

Aussie Mine 2018

Healthy, but future fit?



Overview

Welcome to the 12th edition of Aussie Mine, 'Healthy, but future fit?'

Aussie Mine provides industry and financial analysis on Australia's mid-tier mining sector as represented by the mid-tier 50 (MT50) – the largest ASX mining companies with a market capitalisation of less than \$5 billion at 30 June 2018.

We've seen some remarkable results for the MT50 in 2018, due to the continuing upward trend in commodity prices coupled with cost-focused strategies of prior years. At a glance things seem healthy. But further analysis reveals organisations and mining leaders have further opportunities to focus on several key areas to be 'future fit', and position themselves for long-term positive growth.

At a high level, the MT50 are dealing with two extremes:

The good:

- Investor confidence has returned with, market capitalisation surging 28% on last years MT50, and all but three of the MT50 experiencing an increase in this measure
- Revenue continued its rise (up 13%) with nearly all commodity groups contributing to EBITDA margins hitting 31% – maintaining near-record levels
- With profits soaring back to 2012 levels, the sector ploughed money into dividends, debt reduction and capex – even setting aside cash for future deals.

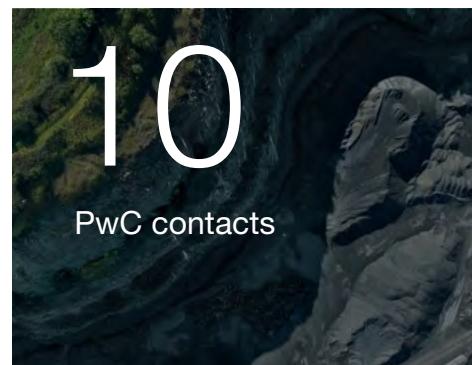
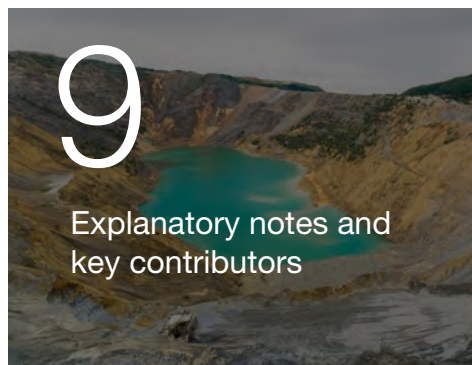
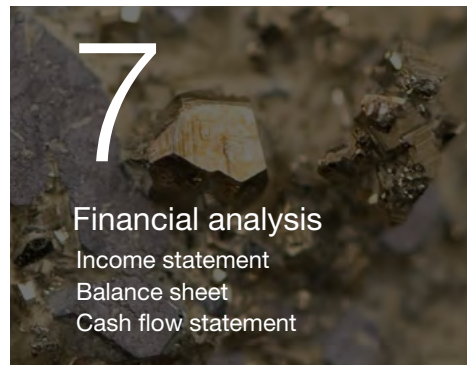
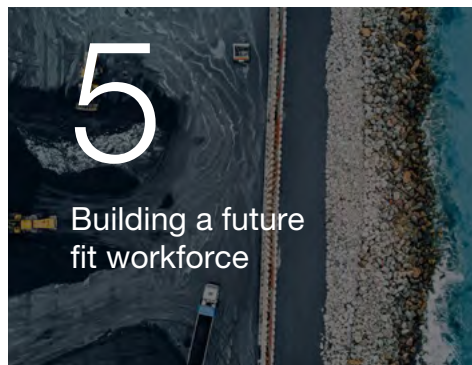
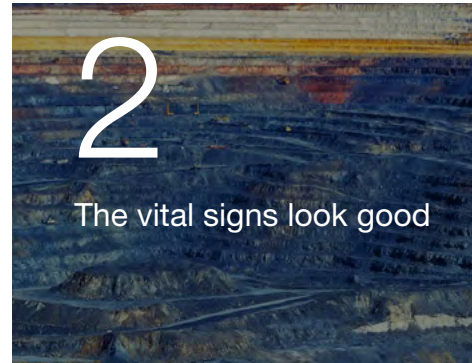
The looming challenges:

- Operating costs are again moving more closely in line with revenue
- Exploration expenditure is still limited, and has reduced as a proportion of capex
- There is a lack of new mines – be it risk aversion or permitting challenges, capital expenditure is centred primarily on brownfield operations
- The sector risks becoming less relevant to the next generation workforce – tertiary enrolments for mining engineers are rapidly shrinking, and negative press about working culture and conditions such as fly-in/fly-out (FIFO) isn't helping attracting top talent
- A brewing global trade war continues to make business leaders nervous.

This edition of Aussie Mine will look at the impact these factors are having on the MT50.

Simply put, while they appear healthy, they must renew focus to be 'future fit'.

Contents



The vital signs look good:

- Market cap ↑ 28% on last year's MT50, or 53% for this year's MT50
- Revenue continues to rise ↑ %13
- EBIDTA margins maintain record high levels at 31%
- Capital expenditure increased ↑ by 32%
- Dividends paid continue to surge up ↑ 33%

...and a big war chest with cash up 25% to over \$6 billion



with an additional 5 companies paying

...future fit?

Class of 2018

4 companies graduated, highest on record.



But the challenges are significant:

Operating costs

jumped by

10%



Impairments

↑ 56%

Exploration as a proportion of capex decreasing

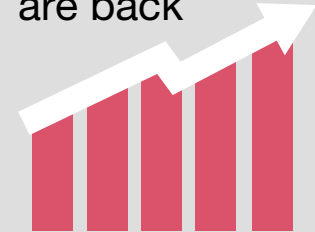
12%



Gold grades in the MT50 have reduced by over

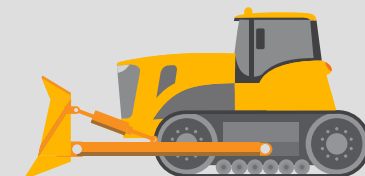
20% in the last 2 years

Deal volumes are back



in a time of rising prices

Workforce challenges are looming



Who made the cut - the top 50 mid-tier miners

The 50 largest mining companies listed on the Australian Securities Exchange with a market capitalisation of less than \$5 billion at 30 June 2018. These companies have an average market capitalisation of almost \$1.2 billion.

2018 Rank	2017 Rank	Company Name	Primary Commodity	Producer	Market Capitalisation as at 30/06/2018	Market Capitalisation change 2017 to 2018
1	3	Iluka Resources Limited	Mineral Sands	✓	4,710	30%
2	na	AngloGold Ashanti Limited	Gold	✓	4,550	-13%
3	4	Northern Star Resources Limited	Gold	✓	4,449	56%
4	10	Independence Group NL	Diversified	✓	3,017	63%
5	7	OZ Minerals Limited	Copper	✓	3,012	36%
6	8	Mineral Resources Limited	Iron Ore	✓	2,997	47%
7	9	Regis Resources Limited	Gold	✓	2,583	36%
8	11	St Barbara Limited	Gold	✓	2,514	74%
9	12	New Hope Corporation Limited	Coal	✓	2,485	95%
10	6	OceanaGold Corporation	Gold	✓	2,317	-4%
11	13	Saracen Mineral Holdings Limited	Gold	✓	1,791	89%
12	27	Lynas Corporation Limited	Rare Earths	✓	1,550	301%
13	23	Pilbara Minerals Limited	Lithium	-	1,509	171%
14	14	Sandfire Resources NL	Copper	✓	1,451	63%
15	17	Orocobre Limited	Lithium	✓	1,348	85%
16	18	Galaxy Resources Limited	Lithium	✓	1,241	89%
17	21	Western Areas Limited	Nickel	✓	971	69%
18	15	Resolute Mining Limited	Gold	✓	945	8%
19	na	OM Holdings Limited	Manganese	✓	914	635%
20	16	Syrah Resources Limited	Graphite	-	860	18%
21	43	Kidman Resources Limited	Lithium	-	771	282%
22	na	Jupiter Mines Limited	Manganese	✓	750	100%
23	19	Alacer Gold Corp.	Gold	✓	734	20%
24	22	Westgold Resources Limited	Gold	✓	672	19%

New entrant
 Returning entrant

2018 Rank	2017 Rank	Company Name	Primary Commodity	Producer	Market Capitalisation as at 30/06/2018	Market Capitalisation change 2017 to 2018
25	na	New Century Resources Limited	Zinc	-	660	100%
26	20	Gold Road Resources Limited	Gold	-	649	11%
27	24	Zimplats Holdings Limited	Diversified	✓	646	20%
28	44	Altura Mining Limited	Lithium	-	592	207%
29	26	Dacian Gold Limited	Gold	-	587	47%
30	28	Champion Iron Limited	Iron Ore	✓	553	43%
31	na	Global Geoscience Limited	Lithium	-	529	223%
32	25	Metals X Limited	Diversified	✓	490	20%
33	na	Aurelia Metals Limited	Diversified	✓	488	512%
34	32	Mount Gibson Iron Limited	Iron Ore	✓	477	32%
35	34	Perseus Mining Limited	Gold	✓	445	49%
36	na	Atlas Iron Limited	Iron Ore	✓	399	187%
37	41	Base Resources Limited	Mineral Sands	✓	333	57%
38	na	Tungsten Mining NL	Tungsten	-	320	3141%
39	31	Tribune Resources Limited	Gold	✓	318	-13%
40	37	Ramelius Resources Limited	Gold	✓	307	29%
41	na	Panoramic Resources Limited	Nickel	-	305	223%
42	38	Silver Lake Resources Limited	Gold	✓	302	28%
43	na	Paladin Energy Ltd	Uranium	✓	300	100%
44	na	Metro Mining Limited	Bauxite	✓	293	101%
45	42	Brockman Mining Limited	Iron Ore	-	291	38%
46	na	Flinders Mines Limited	Iron Ore	-	273	55%
47	na	West African Resources Limited	Gold	-	263	53%
48	na	Australian Mines Limited	Nickel	-	238	642%
49	45	Pantoro Limited	Gold	✓	237	24%
50	na	Tawana Resources NL	Lithium	-	236	174%

New entrant
 Returning entrant

Source: CAPIQ

The vital signs look good

This rang true in 2018, with positive commodity prices across most sectors and recent cost-out strategies delivering remarkable returns. This year saw the most impressive ‘graduating class’ in the 12-year history of Aussie Mine, with four companies from last year’s MT50 group breaking through the \$5 billion market capitalisation ceiling.

These favourable conditions meant that this year’s MT50 market capitalisation surged 28% against last year’s group of companies, growing to \$58.7 billion. Better still, when focusing solely on the 50 companies in the 2018 list, market capitalisation is up a staggering 53%. Only three of this year’s MT50 failed to improve their market capitalisation position during 2018, a sign that investor confidence has returned.

The fit

MMG, Yancoal, Evolution and Whitehaven have leapt from the top end of the MT50 – a level of upward movement not seen since 2007. Typically at most only one or two companies exceed our market capitalisation threshold in any given year. A combination of factors led to the successes of these four companies:

Mid-tier upwards mover

	MMG	Yancoal	Evolution	Whitehaven
Large commodity price shift	✓	✓	✗	✓
Recent expansion	✓	✗	✗	✓
Recent acquisition	✗	✓	✓	✓
State owned	✓	✓	✗	✗

MMG successfully commissioned its Dugald River project ahead of schedule and under budget. Coupled with strong copper and zinc prices and growing copper production at Las Bambas, this launched MMG out of the list.

Yancoal has had a spectacular two years. Starting outside the list in 2016, it raced through the ranks, with its performance supercharged by thermal coal prices and with the recent Coal & Allied acquisition from Rio Tinto almost doubling production.

Evolution continued to prioritise margins, reporting annual record lows for AIC and AISC in 2018. Benefiting from increased production following its recent acquisition of a 30% stake in Ernest Henry, Evolution has focused on quality, not size – clearly well received by the market.

Whitehaven rose out of the list due to record production at Maules Creek and surging thermal coal prices. With the acquisition of Rio’s 75% stake in the Winchester South coking coal project in June 2018, Whitehaven shows no sign of slowing in the coming year.

The healthy

This year saw nine first-time entrants to the MT50, with **New Century, Aurelia, Tungsten Mining** and **Tawana** headlining the inclusions – all benefiting from successful deals. **OM Holdings, Jupiter Mines, Panoramic** and **Paladin** were welcomed back into the list. It was ‘take two’ for Jupiter Mines and Paladin, who reappeared on the ASX this year. Jupiter Mines made its return after four years with one of the biggest mining IPOs in the last decade, while Paladin was reinstated to official quotation following its successful recapitalisation.

The out of shape

Eleven companies fell by the wayside this year. After three years in the MT50, **Teranga** delisted itself from the ASX due to lack of trade activity, though it remains active on the TSX. **Realm** struggled in the face of acquisition by Taurus Resources. Despite some recent positive sentiment in uranium pricing, the looming closure of the Ranger mine has ended **ERA's** run and it fell from the list for the first time since Aussie Mine began in 2007.

Picking up pace...

Anticipation surrounding developments at lithium miners **Kidman Resources** and **Altura Mining** doubled their market capitalisation, driving them up our list in 2018. They rose 22 and 16 rankings respectively. The push towards electric vehicles has created tremendous belief in lithium. Though this battery mineral was barely mentioned in earlier editions of Aussie Mine, there are now seven lithium-related companies in the MT50.

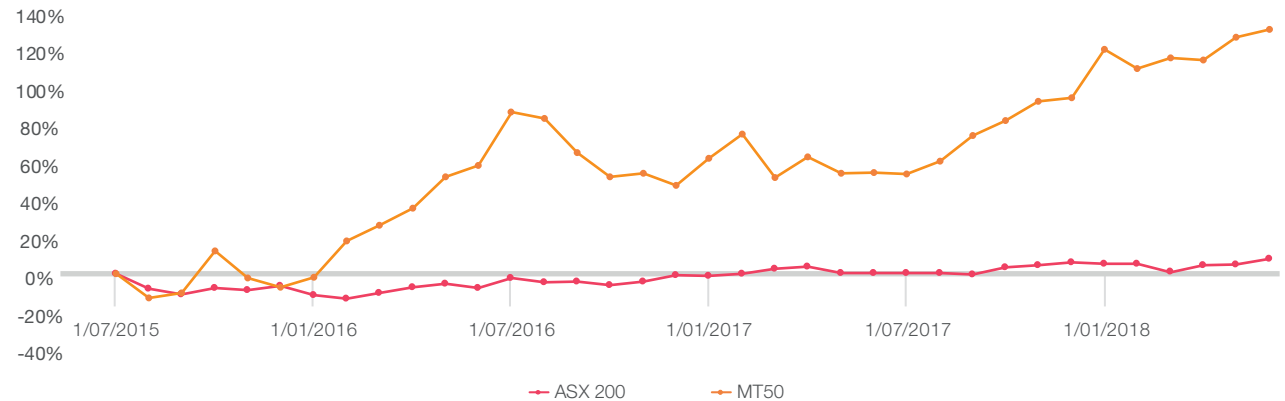


MT50 in perspective

The MT50 group of companies is continuing to outperform the broader ASX 200 – a trend that’s gathered pace since late 2015. While the ASX 200 has grown a modest 9% since July 2015, the MT50 market capitalisation has grown a staggering 140%.

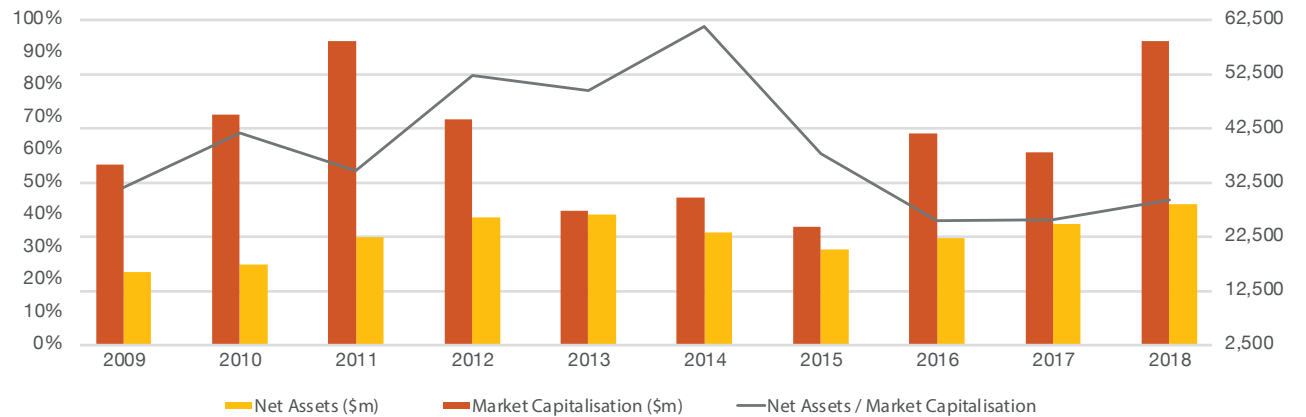
Compared to 2017, the group’s market capitalisation has grown an incredible 53% to \$58.7 billion, with gold, lithium and coal leading the way. The headroom of market capitalisation over net assets has also improved from 57% to 99% in 2018. This translates to a \$30.2 billion premium over net assets, with all commodities reaping the benefits of improved investor sentiment. However, recent history can serve as a warning, with a similar premium wiped out in the space of two years between 2011 and 2013.

ASX 200 vs Standardised MT50



Source: CAPIQ

MT50 Index: Market Capitalisation vs Net Assets







Source: CAPIQ

This year has been particularly successful for the group's profit line, adjusted net profit after tax lifted by 69% to \$2,996 million levels having not been this high since 2012.

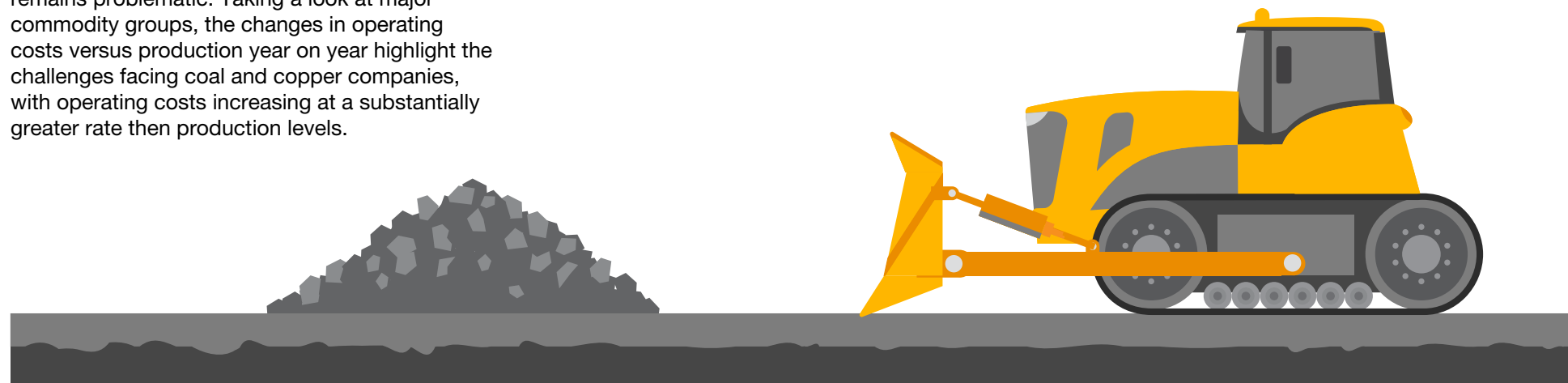
Gold miners continue to represent a third of the list and contributed the most top line growth of the commodities within the group (the exception being iron ore, which fell slightly) as revenues grew 13% to a collective \$21,986 million. Revenue lifted off the back of a positive pricing environment across most commodities and improved production levels.

Thirty-five of the MT50 are in production and make up 86% of the list's market capitalisation. Those in exploration and development trumped their producing counterparts however, with market capitalisation increasing by an average of 124% vs. 45% for their producing peers, clear evidence investors are willing to back sorely needed new projects.

Interestingly, for those MT50 companies in production there are indications that cost control remains problematic. Taking a look at major commodity groups, the changes in operating costs versus production year on year highlight the challenges facing coal and copper companies, with operating costs increasing at a substantially greater rate than production levels.

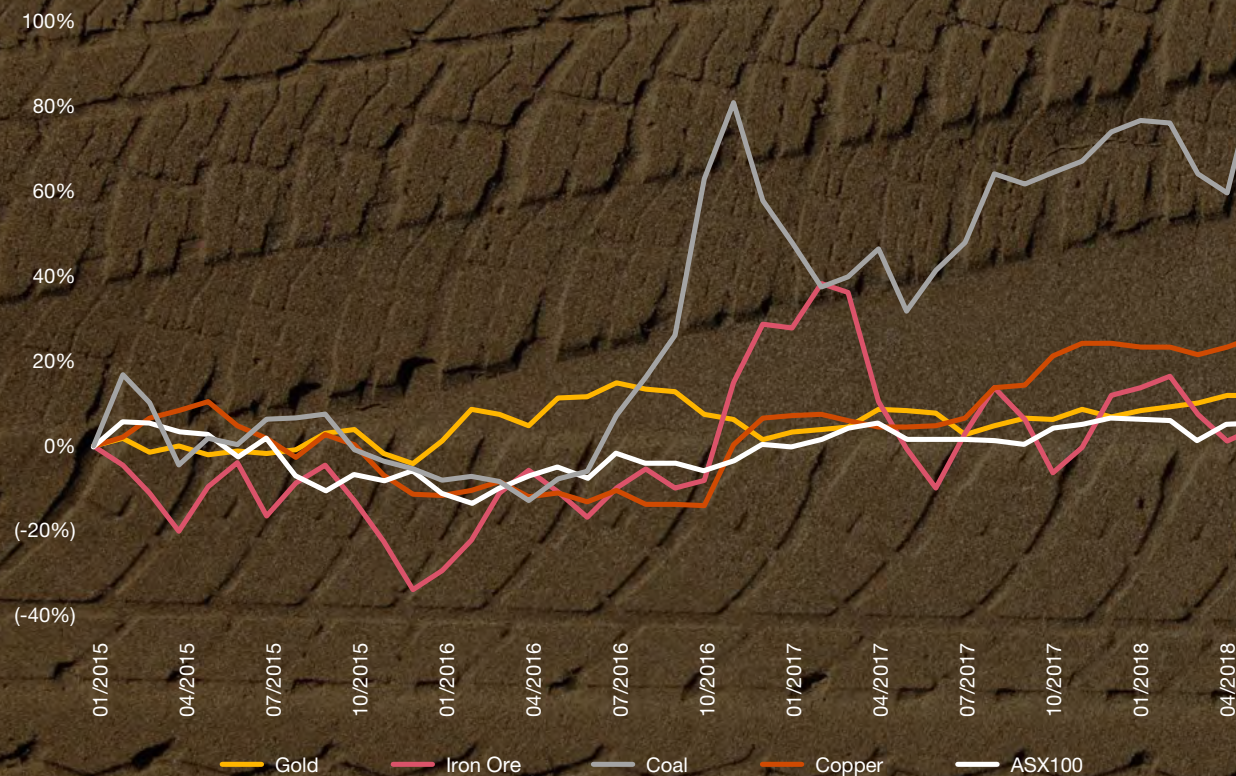
Commodity	% change in operating costs	% change in production
 Coal	21%	10%
 Copper	26%	0%
 Gold	5%	9%
 Iron ore	-5%	-16%

Source: PwC Analysis



Productivity – time for new ways of thinking

ASX 100 v Key commodities price movements



Source: www.indexmundi.com & www.marketindex.com.au

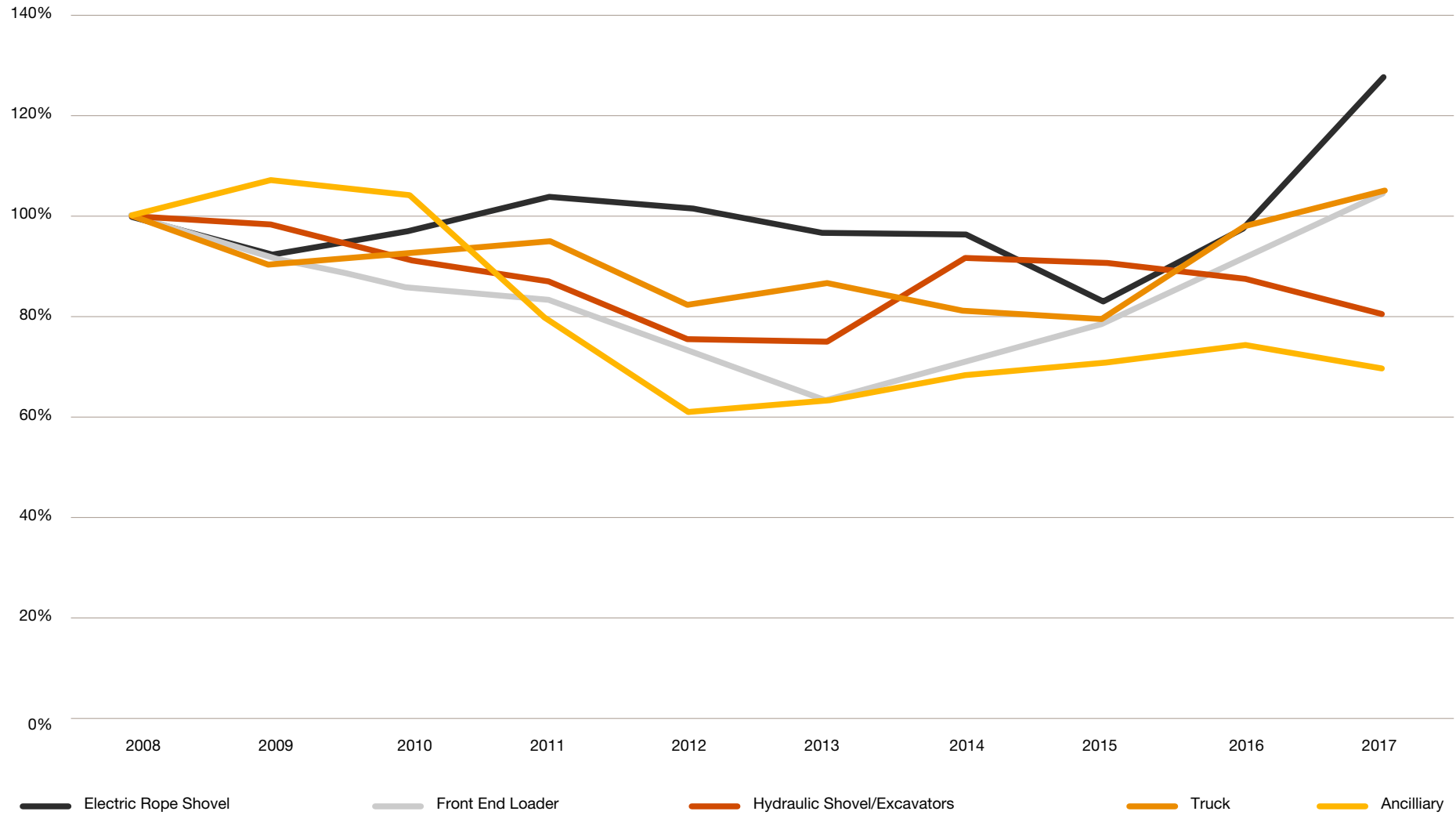
While commodity prices have risen to highs not seen since 2012, growing challenges and upheavals to global trade have caused many mid-tier mining companies to become less secure about what lies ahead. These commodity price rises have left many acquisition targets out of reach for the MT50, and doubts about economic models and business cases have added to uncertainty around where prices will go next.

With acquisitions becoming more challenging, most mining companies are looking to brownfield expansion of existing operations or capital investment in equipment to improve productivity. The logic here – common among large and small companies alike – is that growth or renewal of existing operations is the ‘silver bullet’ to improved mining and site productivity.

Our productivity work with miners indicates this ‘internal focus’ has not increased productivity as miners had hoped. PwC’s Mining Equipment Productivity database* (the world’s largest equipment-level productivity database) shows that equipment productivity has only improved marginally over the past decade despite nearly every mining company touting productivity increases in the last decade.

* A database encompassing over 10,000 pieces of equipment across 2 billion activity cycles – focused on open cut mining

Worldwide Mining Equipment Productivity Index



Source: PwC's Mining Equipment Productivity Database

MT50 working up a sweat?

We expect mid-tier miners to be more productive than big mining companies as they:

- Have less equipment to focus on
- Generally have less equipment on each site and lower associated congestion
- Have more control of strategy and culture
- Provide top performing employees more freedom to have an impact.

However, our experience shows mid-tier miner productivity tends to be much more mixed. Even within individual companies, productivity variations between sites can be immense.

So how can the MT50 really move the needle on productivity? For large mining companies, there's a push for automation and removal of manual labour in operations, especially in open cut mining. Yet the anticipated benefits of automation are still to be proven, and the setup costs (equipment, infrastructure and operations) generally require scale to make the business case economic.

For many companies in the group, our experience in robotic mining indicates brownfield enhancements will see limited upside from automation in the near term. MT50 companies are generally very good 'fast followers', and most would benefit from waiting until equipment providers have addressed key performance concerns before looking to adopt to autonomous equipment.

Productivity from people, not gear



As commodity prices remain high, most miners will return their focus to maximising volume – generally, this takes the form of investing in additional equipment. This is a guaranteed way to reduce overall productivity as the equipment tends to either run at low utilisation rates, or, shifts existing equipment into poor performance.

So how can the MT50 maximise volumes at minimal cost?

Companies should focus on three things to dramatically improve their existing equipment productivity:

1. Support supervisors and superintendents
2. Accept failure
3. Move from 'dirt boss' to 'data boss'

Support supervisors and superintendents

Supervisors and superintendents are the heart of any mining organisation, and productivity stems from their ability to lead improvements. Most of these leaders have worked their way up from operator positions and have developed an understanding of mining systems. But many don't have experience translating ideas into business cases and actionable plans. As a result, we've seen many productivity initiatives kick off strongly but then struggle to maintain momentum beyond a few weeks.

Helping supervisors and superintendents improve their ability to deliver improvement projects is a simple and proven way to gain fast and sustainable productivity uplifts. Providing the right tools, fit-for-purpose methodologies, and hands-on coaching significantly increases operational productivity.

Accept failure

Leadership of mining companies is often dominated by large personalities, carrying a 'big stick' mentality towards performance. Failure is publicly called out and shamed, stifling innovation and leading to conservative cultures where only minor productivity improvements are realised. Coaching and support from managers and general managers is essential in creating a culture of continuous improvement and productivity. One-on-one training of mining leaders on meeting preparation and situational management, observations and on-the-spot feedback on culture, are proven to have significant and lasting impacts on behaviour, and on the development of an improvement-focused mindset across operational teams.

Move from 'dirt boss' to 'data boss'

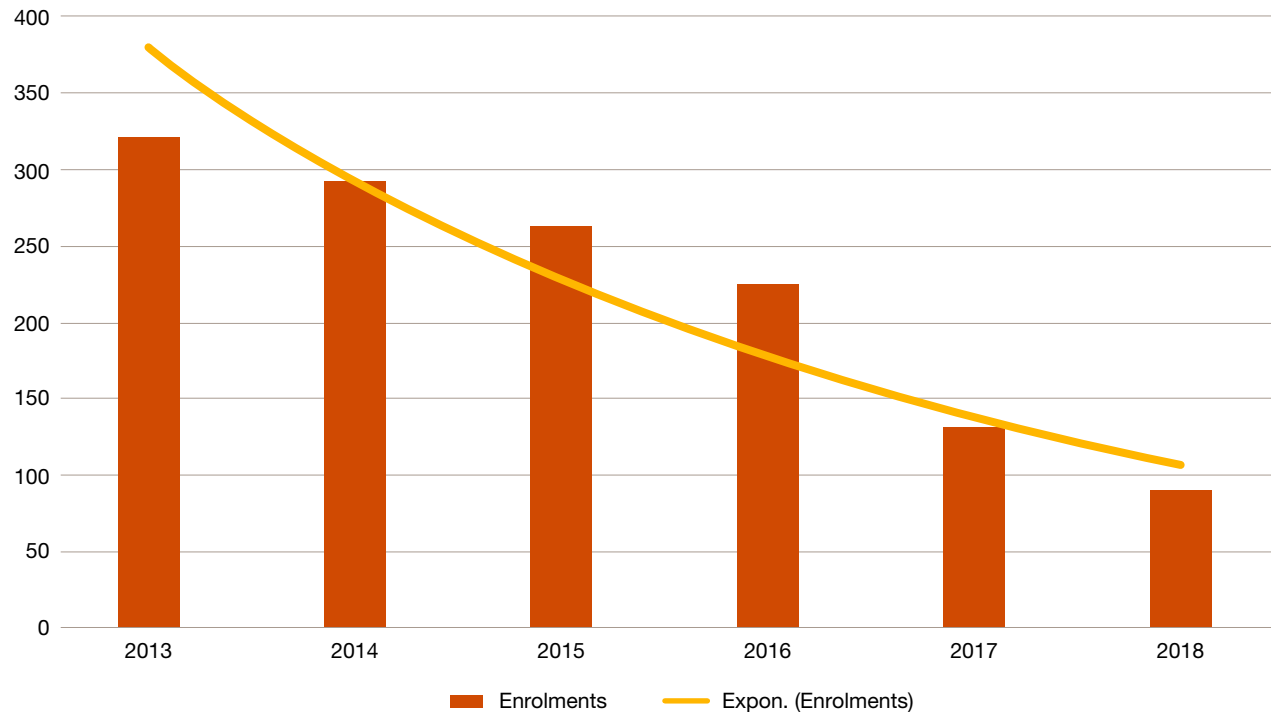
Few industries have assets that produce more data than mining equipment. Yet many mining companies do not use this data – instead managing via 'gut feel', handwritten notes (often on the back of supervisor's hands) or basic, high-level reports. Major mining companies are starting to embrace data analytics as a differentiator of performance, but we're still to see this approach being widely adopted across mid-tier miners.

Most companies struggle with getting started in analytics, or try 'drinking from the firehose' and measuring everything, eventually drowning in a sea of incorrect and faulty data. Focusing on a specific issue (i.e. shift change/last load to first load or loading unit operator variability) allows teams to not just understand the opportunity better, but to identify and address data quality and monitoring issues, simplifying the next analysis.

To deliver productivity gains without sacrificing safety performance, future fit mid-tier miners should follow the learnings of their global peers pursuing 'standardised work' projects. Using sound data analysis, these projects better enable the blue collar workforce to use technology, making tasks quicker, smarter and safer.

Building a future fit workforce

WA School of Mines engineering enrolments



Source: Curtin University. Enrolments are year to date at 17 July 2018

Following the recent uptick in mining performance, the war for talent is back on the agenda. The need for the mid-tier mining sector to build tomorrow's workforce remains unabated, and future supply looks far from where it needs to be.

Broader industry-relevant tertiary enrolments have been declining in recent years, and recent data released by the Western Australian School of Mines shows rapidly declining enrolments for mining engineers. Mining engineer enrolments have dropped each year for five consecutive years, now plummeting to less than one-third of 2013 enrolments.

Some of the primary reasons for the decline in enrolments are:

- Enduring negativity from past behaviours (job cutting during the downturn, not addressing environmental impacts, challenging community relations, a lack of workforce diversity etc.)
- A general lack of awareness among students about the opportunities within the mining industry
- A view that this cyclical industry is tough on its workforce, particularly FIFO workers (e.g. physical and mental impacts on wellbeing, extended absence from friends and family).

There's a new paradigm in workforce talent that needs to be addressed by mid-tier miners, which appears to be proving difficult. Mid-tier miners are not simply competing against each other for top talent, rather, they're up against a vast array of industries and much more appealing organisations such as the Googles of the world. As mining companies continue to invest and focus on innovation and digitisation, the demand for digitally skilled candidates will increase. And while traditional engineering roles will continue to remain relevant, the need for people who are competent in AI, robotics, data analytics and mechatronics will be key for future fit mining organisations. The mining businesses of the future will see a convergence of perspectives between mining engineers and newer-age digitally focused roles.

Recruiting senior talent – board and senior executive diversity to remain a challenge

Role modelling senior female talent won't come easily for the MT50 when looking to attract the next generation of workers. Despite a continuing focus on improving gender equality across workplaces, the group has plenty of work to do.

Of the entire MT50, only **Lynas Corporation** has a female chief executive/managing director currently at the helm.

Things are slightly better in the boardroom. While the number of male board members has remained the same between 2018 and 2017 (at 259), the representation of female board members has increased from 30 to 40 (13%). This still remains well below the comparative percentage in the top 40 companies reported in our global Mine series, which shows a female board representation of 19%.

Get fitter for the fight for talent

The MT50 should proactively showcase the benefits and opportunities that a career in mining presents. The sector is undergoing substantive and exciting change - and presents graduates with huge opportunities to not only work with a myriad of new technologies (automation, robotics and artificial intelligence), but positively impact communities and the environment. As it stands, mining has a brand problem. And it's not helping the war for talent. Remaining relevant to the future workforce is a no-brainer 'must-do', particularly given the stiff competition.

The real-world application of technology involved in mining processes, and the positive social impact that miners can achieve when working in unison with local communities doesn't often receive the attention of social media channels. There are multiple workforce successes and good news stories that mid-tier miners and industry bodies can use to actively promote to tomorrow's workforce.

The top priorities mid-tier miners should address in order to get fitter for the fight for talent:



- Acknowledge that organisational culture must align more closely with the values of graduating millennials, and tailor accordingly.
- Modify existing recruitment strategies and sources to meet the needs of a more digitally enabled mining company.
- Work towards an optimal balance and interaction between the new workforce and the experienced campaigners, who have seen the ups and downs before.
- In light of fierce competition from global peers, develop mentoring programs for new recruits to foster high performers and loyalty. This will be particularly important when looking to improve gender equality, as the mid-tier will be unable to 'buy' talent the way their global peers can.

Deals analysis and outlook

Deals rise in time of higher prices – have we seen this before?

The MT50 group has enjoyed strong commodity prices and healthy balance sheets, driving significant appetite for deals in 2018. There has been a shift from 2017 where the group were divesting non-core assets to pay down debt and return equity to shareholders. The volume of deals increased from 15 in 2017 to 21 this year. However, with quality assets harder to find and competition high, more bite-sized deals are being made as complementary additions to existing portfolios. The average value for completed deals has decreased to \$125 million, compared with \$405 million in 2017 (or \$185 million excluding Yancoal's \$2.7 billion acquisition of Coal & Allied Industries).

Gold continued to feature, with four acquisitions by Northern Star and Ramelius and one sale by Saracen. We also saw four deals in iron ore and a few in other metals including lithium and copper, with some of the group venturing overseas to secure these deals.

Key contributors to this year's deal activity include:

- **OZ Minerals** – acquiring Avanco Resources for \$425 million, funded by cash, adding further diversification to its operations by adding copper production and further exploration opportunities in Brazil
- **Northern Star** – completing its acquisition of the Pogo gold project in Alaska from Sumitomo Metal Mining, making their first move overseas
- **Tawana Resources** – contributed to a \$425 million merger of equals with its Bald Hill lithium project joint venture partner Alliance Mineral Assets to consolidate the joint venture and provide access to dual listings in Australia and Singapore
- **Hancock Prospecting** – looking to bolster its iron ore interests as it announces an intention to acquire Atlas through compulsory acquisition, currently estimated at a total transaction value of \$444 million
- **Galaxy Resources** – entering into a \$373 million deal with Korean steel giant POSCO to sell lithium tenements in Argentina, and pursuing other high-grade assets.

PwC deals perspective – what will appeal in 2019?

Gold – expect more global deals

Having enjoyed strong prices, strong demand, and favourable exchange rates, we're expecting to see an ongoing presence of M&A activity for gold miners. The MT50 will be looking further abroad for these opportunities, as seen with **Northern Star's** acquisition of the Pogo mine in Alaska.

Lithium – can't get enough!

Demand is increasing for lithium, boosted by the interest in electric vehicles. We've seen **Galaxy Resources and Pilbara Minerals** announce deals, and we anticipate momentum to continue as offshore strategics look to secure access to high quality resources, and local companies seek to introduce partners to provide capital and offtake certainty.

Base metals – fuelling rising demand

Copper demand will continue to play an active role in M&A for 2019 as prices remain strong. We saw a number of copper deals in 2018, most notably **OZ Minerals'** purchase of the Antas copper-gold mine and **New Century Resources'** purchase of the Century Mine Rehabilitation Project. **Independence Group** and **Panoramic Resources** also have pending deals.

Completed M&A transactions greater than \$15 million (July 2017 to September 2018)

Target	Acquirer	Sector	Target Country	Ownership interest (%)	Approximate deal Value \$AUDm	Announcement Date	Mid Tier 50 Connection	MT50 Role
Mt Holland Lithium Project	Sociedad Química y Minera de Chile S.A.	Lithium	Australia	50	147	Jul-17	Kidman Resources Limited	Seller
King of the Hills gold mine	Red 5 Limited	Gold	Australia	100	28	Aug-17	Saracen Mineral Holdings Ltd	Seller
Century Mine Rehabilitation Project Pty Ltd	New Century Resources Ltd	Zinc	Australia	30	169	Oct-17	New Century Resources Ltd	Acquirer
Dioro Exploration Pty Ltd and HBJ Minerals Pty Ltd and Hampton Gold Mining Areas Ltd.	Northern Star Resources Limited	Gold	Australia	100	83	Nov-17	Northern Star Resources Ltd	Acquirer
Peak Gold Asia Pacific Pty Ltd	Defiance Resources Pty Ltd	Gold/Copper/ Zinc	Australia	100	77	Nov-17	Aurelia Metals Ltd	Acquirer
Avanco Resources Ltd	OZ Minerals Ltd	Copper gold	Brazil	100	425	Feb-18	OZ Minerals Ltd	Acquirer
Watershed Tungsten Project (Vital Metals Ltd)	Tungsten Mining NL	Tungsten	Australia	100	15	Apr-18	Tungsten Mining NL	Acquirer
Jaguar Operation	Round Oak Minerals Pty Ltd	Copper/Zinc	Australia	100	73	May-18	Independence Group	Seller
Atlas Iron Ltd	Fortescue Metals Group Ltd	Iron Ore	Australia	15	56	Jun-18	Atlas Iron Ltd	Seller
Atlas Iron Ltd	Hancock Prospecting Pty Ltd	Iron ore	Australia	11	49	Jun-18	Atlas Iron Ltd	Seller
Central Tanami Project	Northern Star Resources Ltd	Gold	Australia	15	20	Jul-18	Northern Star Resources Ltd	Acquirer
Pogo Gold Mine	Golden Opportunity Ventures	Gold	USA	100	357	Aug-18	Northern Star Resources Ltd	Acquirer
Total					1,499			

Pending M&A transactions greater than \$15 million (July 2017 to September 2018)

Target	Acquirer	Sector	Target Country	Ownership interest (%)	Approximate deal Value \$AUDm	Announcement Date	Mid Tier 50 Connection	MT50 Role
Cherish Metals Pty Ltd	Black Mountain Metals LLC	Nickel	Australia	100	15	Sep-18	Panoramic Resources Ltd	Seller
Explaurum Ltd	Ramelius Resources Limited	Gold	Australia	100	57	Sep-18	Ramelius Resources Ltd	Acquirer
Southern Hills Tenements (Creasy Group Pty Ltd)	Independence Group NL	Nickel/Copper	Australia	70	21	Mar-18	Independence Group	Acquirer
Atlas Iron Ltd	Hancock Prospecting Pty Ltd	Iron Ore	Australia	80	444	Jun-18	Atlas Iron Ltd	Seller
Talisman A Pty Ltd	Sandfire Resources NL	Energy	Australia	30	72	Jun-18	Sandfire Resources	Acquirer
Tenements in Salar del Hombre Muerto	POSCO	Lithium	Argentina	100	373	May-18	Galaxy Resources Ltd	Seller
Tawana Resources NL	Alliance Mineral Assets Limited	Iron Ore	Australia	100	225	Mar-18	Tawana Resources	Seller
Pilbara Minerals Ltd	POSCO	Lithium	Australia	5	159	Oct-17	Pilbara Minerals Ltd	Seller
Bengalla Coal Project	New Hope Corporation Limited	Coal	Australia	40	860	Aug-18	New Hope Corporation Limited	Acquirer
Total					2,226			

While the industry is well placed for further M&A activity to deliver growth, the risk of overpaying in times of rising prices will occupy the minds of mining executives.



Cashed up global miners, and the growing presence of private equity firms in recent Australian transactions have only heightened the competition for quality assets.

Financial analysis

Income statement analysis

Continued strength in prices

We've seen a continued trend of improved commodity prices, particularly with coal. The Australian price of thermal coal has been on the rise since July 2017, increasing by 31% in the last year. Infrastructure-driven growth in Asia (mainly China) has resulted in above-average growth and a continuing increase in demand for commodities like coal. Gold prices continued to remain steady amid global political and economic instability, while copper has recently lifted. The Australian dollar's relatively stable performance throughout 2018 has continued to help deliver higher commodity prices to the MT50.

Aggregated Income statement (\$m)	2018	2017	\$ change	% change
Revenue from ordinary activities				
Operating revenue	21,986	19,389	2,597	13%
Non-operating revenue	2	2	-	0%
Total revenue	21,988	19,391	2,597	13%
Less expenses from ordinary activities	(11,524)	(10,517)	(1,007)	10%
Gross profit	10,464	8,874	1,590	18%
Selling general and administrative expenses	(2,127)	(1,916)	(211)	11%
Exploration expenses	(409)	(339)	(70)	21%
Provision for bad debts	(4)	(6)	2	-33%
Stock based compensation	(52)	(40)	(12)	30%
Other income/expenses	(510)	(366)	(144)	39%
Adjusted EBITDA	7,362	6,207	1,155	19%
Depreciation and amortisation	(3,762)	(3,392)	(370)	11%
Adjusted EBIT	3,600	2,815	785	28%
Impairments and writedowns	(992)	(634)	(358)	56%
Other non-recurring items	485	50	435	870%
EBITDA	6,855	5,623	1,232	22%
EBIT	3,093	2,231	862	39%
Interest income	107	93	14	15%
Interest expense	(455)	(597)	142	-24%
Other non-operating items	35	(141)	176	125%
Profit from ordinary activities before tax	2,780	1,586	1,194	75%
Income tax (expense)/benefit	(840)	(716)	(124)	17%
Net profit/(loss) from continuing operations	1,940	870	1,070	123%
Earnings of discontinued ops	67	272	(205)	-75%
Minority interest in earnings	(3)	2	(5)	-250%
Net profit/(loss) to parent	2,004	1,144	860	75%
Adjusted NPAT	2,996	1,778	1,218	69%

Source: CAPIQ

Revenue

Total mining revenue continued its recent rise in 2018, increasing a further 13% to \$22 billion.

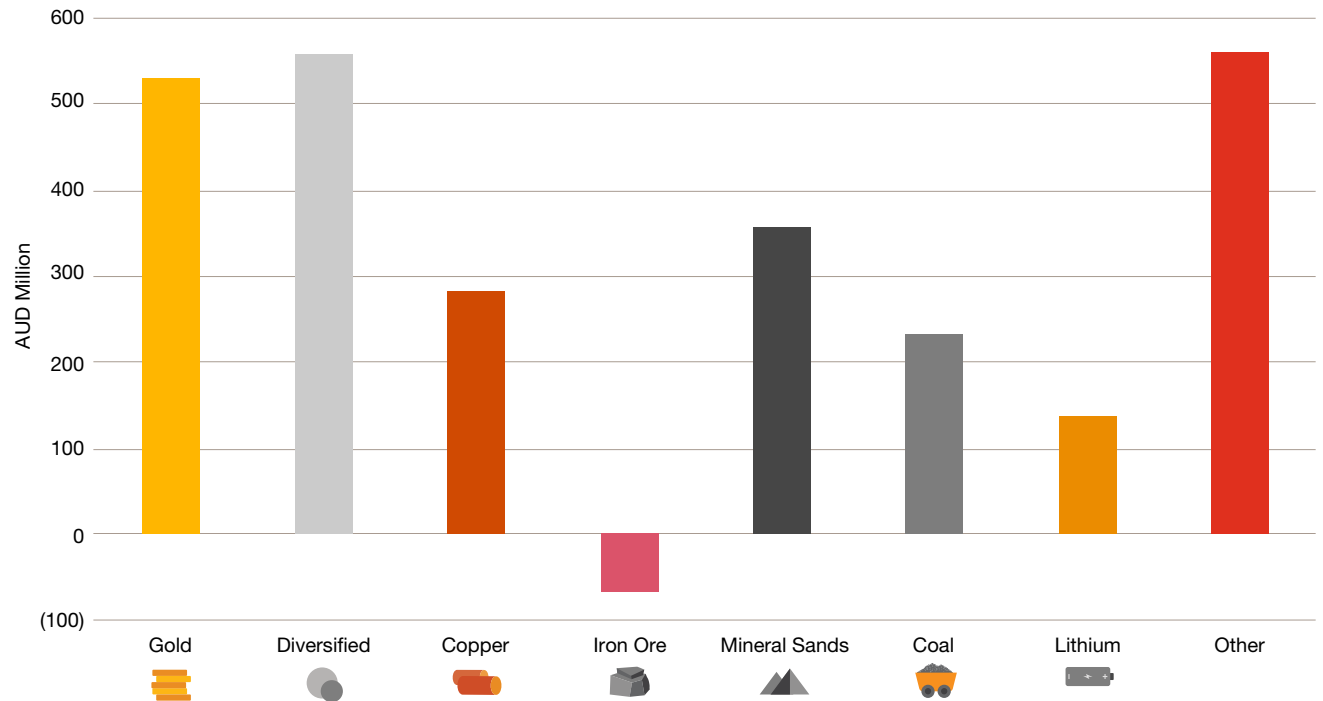
Gold continues to be the lead contributor, accounting for 53% of total MT50 revenue in 2018. Gold miners continued to benefit from high Australian dollar gold prices, which show no sign of decline amid ongoing global political instability.

Other key drivers of growth in operating revenue were diversified metals, manganese and nickel. Only iron ore experienced a decrease in revenue (3%), primarily due to slightly weaker realised prices in 2018.

Notable growth in 2018 included **OM Holdings** as it restarted mining activity after being in care in maintenance with additional furnaces firing up, and **Independence Group** lifting sales after commencing production at its Nova Operations in July 2017.

Similarly, gold companies benefited from continuing high Australian gold prices and production levels lifted to take advantage of favourable conditions. **Ramelius** demonstrated this when it acquired its Edna May operation, helping them achieve a 73% increase in revenue through 2018.

\$ Revenue Growth by commodity (2018 v 2017)



Source: CAPIQ

Impairment

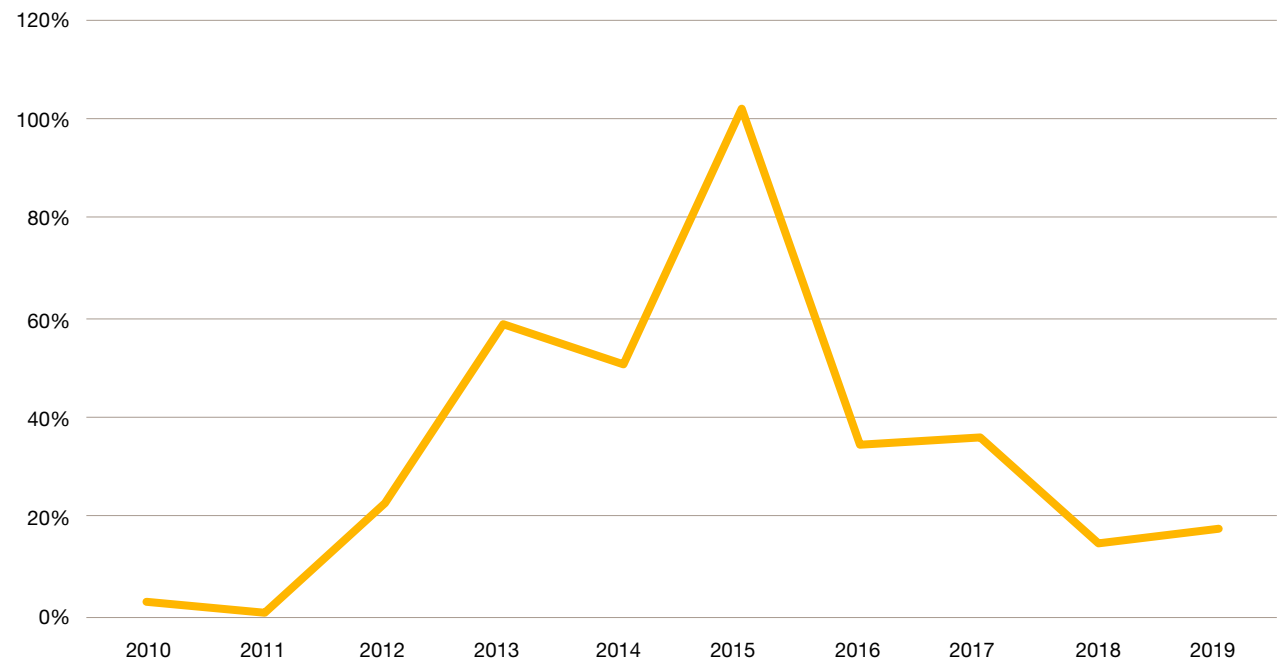
Impairment charges increased unexpectedly by \$358 million (56%) in 2018, from \$634 million in 2017 to almost \$1 billion this year. This comes after a continued reduction in impairment charges since 2015. Closer inspection reveals that 33 MT50 companies recognised an impairment charge of some sort, with 11 recognising impairment charges greater than \$10 million.

The majority of impairment charges related to strategic decisions impacting tangible assets from specific projects. Impairment reversals were absent again among the group despite long-term forecasts and mine plans benefiting from increased prices. Impairment as a proportion of capex remains relatively low compared to the peaks of 2013–2016, when collectively more than \$13 billion was written off by the group.

Notable impairments recorded in 2018 include:

- **AngloGold Ashanti** (\$384 million) – specific mining assets in South Africa were written down due to changes in mine plans to restructure the South African operations, and the decision to sell certain assets
- **Iluka Resources** (\$155 million) – following the idling of the Hamilton mineral separation plant in the Murray Basin
- **New Hope** (\$132 million) – with the impairment of the Colton exploration project due to increased charges associated with access to the Wiggins Island Coal Export Terminal
- **Atlas** (\$104 million) – relating primarily to its Horizon 1 Mining properties after rising costs and discounts to lower grade iron ore hit home

Impairment as a % of capex (purchase of PPE + exploration)



Source: CAPIQ

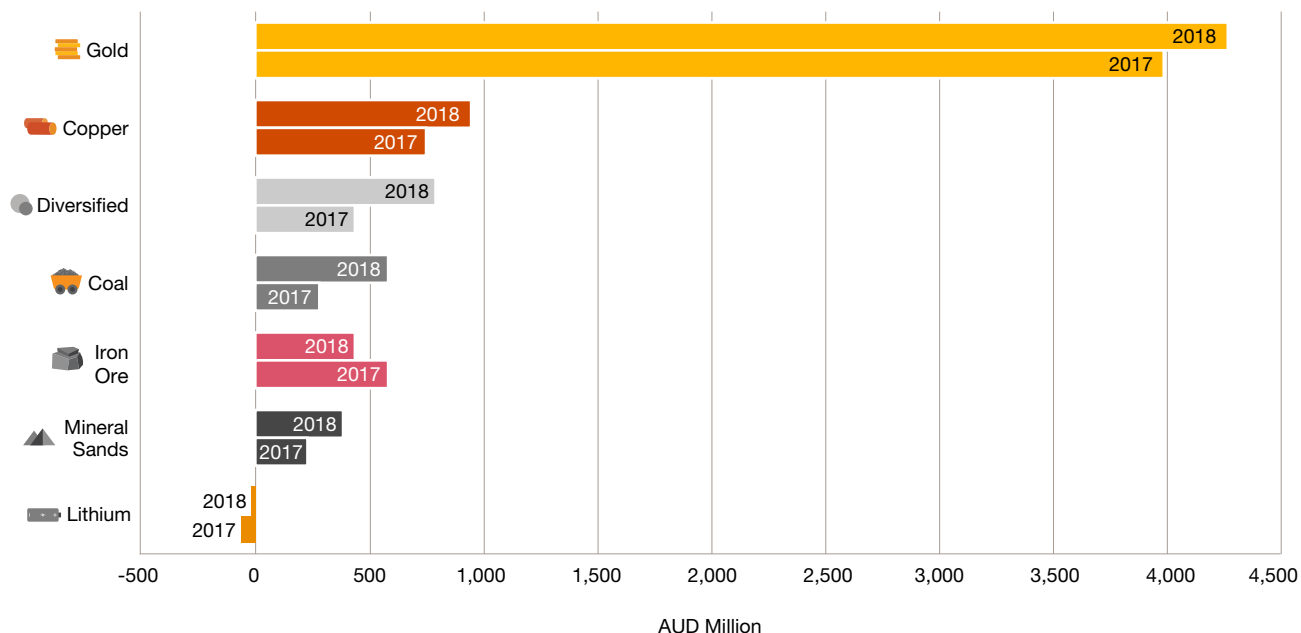
EBITDA

Consistent with 2017 we saw EBITDA increase in 2018, rising an impressive \$1,232 million (22%). The EBITDA margin of 31% continues the run of near record highs for this measure in the past two years. This is an impressive performance, especially considering two of the best performers and largest EBITDA contributors from last year's publication were Yancoal and Whitehaven.

While gold miners were the main contributors to total EBITDA, significant growth was achieved by the coal and diversified miners. Coal benefited from improved prices, which have increased significantly since January 2016 on the back of heightened demand for high-quality Australian coal within Asia.

31 companies in the group reported a positive EBITDA in the current year, marginally up from 30 in the prior year. Given the list has 35 producers, this clearly demonstrates 2018 was a positive year for earnings.

MT50 EBITDA by commodity



Source: CAPIQ

Balance sheet analysis

This year saw a 14% improvement in the net asset position of the group, a direct impact of healthier free cash flows from higher prices across our key commodities. Similar to 2017, there was a renewed focus in paying down more debt. 2018 also saw miners elect to improve their cash position while also reinvesting back into their businesses, with capital expenditure levels increasing.

Aggregated Balance Sheet (\$m)	2018	2017	\$ change	% change
Current assets				
Cash and cash equivalents	6,292	5,278	1,014	19%
Inventories	3,764	3,383	381	11%
Receivables	1,816	1,394	422	30%
Other current assets	1,223	765	458	60%
Total current assets	13,095	10,820	2,275	21%
Non-current assets				
Long-term investments	3,218	3,093	125	4%
Property, plant and equipment	25,890	24,523	1,367	6%
Accounts receivable	3	79	(76)	-96%
Loans receivable	42	85	(43)	-51%
Deferred tax assets	868	684	184	27%
Other intangibles	130	380	(250)	-66%
Goodwill	182	209	(27)	-13%
Other non-current assets	1,560	1,424	136	10%
Total non-current assets	31,893	30,477	1,416	5%
Total assets	44,988	41,297	3,691	9%
Current liabilities				
Accounts payable & accrued liabilities	3,147	2,720	427	16%
Interest-bearing liabilities (short-term borrowings)	691	1,325	(634)	-48%
Income tax payable, current	497	421	76	18%
Unearned revenue, current	32	396	(364)	-92%
Other current liabilities	824	433	391	90%
Total current liabilities	5,191	5,295	(104)	-2%
Non-current liabilities				
Long-term debt	5,513	5,700	(187)	-3%
Capital leases	176	154	22	14%
Unearned revenue, non-current	17	16	1	6%
Deferred tax liability, non-current	1,667	1,664	3	0%
Other non-current liabilities	3,955	3,549	406	11%
Total non-current liabilities	11,328	11,083	245	2%
Total liabilities	16,519	16,378	141	1%
Net assets	28,469	24,919	3,550	14%
Equity				
Share capital and premium	37,819	36,256	1,563	4%
Retained earnings (accumulated loss)	(8,612)	(10,466)	1,854	-18%
Other equity	(738)	(871)	133	-15%
Total equity	28,469	24,919	3,550	14%

Source: CAPIQ

The war chest continues to grow...

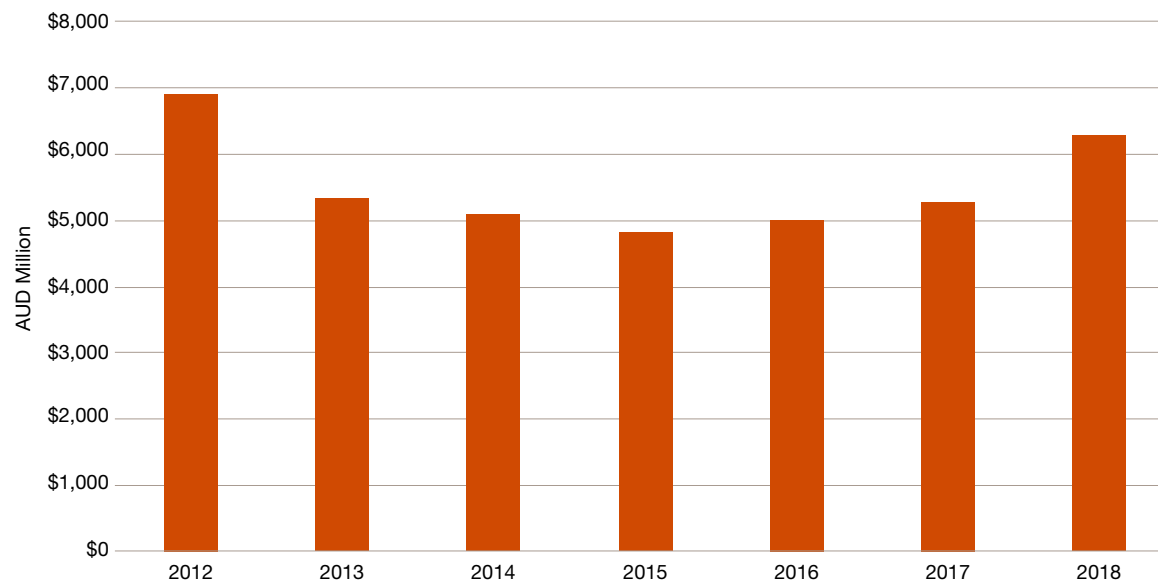
Cash balances have increased 19% across the group, with lithium, coal and diversified miners leading the way. Cash balances are now at levels not seen since 2012, indicating the collective balance sheet is continuing to go from strength to strength – a sign of the times for the industry as a whole.

A suite of options are available to the group, from strategic mergers and acquisitions, to retiring debt and delivering dividends. And so, the question remains: how should excess cash be used?

One thing is for certain – shareholders will grow impatient unless companies clearly articulate their plans and strategy for capital allocation.



MT50 Cash Balances



Source: CAPIQ

Commodity	2018	2017	%
Gold	2,287	2,145	7%
Copper	973	782	24%
Iron ore	772	932	-17%
Lithium	744	207	259%
Coal	351	237	48%
Diversified	422	228	85%
Other	737	747	-1%
Total	6,292	5,278	19%

Source: CAPIQ

Getting the house in order – gearing levels plummet

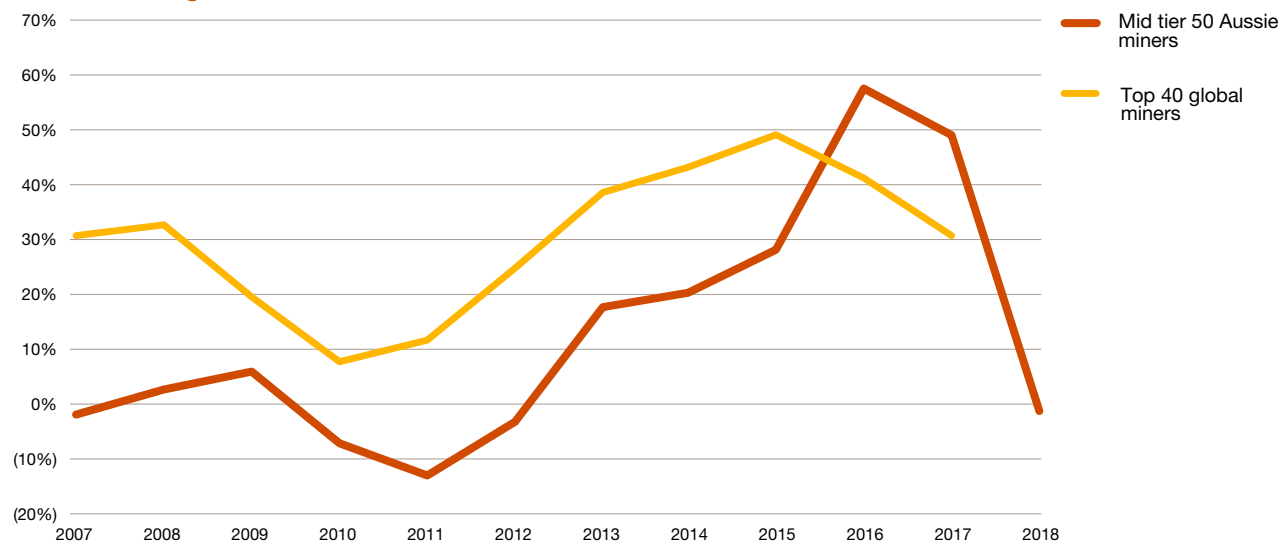
Total debt fell by 12%, with only a few miners opting to repay more than they did in 2017. This indicates gearing may have hit desired levels. In a change of pace from recent years, gold miners retired less debt in 2018 when compared to 2017 (total repaid \$1,303 million – down 39% from prior year), while repayments from iron ore miners grew (\$16 million – up 93% from prior year).

With interest rates expected to shift upwards in the near future, and increased caution from lenders due to uncertain economic times ahead, the MT50 heeded the warning on gearing levels. With cash rising and debt continuing to be paid down, gearing levels have dropped drastically.

Juniors leading the charge in maximising capital return

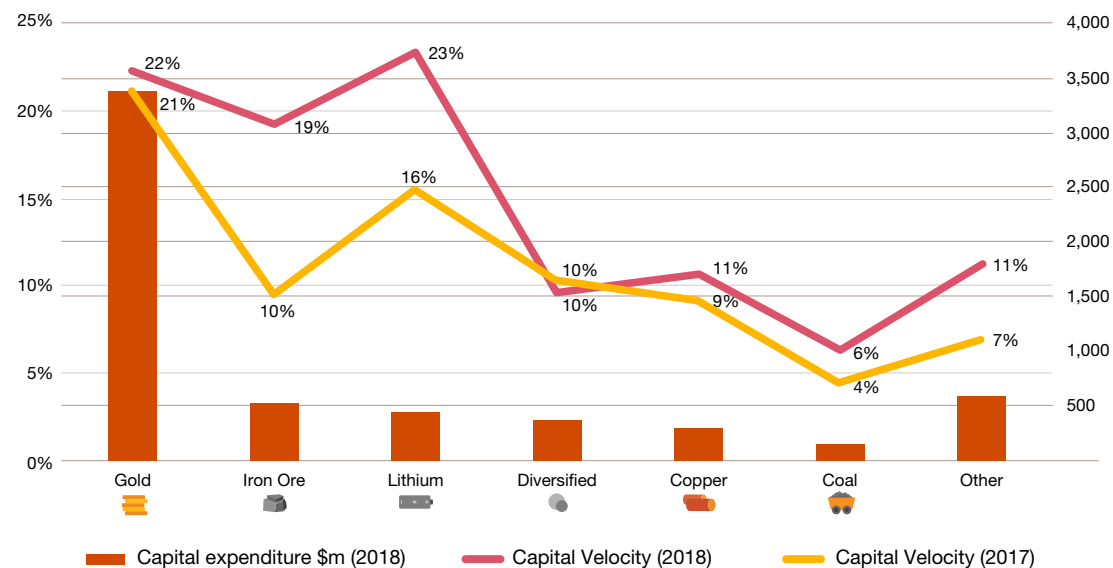
Capital velocity, a proxy for measuring the growth agenda of organisations in capital intensive industries, shows how hard capital assets are working to produce revenue as well as serving as a proxy measure of the growth agenda for capital intensive industries like mining. It's continued to improve in the MT50, with coal, diversified, and iron ore miners significantly lifting their investment in 2018. Lithium and graphite also occupy high-capital velocity statistics, demonstrating the growth in these sectors, although copper has surprisingly remained static despite improved market conditions.

Index: Gearing ratio



Source: CAPIQ

Capital velocity compared to capital expenditure by commodity



Source: CAPIQ

Debt remains the capital source of choice

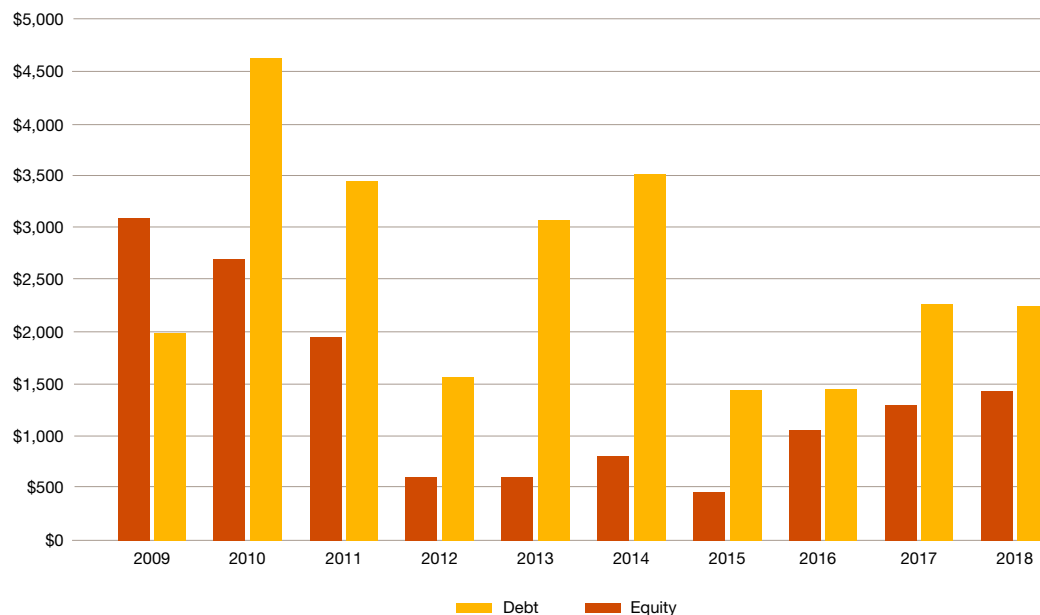
Access to capital to fuel growth ambitions remains a prominent focus for the group, and 2018 saw continued strong trends in both debt and equity raisings. Debt continued to be the capital source of choice – particularly with gold miners – with \$2,243 million of capital raised, down slightly from the \$2,262 million raised in the prior year. In 2018, \$1,525 million of equity was raised (up 14% from the prior year), buoyed by the positive sentiment. It was, however, equity that was favoured by the group’s growing number of diversified and lithium miners – a trend that’s continued from 2017.

For a mining company, a key determining factor in the decision to raise debt versus equity is the stage of a project’s mine life.

For projects in development stages, the split becomes more even, with 57% through debt and 43% through equity. For projects in pre-production or exploration stages, there’s a swing back towards equity, with 8% of capital being raised through debt and 92% through equity. This reflects the additional risk inherent at this stage, and also the willingness of investors to support new projects.

Although capital raising was mainly focused on advancing existing projects and maintaining working capital, there was a deals focus among some of the group. These include **Base Resources**, which used equity to raise \$100 million of capital for their acquisition of the Toliara Sands Project, and **Aurelia Metals**, which used a combination of debt and equity to raise capital for its acquisition of Peak Mines.

Debt v Equity MT50



Source: CAPIQ

Cash flow analysis

Aggregated (\$m)	2018	2017	\$ change	% change
Cash flows generated from operations				
Net income	2,003	1,142	861	75%
Change in accounts receivable	(413)	(289)	(124)	43%
Change in inventories	(484)	(371)	(113)	30%
Change in accounts payable	494	170	324	191%
Change in deferred taxes	108	(16)	124	-775%
Change in other net operating assets	(10)	(63)	53	-84%
Income taxes (paid)/refunded	(69)	(34)	(35)	103%
Other	4,665	4,592	73	2%
Cash generated from operations	6,294	5,131	1,163	23%
Cash flows related to investing activities				
Capital expenditure	(5,739)	(4,350)	(1,389)	32%
Proceeds from sale of property, plant and equipment	71	57	14	25%
Cash acquisitions	(117)	(383)	266	-69%
Divestitures	24	2	22	1100%
Purchases of investments and intangibles	(173)	(126)	(47)	37%
Other investing activities	1	(67)	68	-101%
Net investing cash flows	(5,933)	(4,867)	(1,066)	22%
Cash flows related to financing activities				
Debt issued	2,243	2,262	(19)	-1%
Debt repaid	(2,269)	(2,722)	453	-17%
Proceeds from share issues	1,525	1,335	190	14%
Stock repurchases	(112)	(42)	(70)	167%
Ordinary dividends paid	(639)	(482)	(157)	33%
Special dividends paid	-	(18)	18	-100%
Other financing activities	(95)	(355)	260	-73%
Net financing cash flows	653	(22)	675	-3068%
Net increase/(decrease) in cash	1,014	242	772	319%

Source: CAPIQ

Operating cash flows boosted again

Cash flows from operations continues to reflect strong growth, with a 23% increase providing greater flexibility for the MT50 to pursue different options with capital allocation.

Iluka had a standout year in this regard, reaping the benefits of higher prices with a staggering 222% increase in operating cash flows. Diversified companies also performed strongly, with a 180% increase in operating cash flows. **Independence Group** had the most significant increase, driven by its Nova operation in Western Australia, which achieved commercial production in July 2017. **Zimplats** also joined the list of high performers this year, recording an increase of \$191 million driven by higher metal prices, despite reduced production.

Gold producers continue to dominate the MT50, representing more than half (52%) of aggregated operating cash flows, however only **OceanaGold** from this cohort made it into the 'Top five increases in operating cash flows' followed by **New Hope Corporation**, both benefiting from increased production and price.

Capital expenditure – 'approach with caution'?

With the return of optimism in the industry, and continued improvement in operating cash flows, we expected to see increased investment focused on the future. The heavy investment in mine development suggests companies are following through, though it seems an element of conservatism is at play with a significant focus on existing operations.

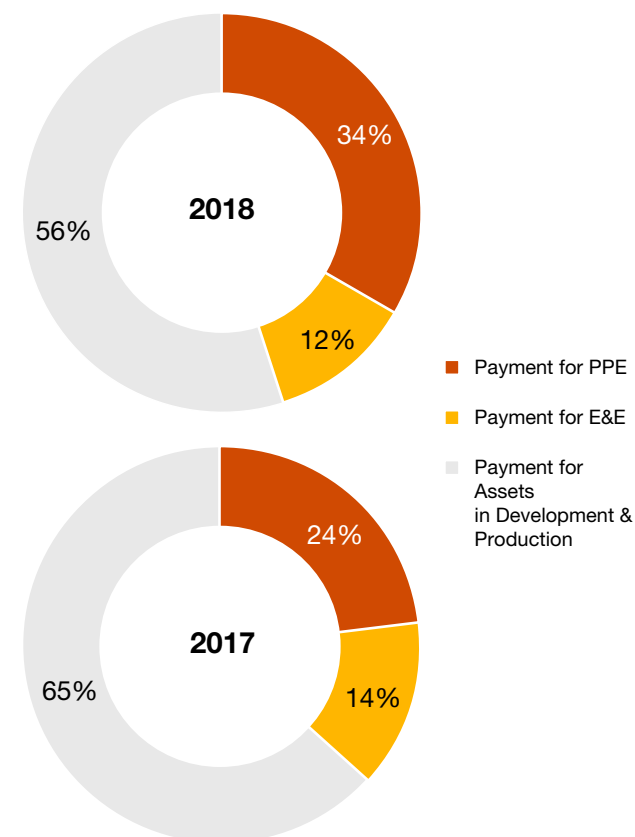
Top five increases in operating cash flows	Commodity	2018	2017	Change (\$m)
Iluka Resources Limited	▲ Mineral Sands	414	128	285
Independence Group NL	● Diversified	278	78	200
Zimplats Holdings Limited	■ Precious Metals	264	73	191
OceanaGold Corporation	📦 Gold	458	321	137
New Hope Corporation Limited	🚛 Coal	418	285	133

The biggest spender in 2018 was **AngloGold Ashanti**, with a substantial investment (\$1.1 billion) aimed at improving mine life and margins across existing operations. Similarly, **Alacer Gold** invested significantly, tipping \$440 million into an expansion project for its existing mine in Turkey.

Investment in property, plant and equipment (PP&E) across the MT50 also increased, by 11% to \$1.9 billion. This raises the question of whether companies are exercising caution and spending to sustain and manage current operations, rather than thinking of the bigger picture and unlocking the next level of growth through investing in the future.

Exploration continued to take a back seat, only representing 12% of total capital expenditure. Is the MT50 investing enough for future supply? Interestingly, it's the group's four diversified miners that are ramping up exploration activities, with an increased spend of 28%, while gold miners seem to be focused on investing in current operations, with an 8% decrease in capitalised exploration spending.

Type of capital expenditure



Source: PwC Analysis

An end to gold high grading?

Replacing reserves and extending mine life is still a key focus for gold miners. Collectively, over a two-year period to 2018, total resources and reserves have been maintained, while average grade has decreased by more than 20%. Are levels being replenished by low grades at higher mining costs? With exploration expenditures decreasing, a question remains on whether enough has been invested in finding tomorrow's new mines rather than harvesting what's in front of us.

More companies sharing returns

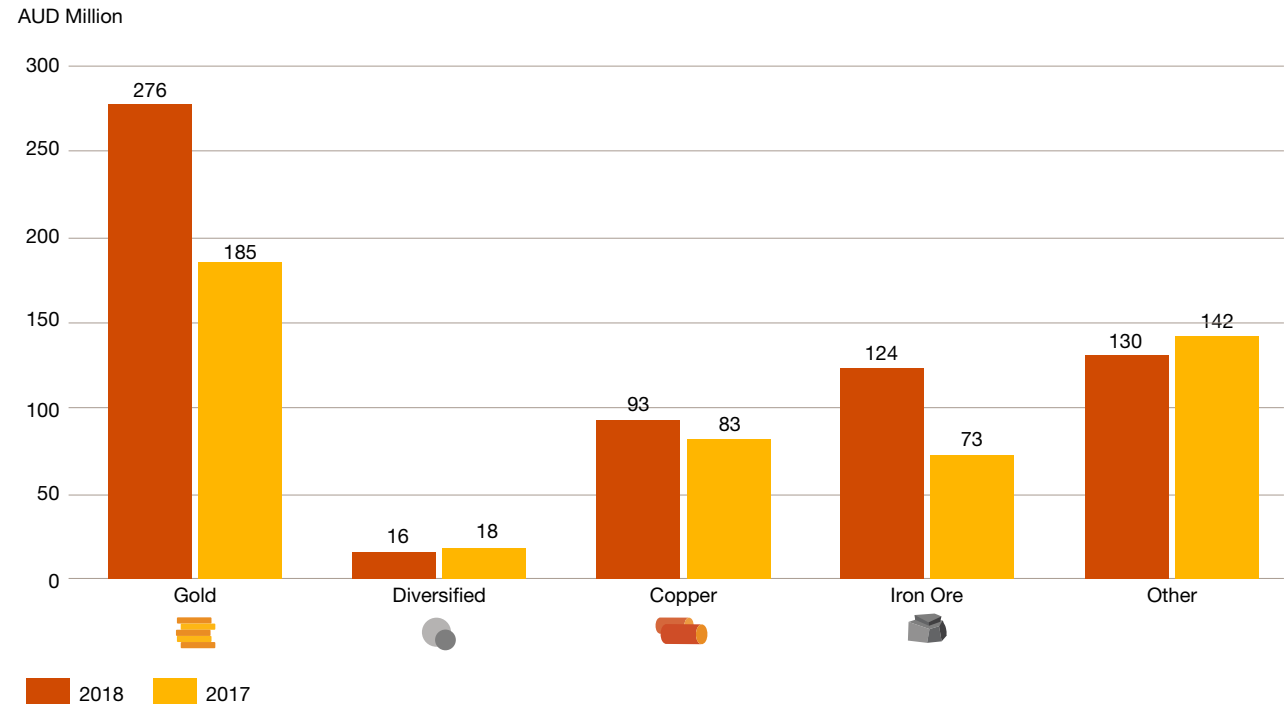
It's been a couple of good years for shareholders in the MT50, with a 33% increase in dividend payments, following a 41% increase last year. An additional five companies joined the fold of those prioritising shareholder returns - the total number of dividend-paying companies up to 16. Unsurprisingly, all dividend-paying companies were producers.

Iron ore companies increased dividend payments by 70% despite their relatively muted performance in 2018, while gold companies lifted dividend payments by almost 50%.

More than half of producing companies within the group are not paying dividends. **Aurelia Metals** was amongst this cohort and chose to use available funds for capital expenditure and the acquisition of Peak Mines.

Similarly **Alacer Gold** continues to invest funds into the construction of its Sulfide project.

Dividends



Source: PwC Analysis

A trend is emerging among the MT50; capital expenditure is focused on current operations rather than new projects.



Investment in new operations and mines is particularly challenging – but, without it, future supply challenges will be exacerbated.

Voluntary reporting and trends

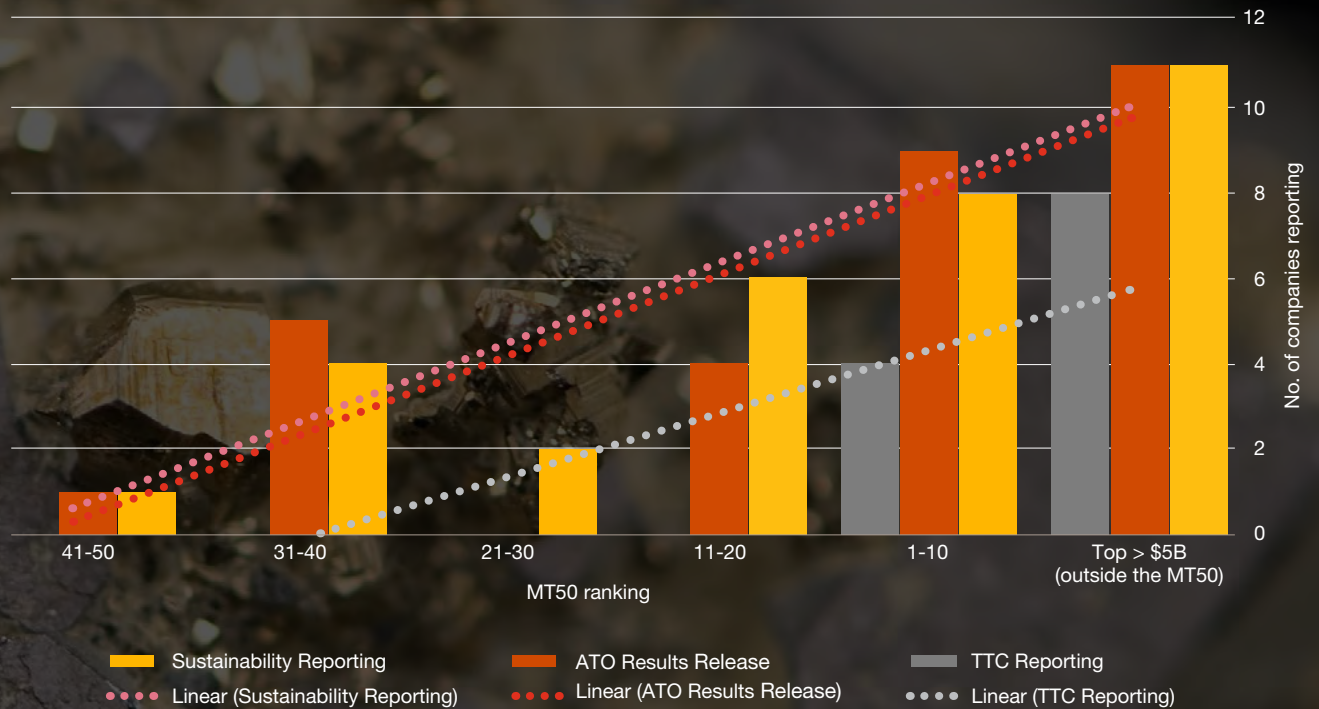
Increased market capitalisation demands voluntary reporting



No one industry is immune from concerns around trust. Corporate responsibility continues to rise to prominence and the pressure is mounting on the MT50 for voluntary reporting in its various forms.

There's a clear pattern that as companies get larger and climb higher up (and graduate from) the list, the need for them to report on myriad issues shifts from being a 'non-essential' to 'expected'.

Voluntary reporting across the MT50



Source: CAPIQ and PwC Analysis

Sustainability reporting

Although sustainability reporting is not a new phenomenon, the meaning of sustainability varies across companies, with many aspects considered beyond environmental. Of the MT50, 21 companies currently prepare reports, with eight of the top 10 members reporting. This is in stark contrast to voluntary reporting under the Australian Taxation Office's Tax Transparency Code (**TTC**), with only four companies preparing reports.

The push for tax transparency

Australia is among a number of countries pushing global tax transparency initiatives.

The MT50 companies face increased pressure to provide "justified trust" to regulators- and to the public at large - they're paying their 'fair share'.

In December 2017, the ATO released its third corporate tax transparency report which revealed total accounting income, taxable income and income tax payable of companies that have Australian turnover of \$100m or more based on 2016 tax return information. 19 companies in the MT50 had their 2016 information published and the raw numbers do little to explain in any informed way whether the MT50 are in fact paying their 'fair share', if in fact such an objective concept of fairness is universally agreed. Despite the group operating net accounting losses from 2014 to 2016, tax was payable by the MT50 in each year, highlighting that the data mandatorily disclosed to the public does little to bridge the gap between accounting income and tax payable.

What has become evident is that a company needs to have a clear narrative to communicate the inputs that result in the output headline data.

The capital intensive nature of mining often results in vast and legitimate discrepancies between the three data points published.

With the ATO's 2017 data release expected shortly, the time delay between tax year end and public release is also of significance and can potentially create noise when historical attributes are compared to current performance.

For members of the MT50 with Australian turnover above \$250 million, broadly defined as the 'Top 1000' largest taxpayers in Australia, additional disclosure and compliance requirements now apply. The Reportable Tax Position (**RTP**) schedule must be lodged with the company's income tax return each year, where any material and contestable tax positions must be disclosed. The Top 1000 Streamlined Assurance Review (**SAR**) is also underway, whereby taxpayers face a multi-year review of their income tax affairs.

Requirements further increase for the five members of the group that are Significant Global Entities (**SGEs**) based on global turnover in excess of A\$1b. SGEs are required to prepare general purpose financial statements, subject to dramatically increased penalties for non-compliance or late lodgements, increased transfer pricing reporting and specifically targeted anti-avoidance rules.

This mounting pressure on the MT50 is expected to continue, with Australia an official supporter of the Extractive Industry Transparency Initiative (**EITI**) since 2006 with plans for domestic implementation.

If there's a change of government, the Labor Party has publicly endorsed further tax transparency reform, with measures including public disclosure of: transfer pricing reporting lodged by SGEs; company dealings in any known or suspected tax havens; and the number and size of tax settlements above a value of \$50 million, estimated at approximately 8 settlements per year.

The future role of tax transparency



The tax transparency tide is only set to rise, as the tensions between public, government and corporates flare and trust is called into question.

Tax has become an integral component to a company's social license to operate, with proactive stakeholder engagement a must.

Comparable to the beginning of environmental reporting decades ago, the MT50 must adapt to new community standards.

Explanatory notes and key contributors

We have analysed the largest 50 mining companies listed on the ASX with a market capitalisation of less than \$5 billion at 30 June 2018. The results aggregated in this report have been sourced from publicly available information, primarily annual reports and financial reports available to shareholders. Companies have different year-ends and report under different accounting policies. 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 2018 covers periods between 1 January 2017 and 30 June 2018, with each company's results included for the 12-month financial reporting period that falls into this timeframe.

All figures in this publication are reported in Australian dollars, except where specifically stated. The results of companies that report in currencies other than the Australian dollar have been translated at the average Australian dollar exchange rate for the financial year, with balance sheet items translated at the closing Australian dollar exchange rate. Some diversified companies undertake part of their activities outside of the mining industry. Unless specifically stated, no adjustments have been made to exclude such non-mining activities from the aggregated financial information.

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