changes have been for the better, such as remote workforce planning and greater use of automation. Many of these adaptations may become permanent. In an uncertain environment, miners have focussed intensely on controlling the things they can control, and it is serving them well.

But the Top 40 are not immune from the social and economic shocks ahead, and they cannot afford to let their guard down. COVID-19 is challenging long-held assumptions about the unassailable wisdom of ultra-lean principles and global supply chains. Miners may need to think about de-risking critical supply chains and investing more in local communities. A shift towards localisation in supply chains and in deals, as well as different forms of community engagement, may turn out to be enduring consequences of the pandemic.

The Top 40 also need to keep on top of the mega-trends that existed pre-COVID, particularly ESG (environmental, social and governance) reporting and cybersecurity. We analysed how the Top 40 are performing on ESG disclosure and found that a few companies are doing most of the heavy lifting, while the rest lag behind. But 'brand mining' is a collective brand, and every miner needs to play its part. On the cyber front, the Top 40 have some work to do. At a time when mining companies are becoming more vulnerable to cyberattack as they use more automation and digital technologies, CEOs are expressing less concern about such issues.

In some respects, the mining sector is well-situated in the wake of COVID-19. For example, despite recent uncertainty regarding Brazil's ability to continue mining, iron ore prices have risen, potentially limiting the total impact on the sector. Mining companies have strong finances and are mostly still operational, albeit with increased levels of precautionary controls. But the longer-term impacts remain uncertain, and ongoing disruption is likely. Top 40 miners should take advantage of their current position of financial stability to revisit their strategies. Doing so will ensure their businesses can enhance their resilience over the long term and meet the demands of the global economy to maximise the opportunities to resource the post COVID-19 future.

Financial stability in turbulent times

Financial metrics

Revenue up 4% to US$692bn

EBITDA flat at US$168bn

Profit before tax (PBT) **down 11%** to US$89bn

Dividends paid **up 25%** to US$55bn

Share buybacks **down 51%** to US$7bn

Market capitalisation **up 19% (US$898bn)** (reduced to US$752bn on 30 April 2020)

Capex up 11% to US$61bn

COVID-19 impact

EBITDA **forecast to reduce** 6% in FY20, largely driven by commodity prices

Expected **capital spend reduction** of at least 20% for FY20

In excess of US$380m **pledged by the Top 40** for COVID-19 relief

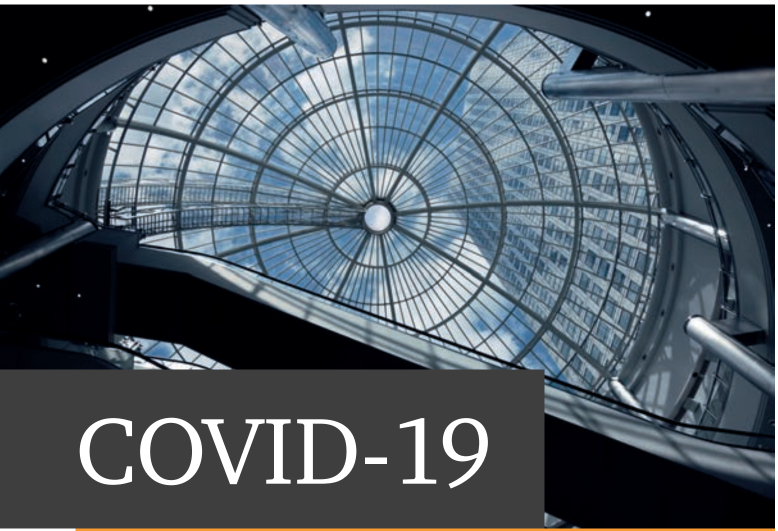
Deal activity

Enterprise **value of mega gold deals** totalling US$19.2bn in FY19

Cyber

Currently just 12% of mining and metals companies' CEOs are extremely concerned about cyber **(down from 21% in FY18 and 14% in FY19)**

Sums and percentages may not total the numbers shown due to rounding.



COVID-19

Taking lessons from the lockdown

An event without precedent in living memory, the COVID-19 pandemic is challenging several long-held truths about mining. Many miners, some for the first time, are experiencing the downside of global supply chains, ultra-lean operations and specialisation. But the pandemic is also highlighting the sector's resilience and the role that miners play in supporting communities and the broader economy. Although the crisis is far from over, miners are already applying the valuable lessons they've learnt.

In most countries, mining has drawn on its powerful entrenched safety culture to quickly implement controls to contain the spread of the virus and continue to operate. As a result, compared to many other industries, mining has managed to weather the first phase of the crisis relatively unscathed.

But that does not mean mining companies will be immune from the economic, social and business shocks ahead. The post–COVID-19 environment will require everyone to operate differently.

De-risk critical supply chains

Global supply chains have proven highly effective in driving down the cost of mining, as has a focus on hyper-efficiency, lean principles and just-in-time techniques. But the pandemic has exposed the vulnerabilities of this model. When borders closed and factories went into lockdown, those miners reliant on transient workforces, minimal inventories and low diversification struggled the most.

At least for their most critical supply chains, the Top 40 may need to consider an alternative approach: improved inventory management combined with globally diversified or locally sourced and financially viable resources. This would not only de-risk mining companies against a similarly disruptive event but also help develop and build resilience in local communities. Many are already doing it; Anglo American, Nornickel and BHP, among others, have announced initiatives to increase support for their domestic suppliers as a result of the pandemic.

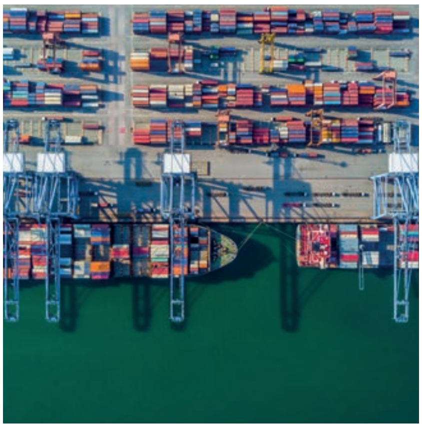
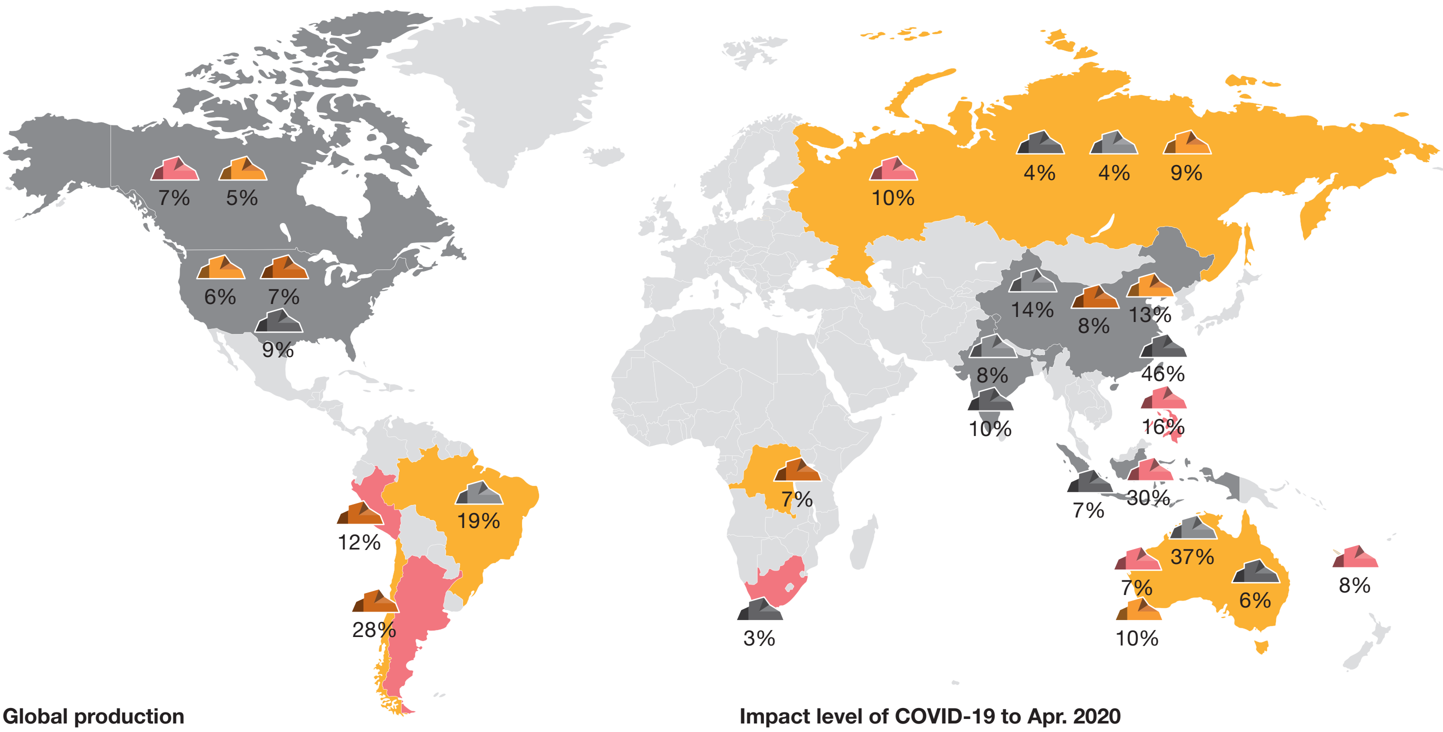


Exhibit 1: Global production overview and COVID-19 impact on mining operations



Global production

Copper Gold Iron Ore Coal Nickel

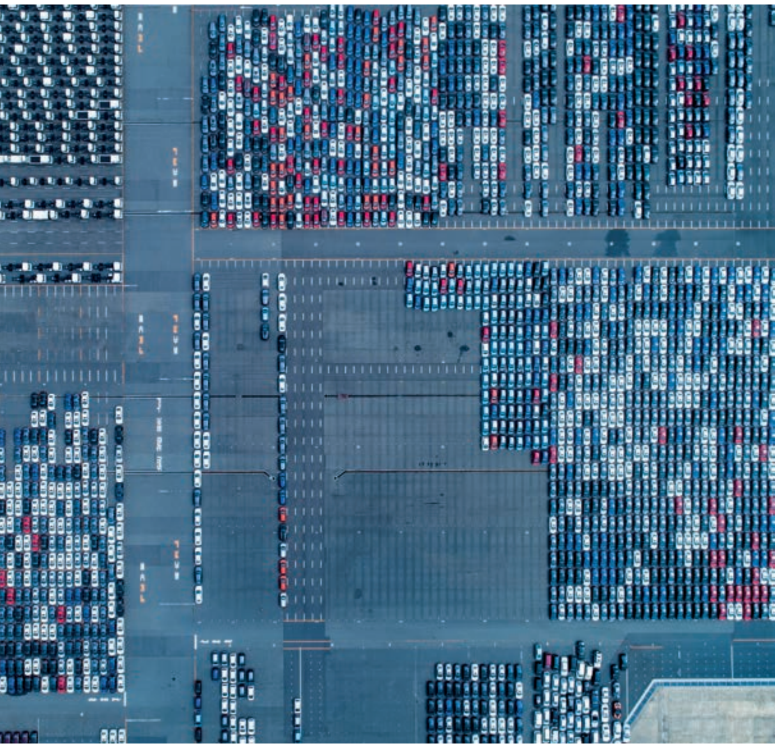
Impact level of COVID-19 to Apr. 2020

- Operations continued (with controls)*
- Operations partially stopped
- Operations stopped (for a period)

*'Operations continued' signifies 'no material or significant production interruptions'

Note: Percentages reflect geographical split of production, by commodity.

Source: USGS Mineral Commodity Summaries, 2020; BP Statistical Review of World Energy, 1965–2018; PwC analysis



Reconsider the benefits of diversification

Demand fluctuations are not new to mining. But miners that operate in one geography and rely on a single market or a single product offering are more likely to be impacted by events such as the COVID-19 pandemic. Although some miners have simplified their portfolio to focus on efficiencies, it is essential to strike a balance between a streamlined business and a diversified business. In the context of large markets, such as China and India, driving worldwide commodity growth, miners need to ask how they can diversify their customer base and fortify demand.

Build resilient communities

Mining's social licence to operate has never been more critical than it is today as companies increasingly look to local communities for skills, resources and supplies. Within weeks of the onset of the pandemic, large miners implemented concrete steps to build resilience through training, infrastructure and assistance. The majority of the Top 40 each contributed between US$20m and US$140m in direct support, and many continued to pay staff who were unable to work.

It's likely that miners will need to boost investment in local communities for some time as the full impact of COVID-19 continues to play out. According to the International Labour Organisation, the crisis is expected to wipe out 6.7% of working hours globally in the second quarter of 2020 — equivalent to 195 million full-time workers. Even mature, shock-absorbent mining businesses cannot endure such an impact in isolation.

But this once-in-a-generation disruption also presents miners an opportunity to remind stakeholders of the integral part that they play in their local communities. For example, during the early stages of the global outbreak, the Minerals Council of South Africa and member companies acted decisively to support employee education and health worker readiness, and secure the supply of masks, sanitisers, temperature monitors and influenza vaccinations. In Peru, miners stepped up to help local communities with essential medical equipment and logistics. And in India, companies have repurposed their medical facilities to treat COVID-19 patients.

Automation can help in a crisis

The global pandemic has shown that automation and digital operations can do more than reduce costs and drive efficiencies. Miners operating remotely or autonomously have found that technology also helps to manage the risks and impacts of COVID-19. They can better support remote workforces, reduce on-site presence, and monitor and control operations from outside the mine site setting.

While recovery from COVID-19 will certainly involve the use of more technology, miners must also strike a balance between accelerating its implementation and supporting local employment to avoid putting further strain on job-affected communities.

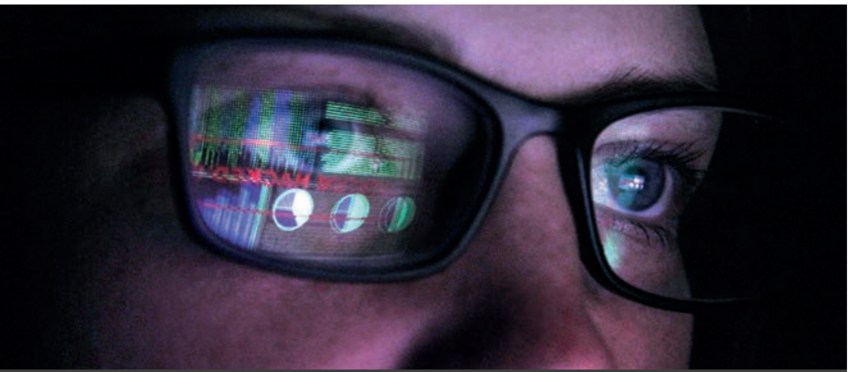
What the pandemic can teach us

The Top 40 have shown they can innovate, adapt and respond to this crisis along with the best. Now is a good time to assess which of those tactics were effective and should be codified to help miners prepare for future disruptive events.

Miners may also find useful lessons that they can incorporate as standard practice. These include: reduced office footprints, an increased local workforce, relocation of non-critical roles from sites, reassessment of investment criteria, redesigned rosters and shift patterns and working groups, as well as priorities towards the large and positive impact mining can have in communities.

For example, Rio Tinto has realised unexpected efficiency gains by using alternative workforce delivery models, including remote working and roster changes. The revelation that they can significantly reduce travel time while keeping up production will likely see them making these changes permanent.

By leveraging these kinds of positive pandemic experiences, miners will not only enable a faster recovery but also set mining up for a brighter future.



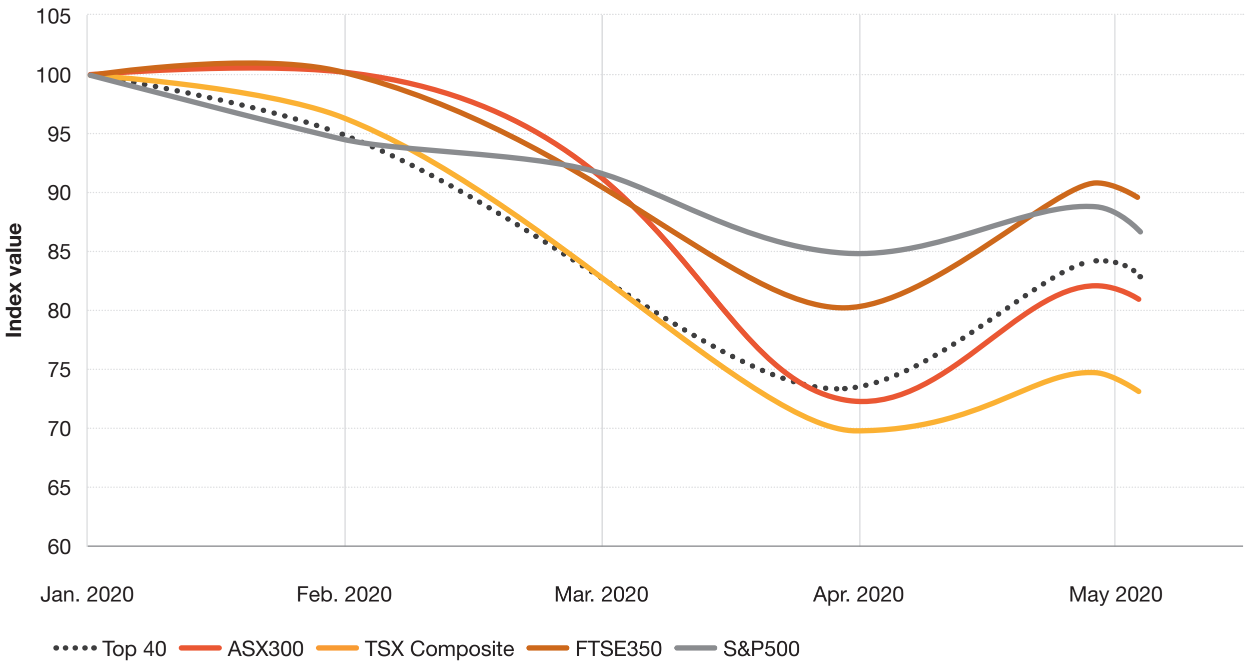
Financial analysis

In great shape to face a crisis

The global economy is entering uncertain times following the COVID-19 outbreak, with the International Monetary Fund (IMF) predicting a 3% contraction in the global economy for 2020. But the Top 40 are in an excellent position to weather the storm.

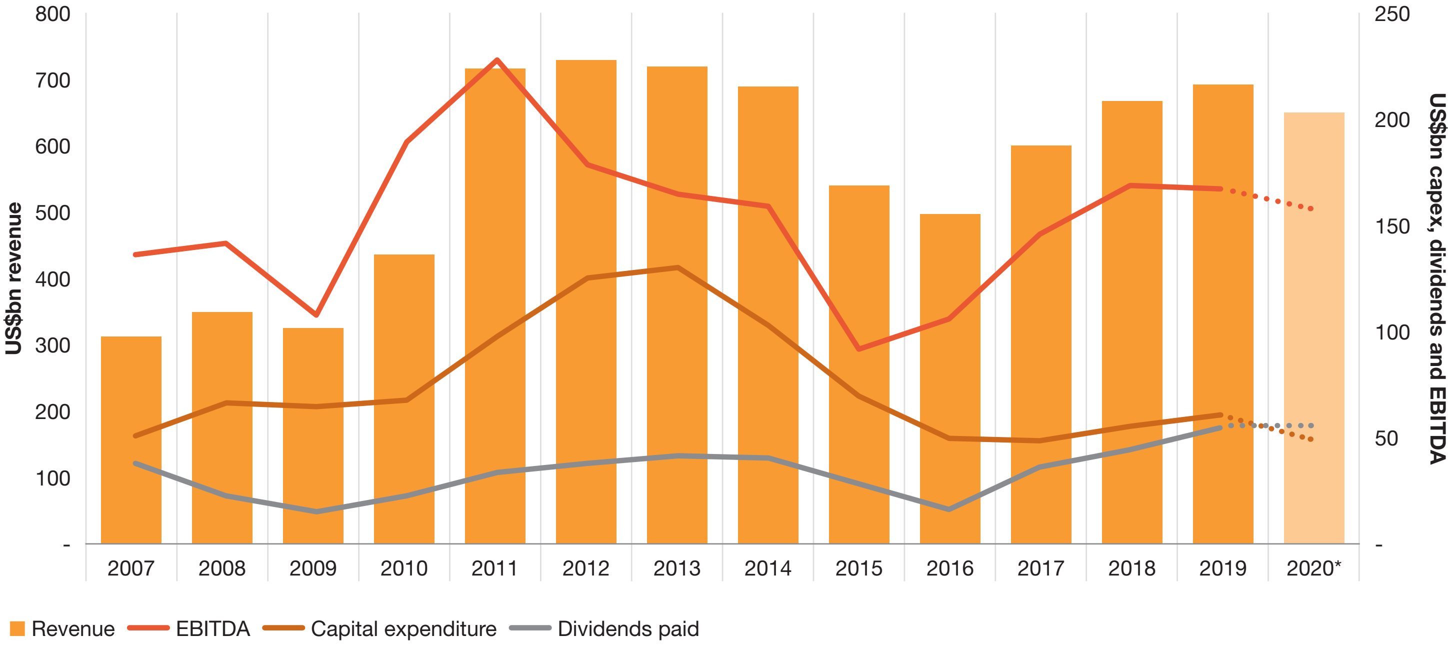
On the back of a solid financial performance in 2019 and prudent capital expenditure, the world's Top 40 miners face the crisis with strong balance sheets and the flexibility to respond. We estimate that volatility in commodity prices and production as a result of the outbreak will only moderately impact the Top 40's profitability in 2020. The market appears to agree, with the Top 40's share price recovering more quickly than some of the major indices in the last five months.

Exhibit 2: Market index performance (YTD 7 May 2020)



Source: S&P Capital IQ, PwC analysis

Exhibit 3: Top 40 mining companies performance trend (US$bn)

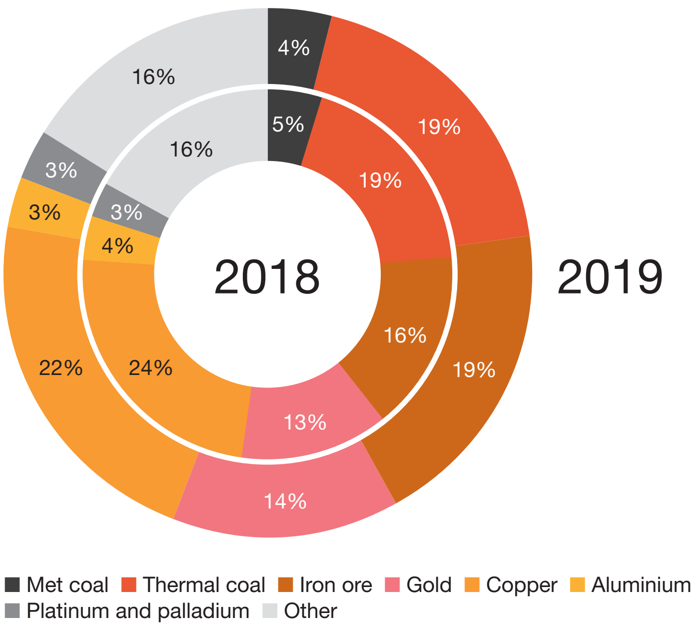


*2020 outlook. Source: Annual reports, PwC analysis

Revenue up but profit hit by one-offs

Top 40 revenue was US$692bn for 2019, up 4% from the previous year, largely a result of rising commodity prices. Coal's contribution to revenue remained steady over the year, while iron ore grew on the back of a five-year price peak of nearly US$130 a tonne. The iron ore price, driven up by production shortages following the tragic events in Brazil which caused loss of lives and displacement, subsequently eased due to cooling demand and the US–China trade war.

Exhibit 4: Top 40 revenue-based commodity mix remains consistent



Source: Annual reports, PwC analysis. 2018 calculated on revenue reported in PwC's *Mine 2019: Resourcing the future*

COVID-19

The price of base metals and coal has dropped since the onset of COVID-19 due to the decline in customer demand, disrupted global supply chains and market volatility. Mining companies are responding by repositioning their business strategy and production estimates for 2020.

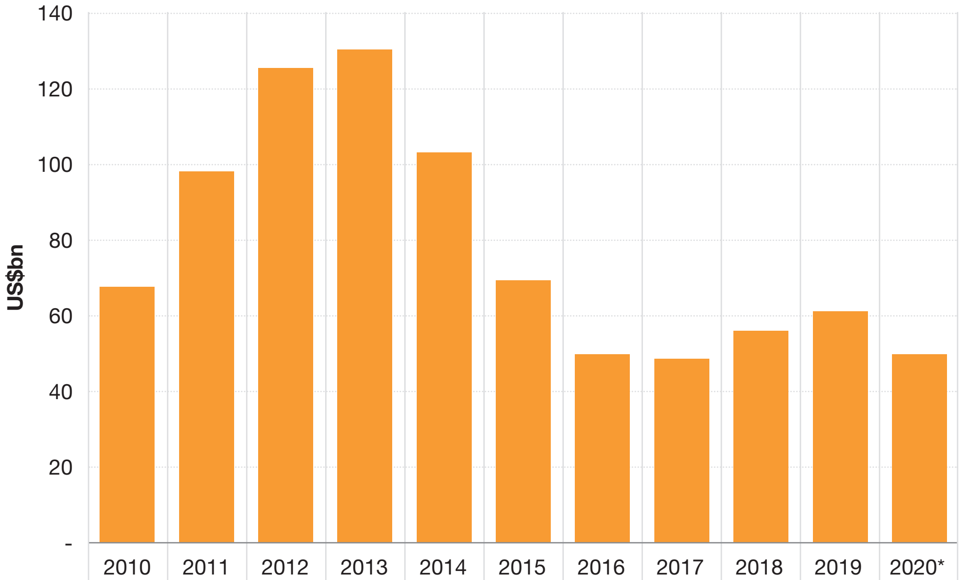
But revenue gains did not translate into profit before tax, which declined in aggregate by 11% over the year. This variance was primarily due to the significant remediation and restitution obligations associated with the tragic tailings dam event in Brazil; excluding this one-off, the decline in the Top 40's profit before tax was a more modest 3%. Ongoing cost pressures and asset impairments (totalling US$14bn), including Rio Tinto's US$3.5bn write-down on its Oyu Tolgoi copper project, also contributed to lower profitability.

EBITDA, however, remained consistent with the prior year. Our analysis found that EBITDA was positively impacted by approximately 1% due to the new leases standard IFRS 16, as a large portion of lease expenses were reclassified to depreciation and interest. Free cash flows declined marginally as a result of increased investment in capital expenditure.

Spending wisely: Capex up and shareholders rewarded

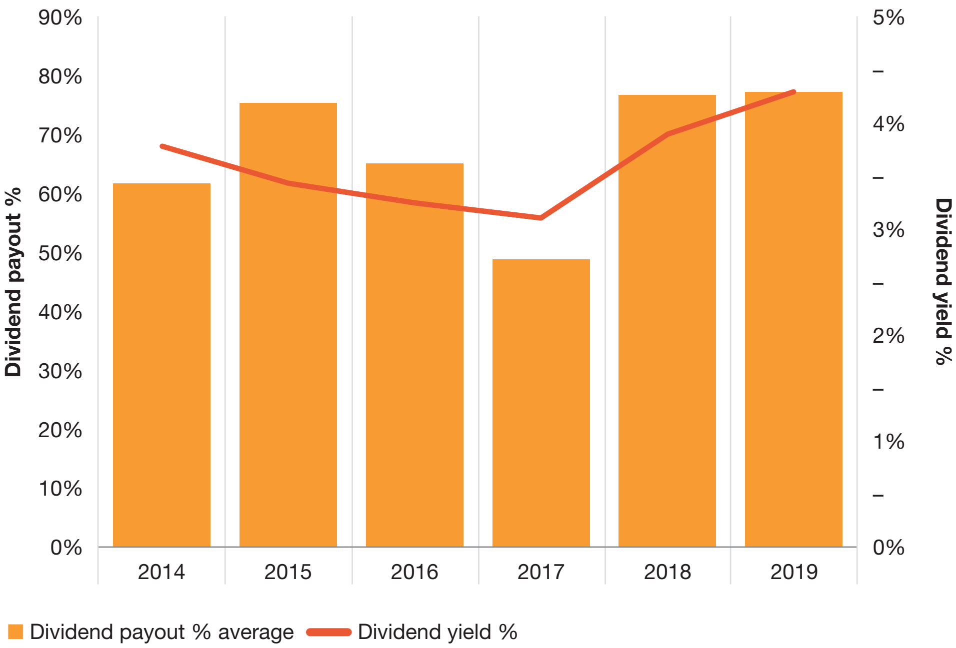
Buoyed by another year of solid performance and confidence in the long-term market outlook, the Top 40 continued to invest in their future. Capital expenditure increased for the second consecutive year, up 11% from 2018 to US$60.9bn. Capital projects were largely financed through cash generated from operations and debt financing.

Exhibit 5: Top 40 capital expenditure, 2010–20 (US$bn)



*2020 outlook. Source: Annual reports, PwC analysis

Exhibit 6: Top 40 average dividend payout % and dividend yield



Source: Annual reports, S&P Capital IQ, PwC analysis

The Top 40 continued to reward shareholders, with dividend payouts at a five-year high. Cash dividends to shareholders were US$55bn, up by 25% from 2018. The average 2019 dividend payout ratio was 78%, and the average dividend yield was 4.3%.

Some companies undertook major capital restructurings in 2019, including BHP's US$5.2bn buyback, following the sale of its onshore oil and gas assets, and Rio Tinto's US$5bn share buyback, following the disposal of coal assets.

Balance sheets are rock solid

Top 40 financial position

US$bn	2019	2018	Change %
Current assets			
Cash	88	94	-6%
Inventories	83	77	9%
Accounts receivable	48	54	-11%
Other	62	68	-9%
Total current assets	**282**	**293**	**-4%**
Non-current assets			
Property, plant and equipment	649	611	6%
Goodwill and intangible assets	57	53	7%
Investment in associates and joint ventures	55	46	19%
Other investments and loans granted	25	25	1%
Other	71	62	15%
Total non-current assets	**857**	**797**	**8%**
Total assets	**1,139**	**1,090**	**5%**
Current liabilities			
Accounts payable	98	93	5%
Borrowings	45	33	36%
Short-term lease liabilities	3	0	1,434%
Other	54	53	1%
Total current liabilities	**199**	**180**	**11%**
Non-current liabilities			
Borrowings	202	216	-7%
Long-term lease liabilities	11	1	888%
Environmental provisions	60	53	12%
Other	104	94	11%
Total non-current liabilities	**377**	**365**	**3%**
Total liabilities	**576**	**545**	**6%**
Net assets	**563**	**545**	**3%**
Total shareholders equity	**563**	**545**	**3%**

Source: Annual reports, PwC analysis

Key financial position ratios

	2019	2018	2017	2016	2015
Total borrowings (US$bn)	261	251	277	288	306
Short-term borrowings as a % of total borrowings	18%	13%	16%	15%	16%
Gearing ratio	31%	29%	31%	41%	47%
Net borrowings to EBITDA	1.03	0.93	1.20	1.92	2.46
Total borrowings to equity	46%	46%	50%	59%	64%
Net working capital (US$bn)	34	38	48	41	38
Current ratio	1.41	1.63	1.49	1.42	1.41

Source: Annual reports, PwC's Mine 2019: Resourcing the future

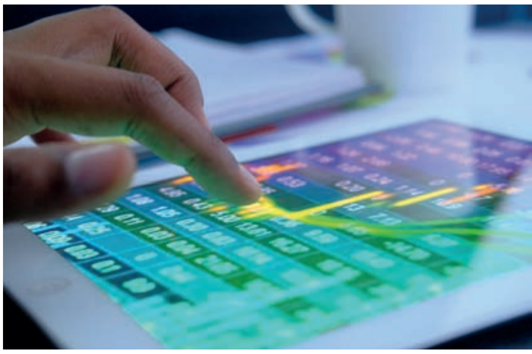
COVID-19

Although many multinationals in banking, retail and transportation are deferring dividend payments to preserve cash, the Top 40 are continuing to provide a more stable base of returns to all stakeholders (government, communities, employees and shareholders). Out of the Top 40, only Glencore, Freeport-McMoRan and Sumitomo Metal Mining announced deferrals or reductions of declared dividends. Some miners have so far increased dividends, such as Newmont (up 75%) and Kirkland Lake Gold (doubled).

The Top 40 are in a strong financial position as they enter one of the more uncertain economic periods in living memory. Liquidity is improved, and solvency is consistent. Gearing remains steady at 31%, despite the increase in interest-bearing borrowings, mainly due to the implementation of IFRS 16 Leases with previously off-balance-sheet commitments now included in the balance sheet to improve transparency to shareholders.

COVID-19

Although the Top 40 miners are in a relatively strong financial position, some have taken the opportunity to draw down additional credit lines to further bolster their cash reserves to weather the COVID-19 storm and support growth strategies. Recent drawdowns include Vale (US$5bn), Agnico Eagle (US$1bn) and Kinross (US$0.8bn).



Although the proportion of short-term borrowings increased in 2019 as more financial debt came to maturity, the overall debt level has been falling over the last four years (excluding the impact of IFRS 16) as the Top 40 took advantage of the business performance and surplus cash to pay down liabilities. With net repayments of US$4bn during the year, the Top 40 are slowly returning to pre-2013 economic downturn debt levels. Working capital levels of 2019 have decreased by US$4bn compared to 2018, as a result of continual management of working capital.

Impact of COVID-19 on outlook ‘relatively moderate’

Thanks to their healthy cash flows and stronger balance sheets, the Top 40 miners are better positioned than most to get through the economic fallout of COVID-19 in good shape.

The 2020 global economy has been severely affected by the pandemic, with the IMF predicting a 3% global contraction. Yet, based on commodity price and production forecasts, we expect that the overall impact of the crisis on the Top 40 this year will be relatively moderate. We anticipate revenue will fall by 6% year-over-year, attributable primarily to lower commodity prices, with EBITDA also falling by 6%. Certain input costs (e.g., freight and raw materials, including fuel) are expected to decline, partially offset by higher operating costs (e.g., labour) that we believe are likely to arise from social distancing measures and stay-at-home orders for those who are unable to work.

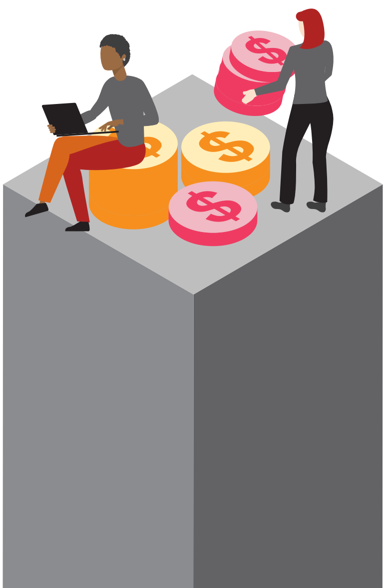
The fall in EBITDA is forecast to flow through to operating cash flows. We anticipate that miners will prioritise production over expansionary capital spending in 2020, if for no other reason than it will be highly challenging to mobilise and procure labour and equipment to remote sites safely in the current environment. This, coupled with fiscal restraint, is expected to result in a lower capital spend overall of at least 20%. Beyond the COVID-19–related restrictions, we expect to see a resurgence in capital spend after 2020 with the current reduction being a lag in spend and not a permanent deferral.

We do not expect any significant new acquisitions that are not already in play during the year within the Top 40.
We expect the moderate decline in EBITDA will be offset by a lag in capital spending, giving Top 40 miners the capacity to pay dividends in 2020 similar to 2019 levels. But their decision may also be impacted by a cautious approach to remain resilient to unforeseen operational issues that occur in the rest of the year. We do note a small number of the Top 40 have deferred some of their dividends, but this is not expected to be an ongoing theme across the group. Net debt repayments are expected to remain stable at FY19 levels resulting from cheaper debt and companies looking to ensure sufficient liquidity.

Top 40 financial performance and metrics

				% change	
US$bn	2020 outlook	2019	2018	2019 to 2020	2018 to 2019
Revenue	649	692	667	-6%	4%
Operating expenses	(484)	(515)	(491)	-6%	5%
Other operating income/(expenses)	(8)	(9)	(7)	-13%	33%
EBITDA	**157**	**168**	**169**	**-6%**	**-1%**
Depreciation and amortisation	(55)	(50)	(47)	9%	8%
Impairment reversal/(expense)	(14)	(14)	(9)	3%	53%
Net finance costs	(14)	(14)	(13)	-2%	12%
Profit before tax	**75**	**89**	**100**	**-17%**	**-11%**
Income tax expense	(23)	(29)	(26)	-19%	9%
Net profit	**51**	**61**	**74**	**-15%**	**-18%**
Profitability measures					
EBITDA margin	24%	24%	25%		
Net profit margin	8%	9%	11%		
Return on capital employed		11%	10%		
Return on equity		11%	14%		

Source: Annual reports, PwC analysis

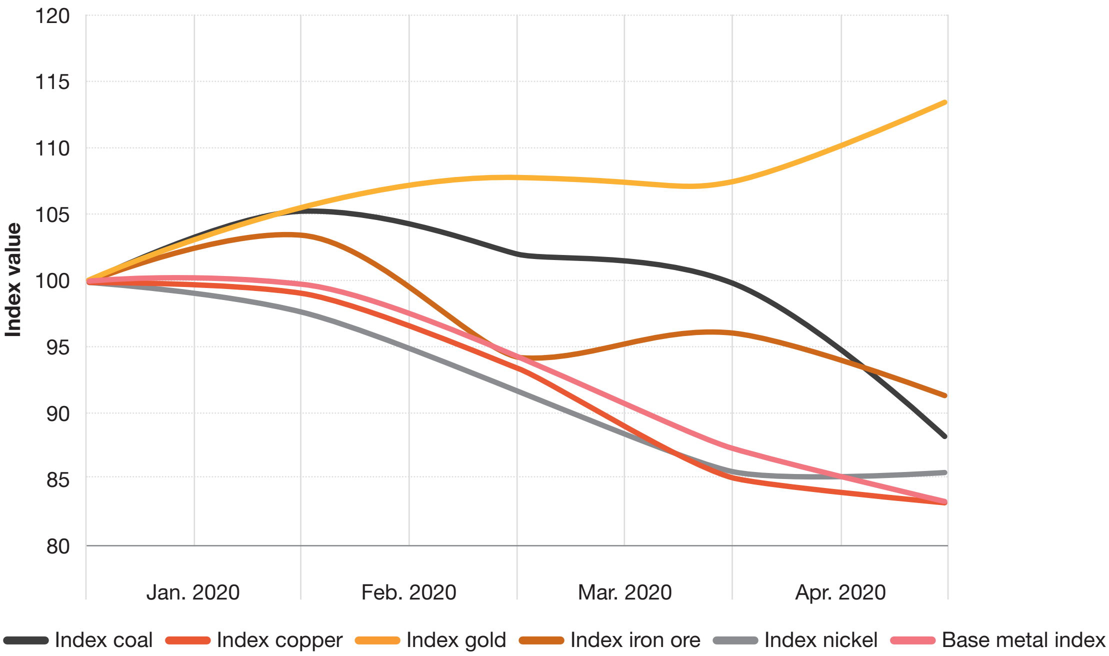


Top 40 summary cash flow statement

				% change	
US$bn	2020 outlook	2019	2018	2019 to 2020	2018 to 2019
Net operating cash flows	122	130	135	-7%	-3%
Purchase of PP&E	(49)	(61)	(55)	-20%	11%
Free cash flow	**73**	**69**	**80**	**5%**	**-13%**
Dividends paid	(55)	(55)	(44)	0%	25%
Share buybacks	(1)	(7)	(15)	-86%	-51%
Total shareholder returns	**(56)**	**(62)**	**(59)**	**-10%**	**5%**
Net repayments of debt	(4)	(4)	(15)	13%	-77%
Other	(3)	(8)	(3)	-64%	146%
Net cash flow	**10**	**(4)**	**2**	**-348%**	**-276%**

Source: Annual reports, PwC analysis

Exhibit 7: Price index for key commodities



Source: World Bank, PwC analysis

Commodity outlook post-COVID-19

The pandemic has had a varied impact on commodity prices, with some down, some up and others relatively steady. Base metal prices have seen a material decline since January 2020 due to softening demand and the uncertain economic outlook. Copper, nickel and zinc prices have fallen by double-digit percentage points since December 2019. Major miners expect softer demand for base metals for the rest of the year, and some have reacted by moderately cutting their production forecast. Several of the Top 40 have downgraded their copper, nickel and zinc production forecasts by an average of 6–7%. Some of the commodity prices may decline further once COVID-19–related production constraints are resolved.

As the gold price rises during the crisis, gold miners are taking advantage of the recovery of share price in recent months. For example, Newcrest in May announced an A$1bn capital raise. Newcrest Chairman Peter Hay said: “Our strong balance sheet position and free cash flow generation positions us well to fund our growth options.” In the same month, the company issued US$1.15bn of corporate bonds — priced at lower coupon rates — to replace its near-term bond maturities. These recent capital activities demonstrate that while the global economy is facing multiple challenges, capital markets remain relatively liquid, unlike in the global financial crisis in 2008–09 when markets dried up.

Iron ore has been holding above US$80 a tonne throughout the outbreak. Some of the major iron ore miners achieved record production levels in Q1 2020 as China began emerging from the crisis and restoring business activity. Also, China is expected to increase public spending on infrastructure projects to boost its weakening economy. Major banks such as Standard Chartered have forecast China’s GDP growth for 2020 will be as low as 3–4%, but will bounce back to around 9% in 2021. As a result, Rio Tinto and Fortescue are expecting demand from China to continue to recover and have maintained production outlooks on iron ore for 2020.

The economic outlook for India, the other major consumer of iron ore, will be similar to that of China. While short-term demand has been affected by the slowdown, there is a general expectation that consumption will recover as India lifts its lockdown. The IMF has forecast GDP growth for India in 2020 will be 1.9%, rising to 7.4% in 2021.[1]

1 Saheli Roy Choudhury, “IMF says India’s growth rate could top 7% in 2021 if the coronavirus outbreak is brought under control.” *CNBC,* 20 Apr 2020: https://www.cnbc.com/2020/04/20/coronavirus-imf-forecasts-india-growth-rate-at-7point4-percent-in-2021.html

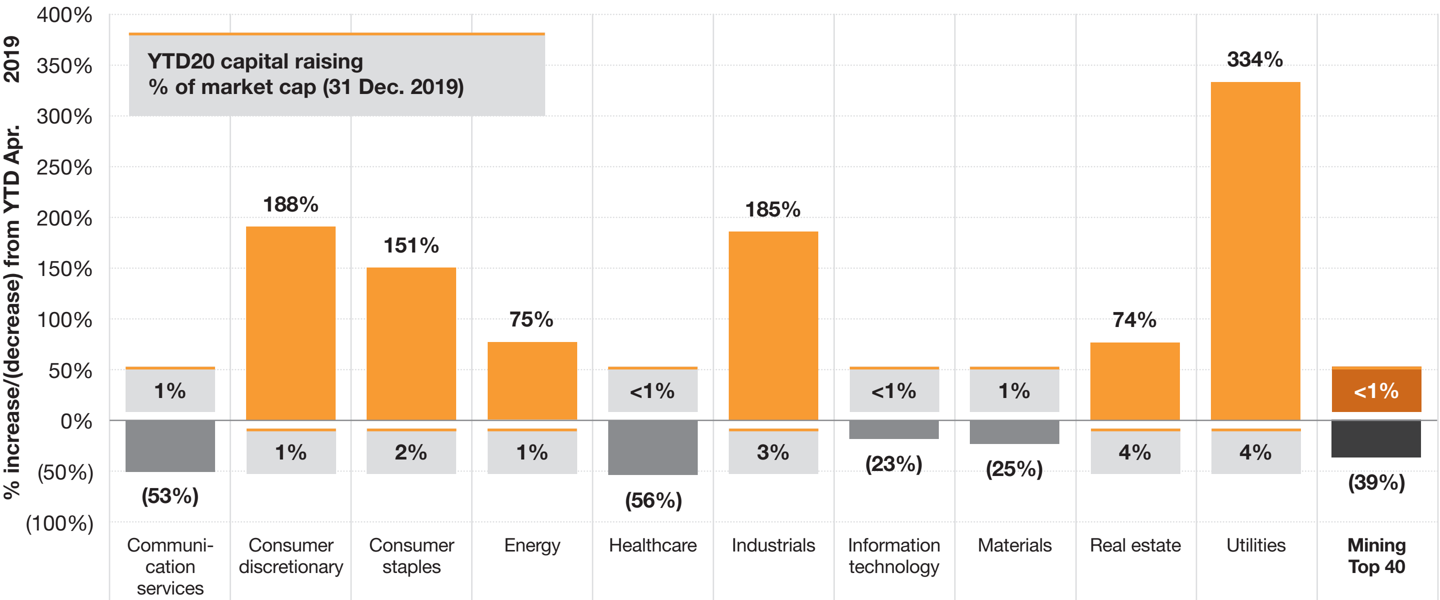
Deals in mining

Time for a different deal

It's a bittersweet time for mining mergers and acquisitions. The Top 40 are better placed than most to do big deals but face an uncertain outlook and practical constraints. In this environment, miners may find value in doing smaller, high-quality deals closer to home.

With strong balance sheets and adequate liquidity, the world's Top 40 miners are in good shape to capitalise on deal opportunities this year. Unlike leaders in other sectors, the Top 40 have avoided the scramble for new debt or heavily discounted capital. In the first four months of 2020, miners sought 39% less fixed income and equity capital compared to the same period last year. At the end of 2019, the Top 40 had $US88bn in cash holdings and gearing of 31%.

Exhibit 8: YTD Apr. 2020 relative sector capital raisings



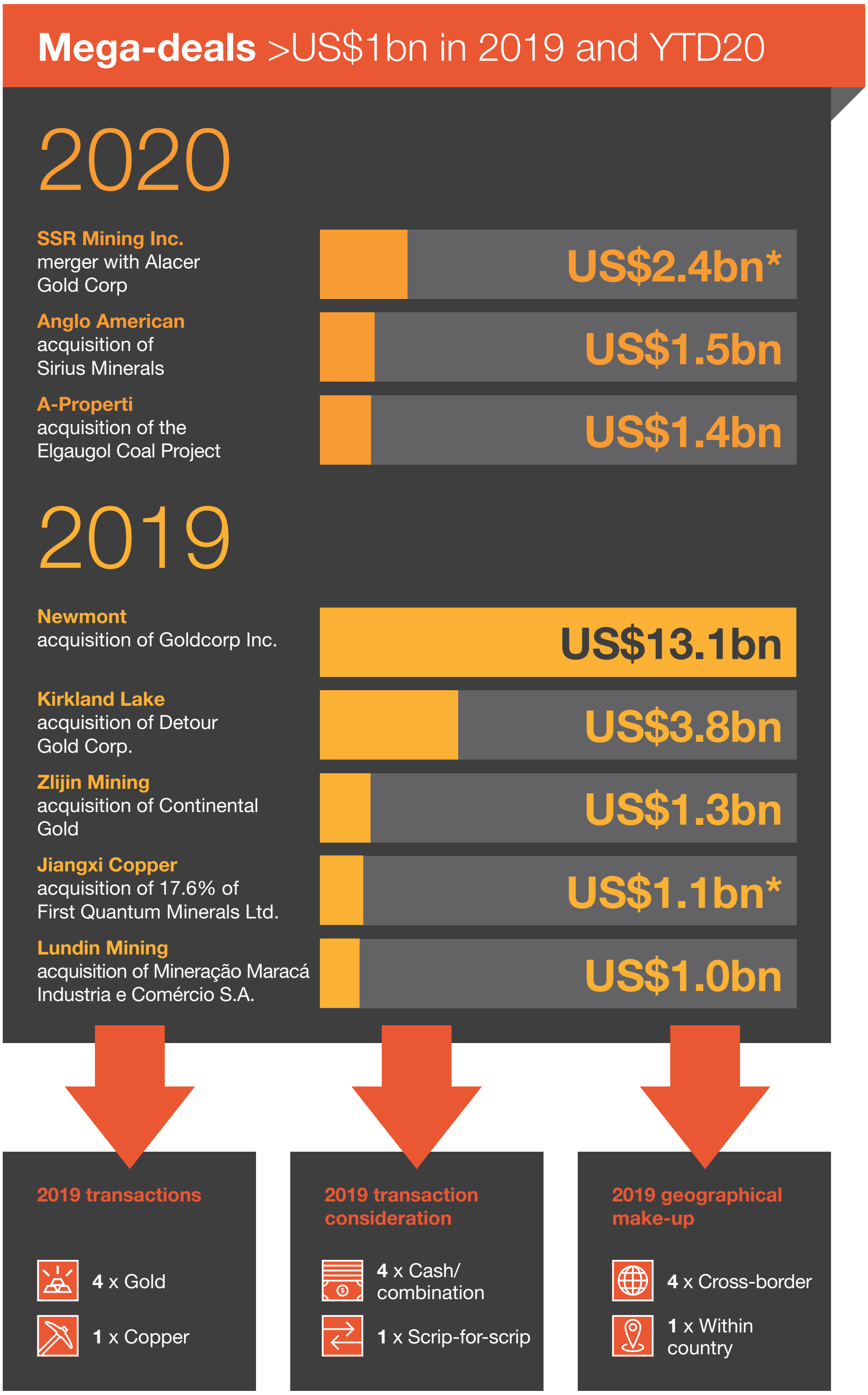
Source: S&P Capital IQ, PwC analysis

Not a year for mega-deals

Over the past few years, the world's large miners have made disciplined investment decisions in line with their long-term strategies. How long they can refrain from opportunistic buying remains to be seen. But just because the Top 40 can afford to do deals does not mean they will, or they should. We expect 2020 will be a slower year for M&A compared to 2019, particularly for large transactions. There are two reasons why.

First, shareholders may take a dim view of miners spending large sums of cash in the current economic environment. After all, capital discipline has been expected and indeed rewarded by shareholders, which will likely continue as greater confidence on valuations is sought. But certainty will be difficult to provide given share price volatility and doubts about commodity prices and demand. Big deals could also affect liquidity and the Top 40's ability to weather further downturns should the pandemic drag on or worsen.

Second, COVID-19–related travel restrictions have put a brake on the mechanics of deal-making. Miners are unable to conduct face-to-face negotiations and due diligence, such as site inspections. It's hard to imagine that last year's five mega-deals — four of which were cross-border transactions — would have been completed in the current environment. The Top 40 will have to either wait until travel restrictions ease or mobilise teams in target jurisdictions if they want to continue to pursue overseas deals. Alternatively, they may bide their time until the current uncertainty and volatility start to settle.

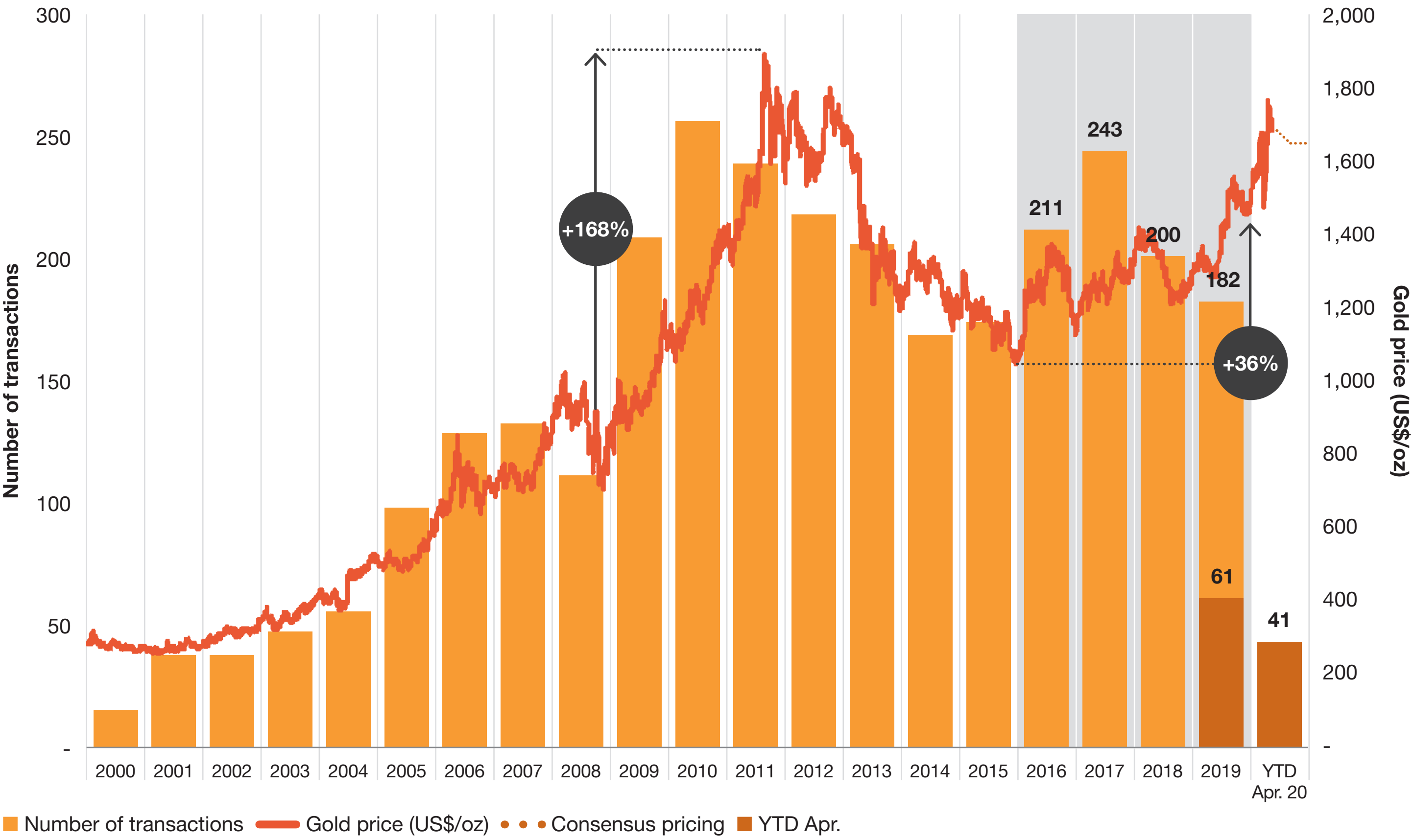


*announced, not yet closed

Note: The dollar amounts presented above reflect total transaction value ($USD) on announcement of offer.

Source: S&P Capital IQ, PwC analysis

Exhibit 9: Historical gold transaction volume



Source: S&P Capital IQ, PwC analysis

Look for a local bargain

As big transactions take a backseat, smaller ones start to make more sense. Top 40 miners may look for quality local assets that were performing well before the pandemic but are under pressure in the current environment. In fact, local buyers are at an advantage over international competitors while travel bans are in place. It's hard to run due diligence on an asset if you're not allowed into the country to see it. In addition to local mining assets, opportunities may arise to acquire mining technology, analytics and broader support service capability while values for such businesses may be depressed. Newcrest, which has recently raised capital, and others with surplus liquidity have the ability to fund these transactions.

Be gold wary

Gold has been the standout commodity in M&A in the past few years. But with the gold price heading northwards, don't expect this to continue. In fact, in the first four months of 2020, deal activity in gold fell by 33% compared to the same period in 2019. Gold miners appear to have learnt their mistakes from the early 2010s and are avoiding the pitfalls of pursuing large cash and debt-backed deals in a rising price environment. We expect gold deals to be less frequent and smaller this year and next, with more transactions on a scrip-for-scrip basis.

New kids on the block?

It's sometimes easy to forget that just below the Top 40 sit a group of world-class mining companies eager to break into the top tier. The size difference between those at the bottom of the Top 40 and those just beneath it is tightening. There are a few miners in the 41–60 bracket, including Evolution Mining, Pan American Silver and Shanxi Meijin Energy Co, that started the year with strong balance sheets and cash holdings and in good shape to weather the current economic environment. Each is well-positioned for M&A growth that could see them springboard into the Top 40 next year.

Cyber

Cyber: Mining's safety blind spot?

Mining companies may think they're an unlikely target for cyberattacks, but as reliance on autonomous and digital technology grows, so too does the cybersecurity risk. And the consequences can be a matter of life or death. Cybersecurity should be an integral part of the Top 40's safety and business strategies.

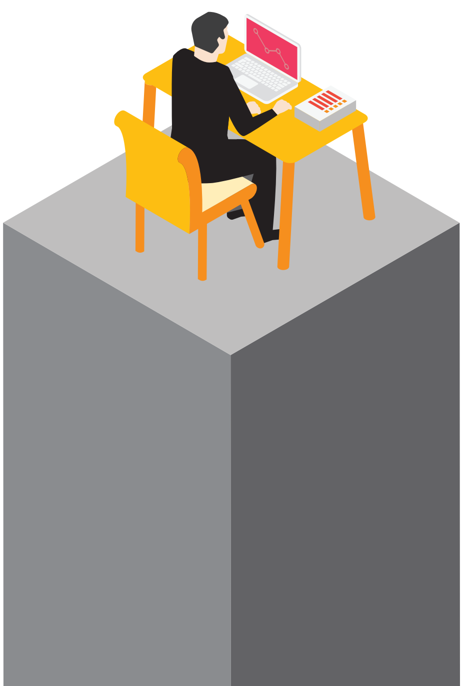
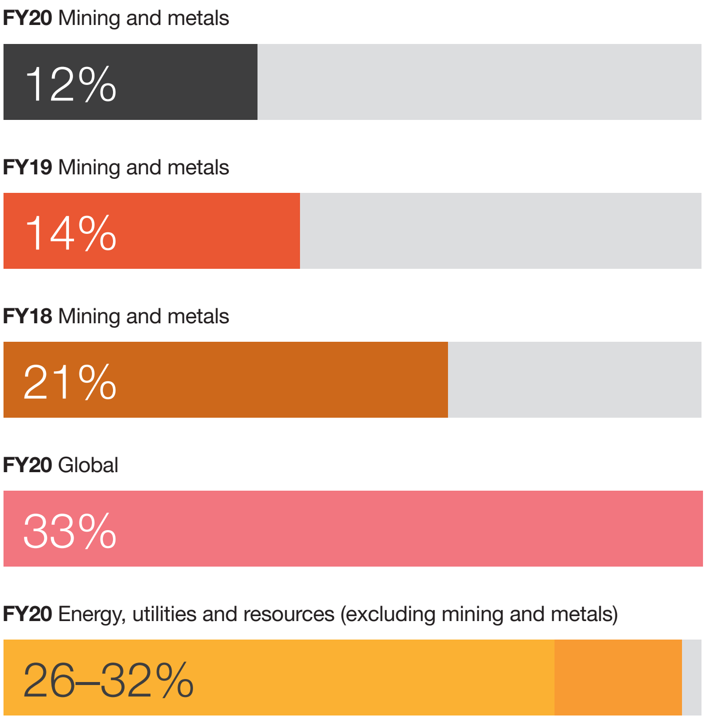


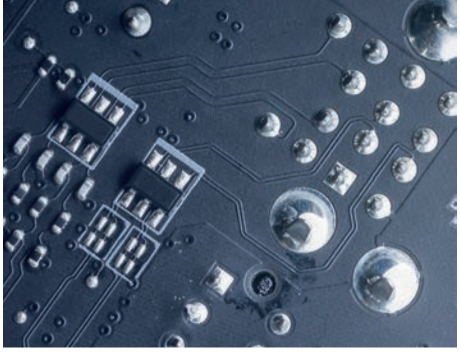
Exhibit 10: CEOs who are 'extremely concerned' about cyber threats on their company's growth prospects



Survey question: How concerned are you, if at all, about each of these potential economic, policy, social, environmental and business threats to your organisation's growth prospects? (Showing only 'extremely concerned' responses for 'cyber threats.')

Source: PwC's 23rd *Annual Global CEO Survey*, 22nd *Annual Global CEO Survey*, 21st *Annual Global CEO Survey*

In this year's PwC Global CEO Survey, only 12% of mining and metals CEOs were 'extremely concerned' about cyber threats, compared to 33% of leaders globally and 26–32% in energy, utilities and resources (excluding mining and metals). This result is not a one-off — cyber concerns among mining CEOs have been falling over the last three years. Yet, over a similar period, the number of reported cyber breaches among mining



companies increased fourfold.[2] Are miners underestimating the risk? There are three key reasons why they should be more worried.

First, the more digitally connected the company, the more vulnerable it is to disruption via cyberattacks. Mining companies are increasingly using automated and connected operational technologies (OT) to run mines. But in doing so, they inadvertently create multiple new entry points for would-be criminals. For example, OT systems that control critical mining processes are connected with corporate office networks. But the corporate network is a far less trusted environment, with users, suppliers and contractors all regularly exchanging emails and accessing the Internet in a far more open manner. Hackers may find entry to a company's network via a supplier with weak cybersecurity and end up directly controlling critical mine safety systems, processing facilities or heavy machinery.

Second, the potential consequences of a cyberattack on OT can be severe and life-threatening. Attacks on underground ventilation units, tailings dam monitoring systems, pipeline controls or gas monitors, for example, could significantly impact worker and community safety. In 2018, hackers tried to sabotage a petrochemical plant in Saudi Arabia by infiltrating its operating systems and trying to trigger an explosion. The perpetrators failed only due to a mistake in their computer code. But the recovery took months. And the incident was only one in a string of cyberattacks targeting the country's petrochemical industry at the time.[3]

Third, motives for OT attacks can be varied and include politically or ideologically motivated actors. Competitor sabotage is a risk as well. While ransomware-type attacks gather a lot of public attention today, money is not always the endgame. Perpetrators may be looking to cause harm and disruption for their own sake or to make a public statement that furthers their cause.

Under attack and paying for it

There's no doubt that cyber is an expensive business. Gartner reported that global cybersecurity spending increased from US$101bn in 2017 to US$124bn in 2019. But the price of dealing with an attack is substantial too: in the United States, the average bottom-line impact of a single cyberattack is US$8m, while the global average is US$4m.[4] The worldwide cost of cybercrime is now $608bn, almost 1% of global GDP.[5]

Adding to the cost is the fact that companies often don't know they have been targeted. On average, cyberattacks go undetected for 200 days. And once detected, it takes a further 70 days to contain the incident.[6] That's a long time to have hackers potentially in control of operational and safety systems or digging around your network looking for vulnerabilities they can exploit in the future.

For mining organisations, the cost can be even greater given the legacy nature of many OT systems. It is not straightforward to remediate OT systems, not only due to limited maintenance windows but also because these systems are often no longer supported by vendors. Trying to alter legacy systems can often carry far greater risk.

Cyber safety at the heart of strategy

Mining companies are renowned for putting safety at the heart of everything they do. But with the growing risks associated with mining automation, cybersecurity also needs to be a core aspect of safety. Miners can leverage their strong safety cultures to embed the concept of 'cyber safety,' which like other forms of safety, is non-negotiable.

Mining companies looking to become cyber safe should consider these key questions:

Are we setting the right tone at the top? The importance of cybersecurity should flow from the board and C-suite to all levels. Security teams can help by regularly training senior executives and directors about cybersecurity.

Do we treat cyber as more than a technology issue? Cyber intersects with legal teams, risk teams, media and external affairs, health and safety functions and more. It needs to be embedded in people's way of working and integrated across the company.

Are we ready to defend against a cyberattack? Readiness should be tested regularly through crisis-simulation exercises with people from different parts of the company — not just the security team. These kinds of exercises are essential for helping the company adapt to rapidly evolving cyber threats.

2 Verizon, *2019 Data Breach Investigations Report* and *2016 Data Breach Investigations Report*

3 Nicole Perlroth and Clifford Krauss, "A Cyberattack in Saudi Arabia Had a Deadly Goal. Experts Fear Another Try." *New York Times,* 15 Mar 2018: https://www.nytimes.com/2018/03/15/technology/saudi-arabia-hacks-cyberattacks.html

4 IBM Security, *Cost of a Data Breach Report,* 2019

5 McAfee, *The Economic Impact of Cybercrime: No Slowing Down,* 2018

6 IBM Security, *Cost of a Data Breach Report,* 2019

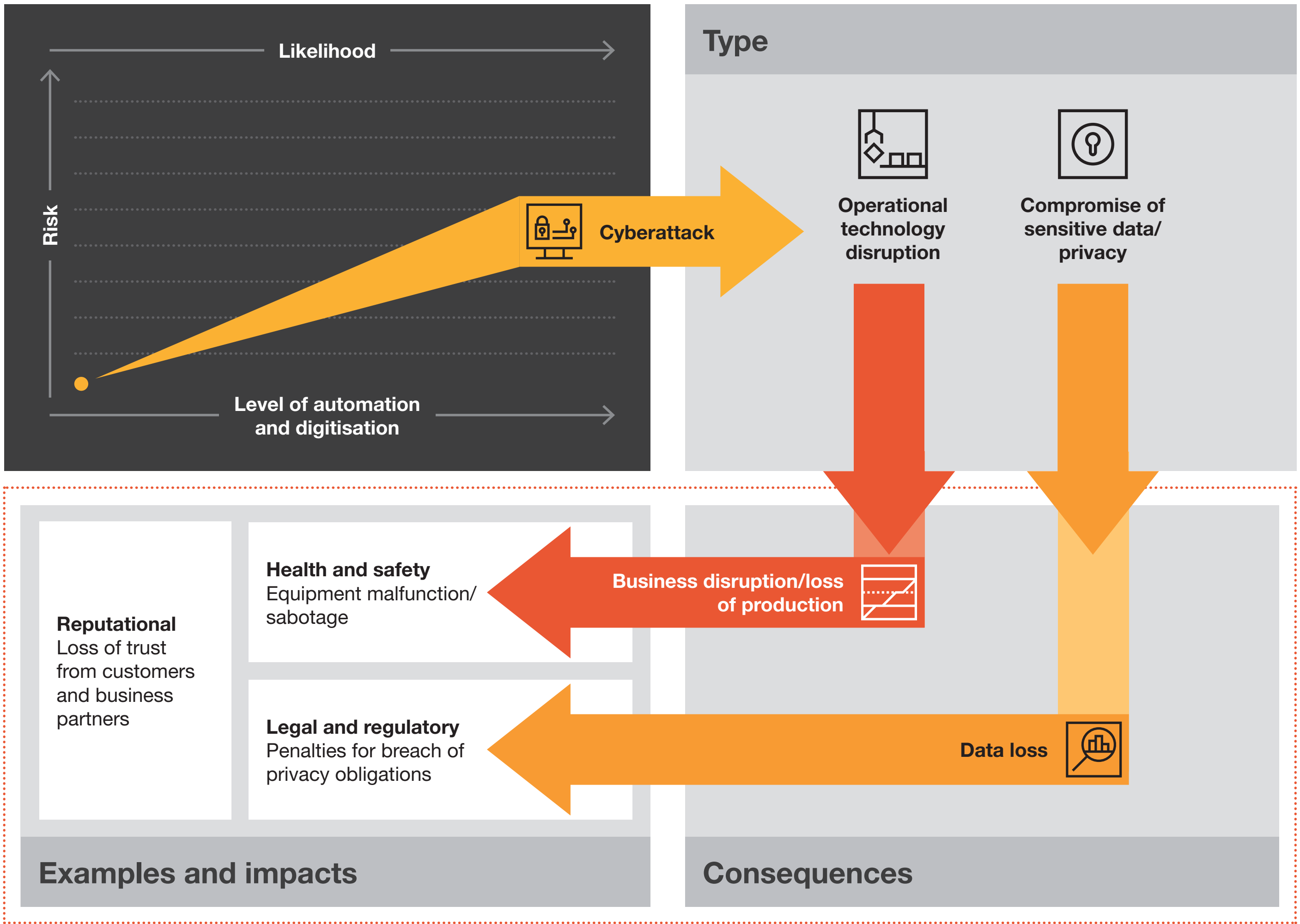
COVID-19

The COVID-19 crisis has tested many miners' ability to rapidly provide remote working solutions that are secure and resilient to cyber threats. How can we learn from this experience to scale more effectively for the future?

Like many industries, mining continually faces the threat of increased phishing emails, both directly and through third-party suppliers. But the pandemic has heightened this risk as attackers seek to take advantage of vulnerable businesses and more isolated workforces.

COVID-19 has highlighted the issue of resilience from a digital and technology standpoint. Cybersecurity needs to be an integral part of that discussion.

Cyber: Mining's safety blind spot?



Source: PwC analysis

ESG

Who's transparent and accountable on ESG?

Big mining companies have a crucial role to play to protect the social licence of 'brand mining.' But our analysis shows that on the reporting front some are doing more of the heavy lifting than others. The Top 40 must work together to encourage greater transparency and accountability on ESG.

Miners have been under pressure to set, track and report against environmental, social and governance goals for some time. But over the last few years, stakeholders have ramped up their expectation, and ESG is now a fundamental part of investment and supply chain decisions.

For example, in January 2020, BlackRock, the world's largest fund manager, said it would divest from any company earning more than 25% of revenue from thermal coal. It warned it would continue to evaluate sectors with high ESG risk and vote against management and directors who don't meet its standards. And it called for more widespread and consistent adoption of relevant disclosures.

In May 2020, Norway's Norges Bank dropped mining majors Glencore PLC and Anglo American PLC, among others, from the country's US$1tn sovereign wealth fund and placed BHP Group under observation for its production of coal or coal-based energy. The bank also blacklisted Vale SA for causing severe environmental damage.

Rightly or wrongly, stakeholders often consider miners as a collective, not as individual companies. As a result, every miner's actions have a direct impact on the social licence of the sector. The recent tailings dam failures, for example, significantly impacted the brand of mining around the world. Conversely, miners that set and meet ambitious ESG targets can lift the reputation of mining more broadly.

To raise mining's ESG credentials, miners need to lift their game both individually and collectively. Mining responsibly, considering all aspects of the mining life cycle, is more important now than it has ever been. But so too is being open and transparent about it. Reporting on the areas that really matter to stakeholders, whether they be investors, customers, employees, governments or the community at large, is critical in telling mining's ESG story.

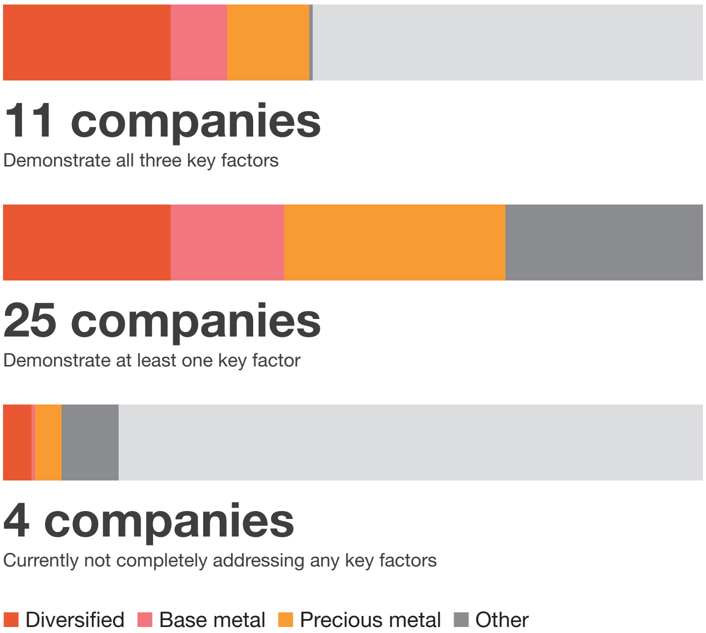
Who's walking the talk?

As industry leaders, the Top 40 are particularly influential. We analysed what they are disclosing to stakeholders about their performance on ESG.

Although most large miners are moving in the right direction on disclosure, some are performing better than others. Only 11 of the Top 40 companies (28%) are setting public ESG commitments and targets, reporting consistently against them, and linking executive and management performance to achieving them. No one commodity group is outperforming any other. But given rising stakeholder expectations, all Top 40 miners should have moved past the stage of general and loose commitments about ESG.

Stakeholders want sustainability to be the engine of a company, not just an optional extra. The miners that are leaders in ESG get this and have embedded ESG at the core of their strategy. They set goals and link these to key performance indicators (KPIs) and management pay. They also disclose how they are tracking against their targets. In other words, they are accountable and transparent. All companies in the Top 40 should be aiming to meet a similar standard.

Exhibit 11: Top 40 ESG disclosures



Key factors:

1. Sets detailed and defined ESG commitments and targets
2. Links to KPIs and reports consistently against them
3. Links to executive and management performance

Source: Annual sustainability reports, PwC analysis

Time for a global ESG standard

The lack of an agreed global ESG standard for mining has been a significant impediment to sector-wide progress. Without a clear framework, mining companies are unclear about what's expected of them, and stakeholders struggle to make comparisons and objective judgements about ESG performance. Adding to the confusion are the myriad of independent initiatives, such as the Task Force on Climate-related Financial Disclosures, the Global Reporting Initiative and the CDP.

How does mining find a way to take ownership of ESG, be accountable and transparent, and work towards the same set of goals? Perhaps it's time for miners to sit down and work towards a common global standard about what constitutes responsible mining and how companies will report their performance against it. The gold sector's Responsible Gold Mining Principles (RGMP) or the International Council on Mining and Metals (ICMM) mining principles might be a useful starting point. It's a challenging task, to be sure, but one that mining has dealt with before. The development of the JORC Code in Australasia — for reporting exploration results, resources and reserves — is an instance of miners and industry groups coming together and agreeing on a shared path forward.

The job of improving 'brand mining' is every miner's responsibility. The more companies that can demonstrate they are meeting their stakeholders' expectations, the more the sector benefits through a stronger social licence and the ability to attract higher-quality, more patient capital.

COVID-19

Some communities are looking to mining companies to support them through the economic recovery. Several of the Top 40 are answering the call. How else can mining help?

COVID-19 has laid bare some risks around fly-in fly-out (FIFO) dependent workforces. Is now the time to reconsider engaging with stakeholders and communities on workforce planning for the future?

Key takeaways

Although the majority of the Top 40 have benefited from uninterrupted production allowed by major mining economies, they have also played their part in demonstrating their resilience to such a global shock event. Strong balance sheets, in conjunction with appropriate risk management to reduce infection risk, has allowed them to remain operational, with pressures in FY20 results more likely to come from price pressures via demand variability. Although the focus in 2020 is likely to be on optimising operational outcomes and remaining financially fit, we are encouraging the Top 40 to consider a collective step up in ESG behaviours, metrics and reporting disciplines, as well as a review of cyber risk within the broader remit of safety first.

COVID-19–fortified

- Maintain appropriate safeguards to limit risks to production. Transfer learnings from mine sites directly impacted by infections.
- Continue the significant support and collaboration with governments and communities to supercharge recovery.

Strong balance sheets put the miners in an enviable position

- Continue fiscal restraint, with capex and returns to shareholders moderated, thereby ensuring sufficient liquidity exists to survive any prolonged COVID-19 impacts.

Focus on risk management remains key

- Focus on risk management procedures to minimise likelihood of future disruptions. This should include de-risking key supply chains through localisation.

Workforce management to ‘new normal’

- Reimagine the new normal for workforce planning, including taking a fresh look at FIFO and contracting/outsourcing arrangements.
- Continue automation push through and post–COVID-19.

Cyber safety needs attention

- Treat operational cybersecurity as a health and safety issue, and invest accordingly.

ESG accountability to improve

- Set detailed and defined goals and be accountable and transparent.
- Work towards a sector-led global standard for ESG.

Top 40 global mining companies

PwC has analysed 40 of the largest listed mining companies by market capitalisation as of 31 Dec. 2019.

2020 rank	2019 rank	Change from 2019 rank	Company	Country	Year end	Commodity focus
1	1	–	BHP Group Limited	Australia/ UK	30 June	DIversified
2	2	–	Rio Tinto Limited	Australia/ UK	31 Dec.	Diversified
3	3	–	Vale S.A.	Brazil	31 Dec.	Diversified
4	5	▲ 1	China Shenhua Energy Company Limited	China/ Hong Kong	31 Dec.	Coal
5	6	▲ 1	MMC Norilsk Nickel	Russia	31 Dec.	Nickel
6	4	▼ 2	Glencore Plc	Switzerland	31 Dec.	Diversified
7	9	▲ 2	Newmont Corporation	United States	31 Dec.	Gold
8	7	▼ 1	Anglo American plc	UK/South Africa	31 Dec.	Diversified
9	11	▲ 2	Barrick Gold Corporation	Canada	31 Dec.	Gold
10	25	▲ 15	Fortescue Metals Group Limited	Australia	30 June	Iron Ore
11	10	▼ 1	Grupo México, S.A.B. de C.V.	Mexico	31 Dec.	Diversified
12	13	▲ 1	Freeport-McMoRan Inc.	United States	31 Dec.	Copper
13	8	▼ 5	Coal India Limited	India	31 Mar.	Coal
14	16	▲ 2	Newcrest Mining Limited	Australia	30 June	Gold
15	20	▲ 5	Zijin Mining Group Company Limited	China/ Hong Kong	31 Dec.	Diversified
16	21	▲ 5	Public Joint Stock Company (Polyus)	Russia	31 Dec.	Gold
17	24	▲ 7	Agnico Eagle Mines Limited	Canada	31 Dec.	Gold
18	12	▼ 6	Saudi Arabian Mining Company (Ma'aden)	Saudi Arabia	31 Dec.	Diversified
19	26	▲ 7	Shandong Gold Mining Co., Ltd.	China/ Hong Kong	31 Dec.	Gold
20	18	▼ 2	China Molybdenum Co., Ltd.	China/ Hong Kong	31 Dec.	Diversified
21	19	▼ 2	Shaanxi Coal Industry	China/ Hong Kong	31 Dec.	Coal
22	New	–	Hindustan Zinc Limited	India	31 Mar.	Zinc
23	23	–	Antofagasta plc	United Kingdom	31 Dec.	Copper
24	22	▼ 2	ALROSA	Russia	31 Dec.	Diamond
25	14	▼ 11	Teck Resources Limited	Canada	31 Dec.	Diversified
26	35	▲ 9	AngloGold Ashanti Limited	South Africa	31 Dec.	Gold
27	33	▲ 6	Kirkland Lake Gold Ltd.	Canada	31 Dec.	Gold
28	15	▼ 13	South32 Limited	Australia	30 June	Diversified
29	30	▲ 1	Sumitomo Metal Mining Company	Japan	31 Mar.	Diversified
30	29	▼ 1	China Coal Energy Company Limited	China/ Hong Kong	31 Dec.	Coal
31	New	–	Impala Platinum Holdings Limited	South Africa	30 June	Platinum Group Metals
32	17	▼ 15	Mosaic Company	United States	31 Dec.	Potash
33	36	▲ 3	Polymetal International plc	Russia/ UK	31 Dec.	Gold
34	32	▼ 2	First Quantum Minerals Ltd.	Canada	31 Dec.	Copper
35	31	▼ 4	Jiangxi Copper Company Limited	China/ Hong Kong	31 Dec.	Copper
36	New	–	Sibanye Stillwater Limited	South Africa	31 Dec.	Platinum Group Metals
37	37	–	Tianqi Lithium Industries Inc.	China	31 Dec.	Lithium
38	28	▼ 10	Fresnillo PLC	Mexico	31 Dec.	Diversified
39	34	▼ 5	Yanzhou Coal Mining Company Limited	China/ Hong Kong	31 Dec.	Coal
40	New	–	Kinross Gold Corporation	Canada	31 Dec.	Gold

Source: S&P Capital IQ, PwC's Mine 2019: Resourcing the future

Constructing the report

Our analysis includes major companies from 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. Our report also expresses PwC's point of view on topics affecting the industry, developed through interactions with our clients and other industry leaders and analysis.

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 individual companies and no adjustments have been made to consider different reporting requirements. As far as possible, we have aligned the financial results of reporters to be as at, and for, the year ended 31 December 2019. For companies that do not have December year ends, we added and deducted reviewed results to reflect the comparable 12-month period.

All figures in this publication are reported in US dollars ($), except where specifically stated. The balance sheets of companies that report in currencies other than the US dollars have been translated as the closing US dollar exchange rate, and the cash flow and financial performance was translated using average foreign exchange rates for the respective years. Sums and percentages may not total the numbers shown due to rounding.

Some diversified miners undertake part of their activities outside the mining industry, such as the oil and gas businesses of BHP and Freeport-McMoRan, parts of the Rio Tinto aluminium business and Glencore's marketing and trading revenues and costs. We have not excluded these activities from the aggregated financial information, except where noted. Where their primary business is outside the mining industry, they have been excluded from the Top 40 listing.

All metal streamers are excluded. Entities that are controlled by others in the Top 40 and consolidated within their results have been excluded, even where minority stakes are listed.

As part of the annual exercise to identify our Top 40 miners, we conduct a reassessment of exclusions and inclusions in prior years. For the Mine 2020 publication, we have determined that Hindustan Zinc meets our criteria for inclusion.

2020 outlook methodology

Income statement

We have forecasted revenues from sale of commodities based on the critical inputs of commodity price and production volumes. Foreign exchange has not been considered as a result of the wide variety of the functional and operating currencies used by the Top 40.

For commodity price, we have utilised the latest consensus economic data available for each of the major commodities mined by the Top 40, coupled with the latest available production estimates for FY20 from annual reporting or, where available, more recent public information releases made prior to the finalisation of this publication.

The key driver of the reduction in revenue into FY20 is price declines, particularly thermal coal and copper, which contribute over US$20bn of the overall reduction. Reduced production in thermal coal is mostly offset by expected increases in copper and iron ore, resulting in minimal net impacts in dollar terms of changes in production.

Impairment is expected to remain consistent to prior year given that the majority of our Top 40's goodwill relates to recent gold acquisitions, which are not considered to currently be at risk of impairment.

Finance costs are expected to decrease marginally, which reflects an increase in the net debt of the group in 2019, offset by a reduction in LIBOR forecast.

Taxes are forecast with reference to the average effective tax rate over the last eight years, with the exception of notable anomalies.

Cash flow from operations was forecast with reference to EBITDA, with no material movement in working capital expected by the end of FY20. Investing cash flows include capex, which is expected to reduce approximately 20%.

Dividends paid are expected to remain flat, with more liquidity offset by companies retaining a cash buffer in the current period of uncertainty. Net debt repayments are expected to remain neutral as companies shore up their liquidity and take advantage of cheap debt to refinance.

Share issues are expected to remain low with notable exceptions (e.g., Newcrest) allowed for in our forecast.

Ten-year trend

US$bn	2019	2018	2017	2016	2015	2014	2013	2012	2011	2010
Aggregate market capitalisation	898	757	926	714	494	791	958	1,234	1,202	1,605
Aggregated income statement										
Revenue	692	683	600	496	539	690	719	731	716	435
Operating expenses	-515	-518	-454	-390	-448	-531	-554	-553	-487	-246
EBITDA	168	165	146	106	91	159	165	178	229	189
Impairment charges	-14	-12	-4	-19	-53	-27	-57	-45	-16	-1
Amortisation and depreciation	-50	-47	-41	-44	-42	-48	-42	-34	-26	-33
Net finance cost	-14	-13	-11	-9	-19	-15	-16	-6	-6	-7
Profit before tax	89	93	90	34	-23	69	50	93	181	148
Income tax expense	-29	-27	-29	-15	-4	-24	-30	-25	-48	-38
Net profit/(loss)	61	66	61	19	-27	45	20	68	133	110
EBITDA margin	24%	24%	24%	21%	17%	23%	23%	24%	32%	43%
Aggregated cash flow statement										
Operating activities	130	134	119	89	92	127	124	137	174	137
Investing activities	-69	-63	-46	-40	-69	-93	-125	-169	-142	-79
Financing activities	-66	-70	-63	-44	-31	-31	-3	21	-28	-35
Dividends paid	-55	-43	-36	-16	-28	-40	-41	-38	-33	-22
Share buybacks	-7	-15	-7	-4	-7	-6	-4	-5	-26	-5
Free cash flow	71	77	71	40	23	24	-6	11	76	70
Aggregated balance sheet										
Cash	88	101	102	86	82	83	168	104	113	105
Property, plant and equipment	649	610	663	616	579	745	712	701	601	511
Total assets	**1,139**	**1,080**	**1,129**	**1,063**	**1,047**	**1,231**	**1,256**	**1,245**	**1,139**	**943**
Total liabilities	**576**	**540**	**573**	**563**	**569**	**630**	**624**	**563**	**482**	**387**
Total equity	**563**	**540**	**556**	**500**	**478**	**601**	**632**	**682**	**657**	**556**

Note: The information included above includes the aggregated results of the Top 40 mining companies as reported in each respective edition of PwC's *Mine*.
Source: Annual reports, PwC analysis

S&P capital IQ waiver

Notable takeaways from this year's Top 40:

- Four new entrants: in zinc (Hindustan Zinc) and in precious metals (Impala Platinum, Sibanye Stillwater and Kinross Gold).
- The four above replaced Goldcorp (acquired by Newmont), KGHM Polsak Miedz Spoika Akcyina, PT Bayan Resources Tbk and China Northern Rare Earth (Group) High-Tech Co. Ltd, whose market capitalisations have declined in 2019.
- The dominance of Top 40 precious metals companies increased to 12 companies this year, coal companies decreased to five and diversified companies still accounted for 13.
- Two key movers in 2019 were Fortescue, which moved up 15 places to ten, and Mosaic, which moved down 15 places to 32.
- The top five companies make up 45% of total Top 40 market capitalisation.

Glossary

Terms	Definition
Capital employed	Property, plant and equipment plus current assets less current liabilities
Capital expenditure	Purchases of property, plant and equipment plus exploration expenditure
CEO	Chief executive officer
Current ratio	Current assets divided by current liabilities
Dividend payout ratio	Dividend per share divided by EPS
Dividend yield	Dividend per share (including buybacks) divided by the closing share price at the respective financial year end
EBITDA	Earnings before interest, tax, depreciation, amortisation and impairments
EBITDA margin	EBITDA divided by revenue
Free cash flow	Operating cash flows less purchases of property, plant and equipment
Gearing ratio	Net borrowings divided by equity
IMF	International Monetary Fund
M&A	Mergers and acquisitions
Market capitali-sation	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 asset value (NAV)	Net asset value based on analyst consensus estimates (not the net asset derived from the financial statements)
Net borrowings	Total borrowings less cash
Net profit margin	Net profit divided by revenue
PBT	Profit before tax
Quick ratio	(Current assets less inventory) divided by current liabilities
Return on capital employed (ROCE)	Net profit excluding impairment divided by capital employed
Return on equity (ROE)	Net profit divided by equity
Top 40	Forty of the world's largest mining companies by market capitalisation as at 31 Dec. 2019
Total borrowings	Long-term borrowings plus short-term borrowings plus lease liabilities
Total borrowings to equity	Total borrowings divided by equity
Working capital	Inventory plus trade receivables less trade payables

Mine 2020 writing team

For a deeper discussion, please contact one of our regional leaders in the PwC network or your local PwC partner:

Top L–R: Marcus Goddard, Mine 2020 lead partner (PwC Australia), Deveshnee Naidoo (PwC South Africa) and Toby Lace (PwC Australia)

Middle L–R: Suzaan Du Plessis (PwC Australia), Ryan Prystai (PwC Canada) and Tiago Domingos (PwC Australia)

Bottom L–R: Tom Stuart (PwC Australia), Paul Qiu (PwC Australia), Omar Salas (PwC Canada) and Ian Mackay (PwC South Africa)

We're also pleased to recognise contributions from Dedy Lesmana (PwC Indonesia), Jose Luis Velasquez (PwC Peru), Pablo Arancibia (PwC Chile), Ankit Gupta (PwC India), Henrique Machado (PwC Brazil) and Robert Di Pietro (PwC Australia).

Global mining leadership team

Global Mining Leader

Jock O'Callaghan
PwC Australia
+61 3 8603 6137
jock.ocallaghan@pwc.com

Africa

Andries Rossouw
PwC South Africa
+27 0 11 797 4060
andries.rossouw@pwc.com

Argentina

Leonardo Viglione
PwC Argentina
+54 11 4850 4690
leonardo.viglione@pwc.com

Australia

Chris Dodd
PwC Australia
+61 418 316 892
chris.dodd@pwc.com

Franz Wentzel
Global Mining Consulting Leader
PwC Australia
+61 7 3257 8683
franz.wentzel@pwc.com

Wim Blom
Global Mining Deals Leader
PwC Australia
+61 7 3257 5236
wim.blom@pwc.com

Brazil

Ronaldo Valiño
PwC Brazil
+55 21 3232 6015
ronaldo.valino@pwc.com

Canada

Kevin Chan
PwC Canada
+1 416 941 8321
kevin.t.chan@pwc.com

Chile

Colin Becker
PwC Chile
+56 229400689
colin.becker@pwc.com

China

Chong Heng Hon
PwC China
+86 10 6533 2244
chong.heng.hon@cn.pwc.com

India

Yogesh Daruka
PwC India
+91 33 4404 4288
yogesh.daruka@pwc.com

Indonesia

Sacha Winzenried
PwC Indonesia
+62 21 5212901
sacha.winzenried@pwc.com

Peru

Pablo Saravia Magne
PwC Peru
+51 1 211 6500
pablo.x.saravia@pwc.com

Russia and CIS

Mikhail Buchnev
PwC Russia
+7 495 976 6369
mikhail.buchnev@ru.pwc.com

United Kingdom

Jason Burkitt
PwC UK
+44 0 7740 064 717
jason.burkitt@pwc.com

United States

Niloufar Molavi
PwC US
+1 713 356 6002
niloufar.molavi@pwc.com

Marketing

Kristin Han
PwC US
+1 347 343 1646
kristin.l.han@pwc.com

pwc.com/mine