Six key messages for the mining industry today
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Notes

- Our Review uses a mixture of American and English spelling, depending on the nationality of the author concerned.
- We have used capital letters to describe various classes of insurance products and markets, but otherwise we have used lower case to describe various parts of the mining industry itself.
Welcome to the 2018 edition of our Mining Risk Review. The mining industry has undergone mixed fortunes during the 12 months since our last edition, and while there had been some encouraging signs that commodity prices were on the rise in the early part of the year, things certainly look a bit bleaker as we approach the final quarter of 2018. Falls in key commodity prices such as copper have recently disappointed investors; the US dollar has been strengthening significantly in recent months; concerns are mounting in respect of inflation and higher raw material costs; and the industry continues to face hostility from environmentalists and different communities around the world. So while capital expenditure in the industry is on the rise, there’s no doubt that managing mining industry risk remains as challenging as ever.

So what is our message to the industry, as it battles against the impact of public opinion, natural catastrophes and the unknowns of new technology and rising geopolitical tensions? Within this Review, as well as covering a range of different topics which we think will be of interest, we have sought to build most of our content around six key messages that we think are critical in ensuring that the industry remains on track. These are:

1. **Maintaining a 20th century view of managing mining risk is no longer an option.** Ioannis Michos from our Strategic Risk Consulting team outlines a modern way in which mining companies can successfully integrate Enterprise Risk Management into the risk culture of a mining company – at a time when regulatory frameworks around the world are beginning to insist that companies demonstrate such processes are adopted within their own organisations.

2. **Greater attention needs to be paid by the industry to managing project delivery.** Our specialist mining engineer Don Hunter highlights six pitfalls that mining companies can often encounter which result in project overruns and delays – and how to avoid them, thereby making a significant contribution to a mining company’s bottom line.

3. **Investors in certain regions need to do their homework to avoid a regulatory headache.** Nowhere is this more apparent than in Latin America, an exciting region for mining investment but one where compliance with government legislation and obtaining and keeping a Social Licence to Operate often remains challenging. Our Latin America mining leader Tom Holliday explains more within the Review.

“While there had some encouraging signs that commodity prices were on the rise at the early part of the year, things certainly look a bit bleaker as we approach the final quarter of 2018.”
4. **Geopolitical tensions are building - posing a significant threat to the industry.** As this Review went to press, copper miners in Chile were out on strike; the threat of an all-out global trade war was very much in prospect, threatening the supply chains of miners throughout the world; while the eventual impact of the Trump administration on the US coal industry continued to remain unclear. Fred Smith IV, our US mining leader, takes another look at the US coal industry in light of recent developments.

5. **Global insurance market capacity for thermal coal risks may be under threat.** There seems little doubt that the European-led withdrawal from the thermal coal industry is not some flash in the pan. Finding alternative sources of risk transfer capacity is likely to become increasingly challenging in the months and years ahead – especially if North American insurers begin to follow the European lead.

6. **Be prepared for a possible change in insurance market dynamics.** Recent natural catastrophe losses, coupled with moves from Lloyd’s of London to eliminate unprofitable portfolios, may mean that London-based Direct and Fac (D&F) market capacity may not be available to the same degree than in the past. While the last few months have seen only a modest correction in the rating levels for most mining companies, should the D&F market become more restricted miners may have to look to alternative strategic risk partners in the market if they want to avoid any future volatility in mining insurance market pricing.

Meanwhile we can only echo and applaud a plea within our Review from Brett Forrest of South 32 for greater transparency between buyers, brokers and insurers. Everything in our experience suggests that everyone in the process gains when insurers are brought into the fold as strategic risk partners rather than being regarded as simply transactional providers of insurance.

We hope you enjoy this year’s Review and as ever we would welcome your feedback on any issue arising from it.

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Part one: managing mining risk
Enterprise Risk Management: bringing it to life

Enterprise Risk Management is a term that has been around now for decades. But how many mining companies really understand it? What are the benefits? And why is now the time to take a fresh look at what it can do for the mining sector? Let's start from the top...

1 What is ERM?

Enterprise Risk Management (ERM) has been defined as:

“The culture, capabilities, and practices, integrated with strategy-setting and its execution, that organisations rely on to manage risk in creating, preserving, and realising value”.

In plain English...

Risk may be a cause of uncertainty, a driver of strategic decisions or it may simply be embedded in the day to day business of organisations. ERM should be a systematic process to identify, assess, prioritise and manage the potential impact of all types of current and emerging risks (both on an individual and an aggregate level) on all processes, activities, stakeholders, products and services, taking into account organisations’ implicit or explicit risk appetites and various internal/external stakeholders.

Sounds simple and straightforward? Not really...

2 Why should mining companies bother with ERM?

Let's start with the basics by considering the lifecycle that mining companies have to exploit to achieve their goals. It is important to do so, because the successful management of the lifecycle as a whole is detrimental to their long term viability.

To be able to manage the above lifecycle successfully, companies are assessing the threats and the opportunities that are linked to the lifecycle, and its phases, and are actively trying to achieve an optimal risk and reward balance which is unique to their structure and their attitude to risk, by simultaneously taking into account external and internal drivers.

How easy is it to do the above and why is the amount of time and money that organisations spend on ERM significant?

The drivers that mining companies consider, or should consider, when they are formulating key strategic, financial, and operational decisions are numerous. Some of them are external in nature and some of them internal. Some of them cover the lifecycle of a mine as a whole and some of them target specific phases, taking into account any potential dependencies. But which ones really matter and are at the forefront of the risk professionals and top CEOs’ agendas? You raised them with us, we listened and below we provide the industry’s aggregated view.

Fig 1 – a typical lifecycle of a mine

**Key external drivers (applicable to the whole lifecycle)**

Increasing corporate regulation requires boards to demonstrate they have carried out a robust assessment of the principal risks their companies are facing. In the UK, boards of listed companies are now required to:

- monitor the company’s ERM framework – including its risk appetites
- at least annually, carry out an effectiveness review of the holistic ERM framework
- at least annually, carry out an effectiveness review of the controls that are linked to the principal risks
- report the outcomes of these reviews in their Annual Report

This is now regarded as good market practice across the globe.

- Rating agencies assess companies’ ERM frameworks thoroughly, which significantly impact the overall rating process and the development of capital requirements.
- Increased activism from the shareholders’ demands for greater transparency into board’s decision making process, including the assessment and financing of business risks.

**Key internal drivers (applicable either to the whole lifecycle or to targeted phases)**

- Reduced financial volatility, by managing risk at an enterprise level and by strengthening the internal control framework.
- Higher business resilience, by putting together rigorous and well tested contingency plans that cover all the plausible risk classes that organisations are facing.
- Lower operational losses, by implementing a robust and proactive monitoring process throughout the organisation.
- A risk adjusted decision making process, which enables organisations make more informative and risk balanced decisions.
- Increased visibility of the ERM function to the board of directors, by demonstrating the value that the ERM function adds to the organisation as a whole.
- Better allocation of risk management resources, by targeting them on areas of risk over or under exposure.

3  All right, but what does good ERM look like?

Over the past year we have seen several mining companies, of different sizes and in different geographies, trying to establish and embed robust risk management frameworks with clearly articulated organisational structures and well defined and documented responsibilities across the enterprise. This is necessary, but challenging too, because it enables organisations to:

- satisfy their external and internal key drivers
- achieve segregation of duties
- comply with general accepted risk management standards such as the updated COSO II and the new ISO 31000 which are well regarded by their stakeholders.

In Figure 2 overleaf we provide an example of a well-articulated ERM framework, and its elements, that mining companies frequently use.

“Over the past year we have seen several mining companies, of different sizes and in different geographies, trying to establish and embed robust risk management frameworks.”
As mentioned earlier, establishing a resilient ERM framework can be a challenging process and it requires a clear action plan with specific improvement points and defined timelines. To do that, an assessment of the current status of each ERM element against the desired “fit for purpose” one and the global risk management standards is required. A widely used framework from mining companies that achieves the above objectives is demonstrated in Figure 3 overleaf.

**Fig 2 – a robust ERM framework**

1. **Stakeholder management**: Stakeholders (and their influence in the organisation) are identified, prioritised and documented.
2. **Risk culture**: The organisation's ethics and expected behaviours are defined in the context of risk (i.e. tone from the top).
3. **Risk appetite**: Risk is explicitly considered in the strategy and it covers, at least 2 dimensions; risk to strategy and risk of the strategy.
4. **Group strategy**: Identification, quantification and aggregation of the principal risks (both current and emerging) faced by the firm on an individual and enterprise level.
5. **Risk governance and policies**: Embedded and effective risk culture by having the right people in the right functions and incentivising them appropriately.
6. **Risk identification and quantification**: Efficient reporting enabling the timely monitoring of the key risks, through Early Warning Indicators, and the effectiveness of the ERM Framework.
7. **Risk articulation, treatment and improvement**: A well articulated corporate governance structure, that follows the 3 Lines of Defence, underpinned by a comprehensive risk management policy.
8. **People and risk based reward**: The vulnerabilities, triggers and consequences of the risk drivers are defined and action plans with clear ownership are documented and monitored.
9. **Monitoring**: Identification, quantification and aggregation of the principal risks (both current and emerging) faced by the firm on an individual and enterprise level.
10. **Infrastructure and technology**: Efficient reporting enabling the timely monitoring of the key risks, through Early Warning Indicators, and the effectiveness of the ERM Framework.

**Got it, but how do ERM and strategy link together?**

This is one of the key questions that we almost always get asked when we are interacting with C-suites from different industries. Although the industries are different, the answer is always the same: risk appetite and tolerances.

**Risk appetite**

An organisation's risk appetite describes the amount of risk that it is willing to seek or accept in the pursuit of its long term objectives. It influences strategic parameters, such as the types of activities a business engages in and the time horizon for investment activities, and is a contributing factor to the overall business strategy.

“Establishing a resilient ERM framework can be a challenging process and it requires a clear action plan with specific improvement points and defined timelines.”
Mining companies around the globe are trying to set appropriate risk appetites and tolerances that reflect their strategy, their business model and the environment in which they operate. In doing so, they are establishing financial and non-financial limits against which their exposure to the major categories of risk can be controlled, measured, communicated and reported. The major categories of risk typically include Strategic, Financial, Operational and Regulatory, but these categories should be tailored to fit the needs of different organisations.

**Tolerances and limits**

Cascading a high level risk appetite to a more granular level and allocating it to the different business units and risk types is a challenging process - the effort and time commitment that is required to complete this should not be underestimated. The outcome of this process, as shown in Figure 4 below, enables organisations to link strategy directly to risk, improve their tactical and operational risk adjusted decision making process and assess which business decisions could breach their appetite and/or tolerance. If a business decision breaches an organisation’s appetite, then either the business decision should be amended or the risk appetite should be reassessed and revised accordingly.

“Mining companies around the globe are trying to set appropriate risk appetites and tolerances that reflect their strategy, their business model and the environment in which they operate.”
Conclusion

Changes in regulations, business environment, political agendas and technology create new emerging risks and opportunities, driving organisations to adapt. The mining sector will of course continue to grow and flourish, with companies winning and losing along the way. The role of ERM is to enable companies in the sector to become knowledgeable risk takers, maximise the value that they create for their various stakeholders and empower key decision makers to build bolder business visions and resilient organisations.

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"Changes in regulations, business environment, political agendas and technology create new emerging risks and opportunities, driving organisations to adapt.”
Mining projects: six pitfalls that threaten delivery

Introduction – why the mining industry fails to deliver

Although it’s equally true of other industries, it seems that the mining industry doesn’t have a great record of on-schedule and on-budget project delivery. Moreover, it also seems that it’s not very good at learning from experience either, and a cynical observer might be excused for thinking that the same old mistakes are being repeated time and again.

What are the factors that contribute to sub-optimal project delivery? These tend to include:

- Poorly understood geological and geotechnical aspects of a deposit, leading to inappropriate mine and process flowsheet designs
- Inadequate metallurgical test work
- Funding availability during the investigation and engineering phases
- Overly optimistic development schedules
- Human factors, including over-optimistic expectations that are spurred on by the need to promote project attractiveness to prospective investors
- Insufficient preparation for construction and operations during the Feasibility Study (FS) phase
- Insufficient engagement with local communities, stakeholders, regulators, government agencies and NGOs

This analysis of six major project pitfalls associated with the mining industry is based largely on the author’s first-hand experience of mines and project sites around the world, as well as numerous conversations over the years in head offices, project and engineering offices and coffee shops. Unsuspecting contributors include CEOs, project managers, mine operators, project reviewers and, in a few cases, the consulting engineers that were called in to get certain projects back on track. For obvious reasons, the examples and descriptions given are anonymous and generic.

For the purposes of this analysis, a mine development project is best described as the progression, by a series of interrelated activities, from initial discovery through studies, engineering and permitting to the eventual construction and commissioning of a mine and mineral processing facility designed to extract value from a mineral deposit.

Pitfall number one: inadequate geological and geotechnical understanding

The viability of any mining project is normally predicated on the assumption that value can be profitably extracted from the mineral deposit in question. However, with the possible exception of relatively continuous and consistent mineral deposits such as coal, evaporites (e.g. salt, potash) and the Witwatersrand gold reefs, most deposits are surrounded by complex geology with equally complex mineralogy, comprising a mixture of both valuable and deleterious minerals.
The danger of scaling up

In most cases, understanding the essential geological and geotechnical aspects of a deposit is based on geological interpretations, combined with sophisticated modelling and statistical methods which extend information contained in small diameter drill core to the surrounding rock mass. In simplistic terms, this involves scaling up information contained in a few kilograms of core sample to tens or even hundreds of thousands of tonnes of mineral resource.

Skimping on research costs may be a false economy

Because the mineral resource estimate provides the starting point for mine design, the mineral processing flowsheet and, ultimately, project economics, it’s critically important that the geological resource is well understood. An accurate definition of mineral resources and ore reserves generally requires significant expenditure on drilling during the early stages of project development, when capital is most difficult to come by. Failure to invest adequately at this stage may ultimately result in a project that fails to deliver the financial performance that the board of Directors was expecting.

Because of past failures, internationally recognised and widely adopted standards for reporting mineral resources and ore reserves such as the JORC code and Canadian National Instrument (NI) 43-101 are intended to reduce both geological and investment risk and improve the transparency of how a project’s economics are determined.

Pitfall number two - inadequate project funding

Funding during early project development stages is often limited and may only be made available in finite tranches; this is particularly (but not exclusively) the case for exploration companies and small to mid-tier miners. This sometimes forces project teams to make assumptions which can only be tested and verified during later project stages. Consequently an element of risk is introduced, which may be exacerbated by the demands of optimistic completion schedules which may themselves have been made to attract investment funding.

Commodity price cycle susceptibility limits access to capital

The mining industry has always been susceptible to the effects of commodity price cycles which, among other factors, drive the availability of venture capital. Commodity prices also often drive project schedules, as developers rush to catch the next commodity price upswing. All companies, particularly exploration companies and small to mid-tier miners, are susceptible to variations in commodity prices because of their often limited access to capital. With project gestation periods that may extend over several years - even decades - getting the timing right so a new project comes on stream as the price cycle peaks is sometimes critical to a company’s survival.

"Because the mineral resource estimate provides the starting point for mine design, the mineral processing flowsheet and, ultimately, project economics, it’s critically important that the geological resource is well understood."
Pitfall number three - Feasibility Studies that don't deliver

A major milestone in any development project is completion of a definitive Feasibility Study (FS) report which should be sufficiently comprehensive for a board to confidently make a major investment decision. However, it is not uncommon after spending millions on a FS for a board to require the study to be “optimised” – this generally means that capital and operating cost estimates are too high.

Optimised Feasibility Studies - questions for the board

The need to “optimise” a study’s results should raise questions about the quality of the FS:

- Have all options been adequately assessed?
- Was the board sufficiently well briefed during the course of the study so that results came as no surprise?
- Were peer reviews effective?

Other Feasibility Study failings

There are many other failings that may occur during the FS stage and result in sub-optimal project delivery:

- Insufficient time allowed in the FS schedule for an independent cost estimate review and benchmarking (reality checking) of cost and productivity assumptions
- Insufficient metallurgical and geotechnical investigation and test work
- Insufficient time and cost contingency allowances in the capital estimate

- Funding limitations that restrict FS scope and timescale
- Over-optimistic and unrealistic promises made to investors in the early stages of the project
- Failure to engage with local communities, regulators, governments and NGOs with the result that project development is obstructed – or even, in the worst case, prevented
- Under-estimation of the time required to secure environmental permits, which is often linked to the extent and effectiveness of engagement with local communities and NGOs

The need for pre-FS geopolitical homework

Before embarking on a FS, the project team should ideally have a preliminary understanding of the applicable country and sovereign risk, the security and socio-political environment in which the project is to be developed and the stability of tax and royalty regimes. Any one of these may become a show stopper that would be best identified before the commitment of major funds and resources to the FS. Assuming no obstructions are identified prior to the FS - and because boards don't like surprises - the FS phase should be used to carefully assess these latent risks in more detail.

Incidentally, uncertainty around tax and royalties is not a phenomenon unique to less developed economies; some years ago mining investment was significantly curtailed in Western Australia and Queensland when changes were threatened to long standing royalties and mining tax laws, with the result that investor confidence was damaged.
Pitfall number four - poor project execution planning

FS reports are sometimes more focussed on resolving the technical means by which value will be extracted from an orebody, leaving to the next project stage the aspects of how the construction phase - and indeed the transition from the construction to the operation phase - will be managed. Consequently, an essential part of any FS report should be a Project Execution Plan (PEP) which provides the construction and transition management framework. An incomplete or inadequate PEP will result in a scramble during the pre-construction phase to put processes and systems in place which should have been budgeted during the FS. An inadequate PEP may result in frustration, delays, expensive mistakes - and even litigation.

Elements of a professional PEP

In addition to providing a management framework, a good PEP should address, among others, such issues as:

- Owners’ contracting and procurement policies and strategies
- Insurance and risk transfer strategies
- Recruitment policies
- Owners’ project management and cost control systems
- Owners’ organisation structure for both construction and operations

Pitfall number five – the lack of an independent FS review

An independent third party review of a FS report is not always considered necessary if the project management is confident in the quality of the work done by the project team and its consultants. Moreover, independent reviews are expensive and require considerable time to complete towards the end of a study when the completion budget and schedule may already be under pressure.

However, failure to carry out an independent third party review may lead to errors, inappropriate assumptions and even potentially fatal design flaws going undetected. To summarise its purpose, a FS report provides the blueprint for how a future mine and plant will be built and operated. It is also a detailed risk assessment of the proposed investment and is the document on which a board will rely when making an investment decision. The report’s integrity and thoroughness are therefore essential.

Pitfall number six – a poor approach to managing the construction phase

There are many potential challenges that may occur during the construction and commissioning stages of a project.

Scope creep

Post-FS changes to basic engineering scope, construction scope and scope “creep” to correct errors or account for conditions not identified during the FS will result in rework, cost overruns and completion delays - hence the importance of diligent peer and independent project reviews.

Inadequate systems

In terms of project management, it may be costly to discover as construction gets underway that management information, cost and document control systems that were adequate for a company’s pre-construction activities are inadequate for construction and the transition to full production.

Unbalanced and unfair contracts

The owner’s contracting strategy, particularly with regard to construction and service contracts, should ensure that they provide a reasonably equitable share of risk and reward. Where a contract excessively favours one side, the inevitable consequence will be development of an adversarial relationship from which no one but lawyers will derive any benefit. It is also important that contracts are awarded after due consideration of the tenderers’ capacity and capability to do the work required. Cheapest is not necessarily best and there are many examples where selection of the cheapest bidder, without due consideration of its capabilities and robustness of its balance sheet, have led to completion delays and expensive litigation.

Ignoring owner responsibilities

The use of turn-key contracts or the appointment of a reputable Engineering, Procurement and Construction Management (EPCM) contractor does not remove the owner’s responsibility to oversee contractors’ activities and establish proper quality control arrangements. Contractors also make mistakes and even reputable contractors will sometimes cut corners and seek ways to maximize their profit within the constraints of a contract.

“Failure to carry out an independent third party review may lead to errors, inappropriate assumptions and even potentially fatal design flaws going undetected.”
Lack of community engagement

Continued engagement with local communities, government, regulators and NGOs is particularly important during construction, as the true scale of the future mine’s impact on its environment begins to become apparent. Project detractors, be they unions, NGOs or local communities, also understand that the impact of the disruption they can cause increases as construction nears completion, when investors financial exposure is at its maximum.

Conclusion – miners’ project management skills need to improve

Mining investment is inherently risky; historically, the mining industry has provided investors with occasionally spectacular but all too frequently below average returns. The situation is exacerbated by late, over-budget project deliveries which effectively destroy both project value and investors’ trust.

The use of increasingly sophisticated project management software and systems is no doubt contributing to better project delivery. However, project outcomes are still dependent on the quality and skill of experienced project managers - of whom there appears to be a shortage. So the mining industry generally would be well served by focussing on improving project management skills, with the objective of reducing the risk of late and over budget project delivery. This would, in due course, improve investor confidence and encourage new investment.

Don Hunter is a member of the Willis Towers Watson Engineering Risk Management team specifically responsible in the Latin American region, for conducting risk control surveys of clients’ mines and production facilities.
Mining Investment in Latin America: the implications

Introduction - what does the future hold?

Elon Musk has a very clear picture of what he thinks the future holds, whether it be a citadel on Mars, a half-hour flight from New York to Tokyo, or public transport via the Hyperloop. But when he arrived in Chile in late December 2017, rumours quickly began circulating that he was there to strike a new Lithium-supply deal for Tesla. On the back of an already-huge investment, he still faces well-publicized challenges in getting his Model 3 into mass production. However, regarding broader, more general mining investment, what are the challenges faced by miners in Latin America and what does the future hold?

One can pull up a plethora of news articles from almost any year in recent history and the headlines will generally follow the trend that Latin America ‘is the primary destination for mining investment’, or that it ‘continues to grow as a destination for mining investment’ and that even in a downturn ‘the region remains a top attraction for investment dollars’.

This in a region which is widely reputed to produce:

- half the world’s silver
- almost half the world’s copper
- roughly a quarter of the world’s molybdenum
- a similar amount of the world’s zinc
- important contributions to the global gold and lithium market

One reason for the positivity is that still only a small percentage of its cumulative mineral reserve is being exploited. However, whilst both opportunity and challenges exist across the region, for the sake of column inches this article will focus on Peru, Chile and Argentina.

Fig 1 – Fraser Institute regional mean investment attractiveness scores, 2016 and 2017

Source: Fraser Institute Annual Survey of Mining Companies 2017
The downside

Latin America and Caribbean ranked low by Fraser Institute and Transparency International

The Fraser Institute’s Institute Annual Survey of Mining Companies is an attempt ‘to assess how mineral endowments and public policy factors such as taxation and regulatory uncertainty affect exploration investment’. As shown in Figure 1 above, in the 2017 edition Latin America and the Caribbean ranked lowest in the ‘regional’ category, below Africa, Asia, Oceania, Europe, United States, Australia and Canada in ascending order.

Fig 2 – Transparency International corruption perceptions index 2017 - selected countries

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Source: Transparency International

Furthermore, as shown in Figure 2 to the left, Transparency International uses their Corruption Perceptions Index to ‘rank 180 countries and territories by their perceived levels of public sector corruption’. Most of those in Latin America fall into the bottom (bad) half and, although Argentina just scrapes through into the top half, only Chile sits comfortably at number 26. So it’s not as if Latin America is perceived as the greatest or most trustworthy business environment.

Social challenges remain

While the region enjoys a period of relative political stability, mining companies still have major challenges gaining social approval. Disruption can come mainly from local communities, but such is the resentment against mining in some regions, some miners have found that they’re not just seeking interaction with the local communities, but seeking peace with groups that have travelled purely to take a stance against mining activity and who have no interest locally.
The Upside

**Latin America continues to attract the bulk of global exploration efforts**

So why should the region demand so much attention? As Figure 3 left highlights, Latin America's geological wealth and relative political stability continue to attract the bulk of global exploration efforts, with the region's aggregate budget increasing 20% year-over-year, to almost $2.4billion in 2017.

Moreover, outside of the social landscape, all three of the focus countries for this article have mining-friendly governments:

- In Chile, new President Pinera's proposals are seen as pro-mining in a country where copper is king. As Reuters reported, he has pledged support and stable funding for Chile's state-run miner Codelco, and has promised to slash red tape which had bogged down projects under the previous regime.
- In Peru, their new President Vizcarra said recently that he was in favour of promoting mining development as long as it is done in an environmentally responsible way.
- Argentine President Macri has also introduced pro-business policies.

**Source:** S&P Global Market Intelligence
The potential in Argentina

The hangover from the previous government

Despite this, international mining companies are still reluctant to invest in Argentina amid a lack of regulatory clarity. With the uncertainty and fiscally-unfavourable environment for miners left over from the previous administration, it may take some time for investors and miners to regain confidence in the security and potential for long-term investment.

8 times less investment than Chile to date

But once it does, you’d have to imagine that the potential is huge. Despite sharing a good chunk of the Andes with Chile, the relatively modest investment in Argentina actually lies in stark contrast to Chile’s. According to the Argentinian Ministry of Energy and Mines, from 2007-2015, the period of Cristina Fernandez’s rule, just US$10.5 billion was invested in Argentine mining, compared to US$80.5 billion in Chile and US$52 billion in Peru across the same period¹. Mining companies are planning to invest about US$65 billion in Chile over the next 10 years², and in just the next four years, mining investment in Peru is expected to reach US$20.8 billion, according to the Peruvian Ministry of Energy and Mines³.

So when you see that, according to the Argentina Chamber of Mining Companies, just 15% of the country’s mineral deposits have been exploited⁴, you get a sense of why Macri has repealed the non-mining-friendly legislation and why miners and investors are having a close look.

The lithium opportunity

Sitting in the famed ‘lithium triangle’, Argentina is home to around 65% of global reserves of lithium⁵ which, together with Cobalt, make up about half a battery’s cathode. It is presumed that as cathode technology evolves, Nickel and Cobalt will be largely interchangeable, but lithium should remain integral to battery production for a long while to come. There is obvious use of rechargeable batteries in hand-held devices but the interest, and the bulk of forecast use, is in electric cars and in ‘big batteries’, the storage facilities largely used to support renewable and sometimes intermittent power sources.

European demand looks to be strong

Is this just the electric car market talking it up? It would seem not; the UK’s plan to ban sales of new diesel and petrol cars looks like it will be brought forward from the already earmarked 2040. Paris wants to ban combustion engine cars by 2030, and Germany’s federal council passed a resolution banning combustion engine cars, also by 2030. This is perhaps why Credit Suisse have forecast that sales of rechargeable batteries will treble to $59 billion by 2025⁶.

Conclusion: a bright future!

So the future looks positive for potential Argentine mining investment, to sit rightly alongside the already well-developed investment amongst its neighbours. As that investment activity and expansion increases, Willis Towers Watson is well-positioned to advise on, and implement, suitable risk transfer strategies to support investment decisions. With major offices in Argentina, Brazil, Chile, Colombia, Mexico and Peru, we are present in the principal mining territories. From early needs such as M&A advisory, or D&O placement, we work across all of the operational risks to ensure our clients can continue with their growth objectives. And as your business grows and the workforce grows, we also have one of the largest Human Capital and Benefits practices, which enables us to provide our mining clients with all of necessary risk and human capital solutions.

Based in Lima, Tom Holliday is head of Mining for the Latin American region at Willis Towers Watson.

“So the future looks positive for potential Argentine mining investment, to sit rightly alongside the already well-developed investment amongst its neighbours.”

¹ http://latam-investor.com/2018/03/macris-mining-miracle/
² https://www.reuters.com/article/chile-copper-idUSL1N1KT0RM
³ http://www.mining.com/peru-expects-20-8-billion-mining-investments/
⁴ http://latam-investor.com/2018/03/macris-mining-miracle/
⁵ Re-Charging Argentina’s mining industry: Engineering and Mining Journal, February 2017
⁶ https://www.ft.com/content/8406deee-fb9a-11e7-a492-2c9be7f3120a
US coal: headwinds or tailwinds?

Introduction: Trump administration gets behind the US mining industry

The ever volatile and controversial coal mining industry in the United States continues to ebb and flow - with more flow than ebb in 2018. But does the coal industry now truly have tailwinds behind it, or do those persistent headwinds remain?

There is no question that the agenda of the Trump administration continues to be pro-mining and has led to industry improvement in certain areas, such as the reduced cost of regulatory compliance. Many legislative and executive changes were made in the first six months of office to positively impact US miners, through regulatory relief such as the voiding of the Stream Protection Rule and Resource Management Planning 2.0 Rule. However, a year later it must be said that there is still a great deal of uncertainty about the long term prospects for this industry in the US.

The US coal industry has mostly completed its “restructuring” period following the debt problems that plagued the industry in 2012 and 2013, with the financial health of the large producers on much stronger footing and a large part of the consolidation complete. However, we still see room for further consolidation, leaving a leaner and healthier industry, albeit with a smaller pool of insurance buyers in the market.

“Unfriend Coal” finds European success...

However, outside social pressures continue to mount, specifically for thermal coal producers that are outside of the control of regulatory policy, such as the “Unfriend Coal” movement and other Non-Governmental Organizations (“NGOs”) whose activities are targeting the mine permitting process.

The “Unfriend Coal” movement has proven to be a further thorn in the side of insurance buyers in the coal sector and has a direct impact on thermal coal producers. This is a movement that spawned from the Paris Agreements to reduce global greenhouse gas emissions and limit temperature rises to below 2 degrees Celsius.

As discussed elsewhere in this Review, this movement has largely found success with European insurers such as Allianz, Swiss Re, Zurich, SCOR, AXA and, most recently, Munich Re. These and other insurers have taken varying stances on insuring thermal coal producers and end users, with some vowing to completely exit the sector by 2019 and it has impacts on large global miners and US producers alike. However, we have found that what is being said at the top of these organizations, and what is happening on the ground, isn’t quite in lock step.

...while US insurers stay silent

Meanwhile, major US insurers such as Berkshire Hathaway, AIG, Chubb and Liberty Mutual, continue to remain silent. While there is sufficient Property capacity to withstand several withdrawals, the US Casualty market, particularly primary and umbrella, does not have the abundance of capacity that is available to the Property sector. The risk at this point is that the pressure to exit thermal coal will be further applied to US insurers in the future and potentially trigger a domino effect on other insurers and other types of mining. The Willis Towers Watson global mining team is in constant communication with our colleagues and clients on this issue to ensure we keep the clients ahead of any detrimental impacts to their programs and that optionality is maintained.

NGOs wise up

Furthermore, the NGOs have increasingly become technically savvy, at times attacking the mines at their source, the permits to mine. We have seen circumstances where NGO forensic teams have been legally challenging regulators on permits issued on the backs of what they deem insufficient Environmental Impact Reviews. In some cases, this has resulted in suspensions and delays in what was otherwise a clear mining permit.

Trump administration changes

In addition, the Trump administration continues to undergo constant change; most recently, the head of the Environmental Protection Agency (EPA) Scott Pruitt was replaced by a new acting head of EPA, Andrew K. Wheeler, his former deputy. However, Mr. Wheeler is a consummate Washington insider, a believer in undoing some of the existing environmental regulation and may prove better prepared to make an impact, though a long term successor is yet to be chosen.
No change to long term asset retirement plans
We have not seen utilities make changes to their long term asset retirement plans yet; given the uncertainty around President Trump’s prospects for a second term, this may be of key significance to the coal industry as it will ultimately be the driver for the long term success of US thermal coal producers. Change is still needed on the regulatory front to allow coal fired power producers to make the needed investments to extend the life of the existing coal fired units now in operation.

Coal still responsible for 30% of US electricity generation
Though the total coal consumption from US producers is trending downwards by a further 5% in 2018 to a total of about 772 million short tons, it can be seen from Figure 1 below that it remains nearly 30% of our US electricity generation with few signs of material deterioration in the short to mid-term.

Fig 1 – US electricity generation/coal production and consumption, 2016-17

(Million Short Tons) 2016 2017 % Change 2018 % Change

Coal Production
Appalachia 180.3 198.5 10.1% 117.3 -10.7%
Interior 144.1 145.4 0.9% 147.7 1.6%
Western 404.0 430.2 6.5% 431.2 0.2%
Total Production 728.4 774.1 6.3% 756.2 -2.3%

Coal Consumption
Electric Power Sector 678.6 664.7 -2.0% 629.2 -5.3%
Industrial & Other 36.0 34.7 -3.5% 33.6 -3.3%
Domestic Met 16.5 17.5 6.1% 16.7 -4.6%
Total Domestic 731.1 717.0 -1.9% 679.5 -5.2%
Export Met 40.9 55.3 35.2% 55.0 -0.5%
Export Steam 19.3 41.7 116.1% 37.8 -9.4%
Total Export 60.2 97.0 61.1% 92.8 -4.3%
Total Consumption 791.3 814.0 2.9% 772.3 -5.1%

Sources: EIA Short Term Energy Outlook (June 2018 release)
The long term impacts of President Trump’s administration and further NGO pressures such as “Unfriend Coal” won’t be known for some time, but the next key step to further stabilizing the US coal markets is the next presidential election in 2020. Many of the Obama administration’s regulatory impacts weren’t fully developed until the second term and we expect a similar path with the Trump administration.

Coal capacity increases significantly

However, a bright spot has been the thermal export market, which has been steadily strengthening in 2018, providing some much needed price improvement in the short term. Despite the headwinds in the US and Canada, globally installed coal capacity has increased significantly in recent years and is set to continue that growth trend for the next five years as per Figure 2 above.

The long term impacts of President Trump’s administration and further NGO pressures such as “Unfriend Coal” won’t be known for some time, but the next key step to further stabilizing the US coal markets is the next presidential election in 2020. Many of the Obama administration’s regulatory impacts weren’t fully developed until the second term and we expect a similar path with the Trump administration.

Positive outlook for global seaborne coal demand

Similarly, as shown in Figure 3 above, the world seaborne thermal coal demand curve looks positive, at least through 2021. There also still exists an estimated global coal consumption of well over 5 billion tons, though China accounts for nearly half of this. While the US domestic market may have some long term challenges, the continued expansion of global market demand will help sustain the industry as a whole, so long as those growth trends continue.

Fred Smith IV heads up Willis Towers Watson’s Mining and Metals practice in the United States.

“Despite the headwinds in the US and Canada, globally installed coal capacity has increased significantly in recent years and is set to continue that growth trend for the next five years.”

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1 EIA short term energy outlook June 2018
Water management: a flood of ills?

Introduction – the problem of water management

In March 2017, as Tropical Cyclone Debbie smashed rainfall records across Queensland, the mining industry was forced into damage control. The deluge surged inland through the extensive coal reserves of the Bowen Basin, shutting down operations and washing away vital infrastructure. Losses racked up and, unsurprisingly, intense insurer attention is now focused on the mining industry’s risk management protocols.

Water management has long been a difficult area of risk for mining companies, not only in Australia but throughout other challenging physical environments such as South Africa and Latin America. Around the globe, miners are investing heavily in technologies designed to help them weather the extremes.

From drought to flood...

Just 10 years ago, the Bowen Basin had been drought-stricken for a prolonged period. Miners, used to treating water as a scarce resource, focused on and invested heavily in capturing as much rainwater as possible. But since 2008, companies have had to figure out how to deal with the complete opposite, as several flooding events have wreaked havoc on their operations, supporting infrastructure and water stewardship protocols.

The Bowen Basin is a 60,000-square kilometre area of central Queensland and an operational hotspot for a number of global miners, including BHP, Rio Tinto, Glencore and Anglo American. According to media reports published in Cyclone Debbie’s aftermath, the region supplies 80% of the world’s seaborne coking coal, essential to steel production.

Queensland’s mining operators suffered significant flooding events in 2008 and 2010. These floods focused the attention of miners and insurers alike on water management and risk management plans, with miners making enhancements to address the potential impacts of future major rainfall events.
Fig 1 – Queensland rainfall totals, March 2017

Source: Australian Bureau of Meteorology

Rainfall (mm)

The effect of Cyclone Debbie

Dependence on rail freight availability

However, Cyclone Debbie went beyond damage to individual mines; it affected something that all miners in the region are largely dependent on, being the rail freight behemoth Aurizon (formerly the Queensland government-owned rail assets) and its Goonyella rail corridor, which transports coal to a number of terminals on the Queensland coast at Bowen, Mackay and Gladstone.

While mining ceased at many major pits during Debbie’s onslaught, actual production downtime was relatively minimal, with the relevant risk management plans operating to design. However, the same couldn’t be said for Aurizon’s infrastructure; there was widespread damage to the 2500km network of lines that would normally move 500,000 tonnes of coal every day, bound for Japan, China, South Korea, India and Taiwan. Reports at the time estimated repairs would take over a month; there were also closures to the Newlands, Blackwater and Moura networks connecting mines in northern parts of the basin ensuring there was no ‘Plan B’ on offer. Never before had a single weather event impacted all four of the networks. As a result, what miners were taking out of the ground had to stay put.

Coal stocks tied up

And therein lies a key problem in trying to implement appropriate risk management and mitigation – natural catastrophes don’t discriminate. All miners found their direct operations impacted up to a point and then, when they were able to resume, faced the “double whammy” of having no way of moving their coal to terminals for export.

The damage suffered to the Aurizon network was significant, with an assortment of tasks identified as part of the incident management process. These included not only repairs to track and ballast but also vegetation removal, clearing and reinstating drainage systems, repairs to signalling equipment and bridge repairs.

Exceptional recovery speed

Like the mining companies, Aurizon had a robust risk management and disaster recovery process which saw the downtime minimised. All miners regained access to export facilities within two weeks.

In a public statement made in July 2017, Jason Livingston, Head of Network Asset Management for Aurizon said: “Cyclone Debbie led to the closure of all four coal systems, and across the network we had 844 damaged sites with 184 of these requiring major repairs. However, while the impacts were severe, the speed of recovery was exceptional as a result of thorough preparation, technology and hard work.”

Most losses beyond the mine boundary

Cyclone Debbie showed us that while miners’ water management plans were triggered and worked as intended, they were caught out by what was beyond the mine boundary. The inability to move coal was the cause of their major losses, running into the many millions of dollars, but these would need to be covered under specific extensions within their policies and, naturally, future policy negotiations and premium rates would depend on how this risk could be mitigated in future.

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The need for best practice water management

**Example 1 - Chile**

Achieving best practice water management is at the forefront of miners’ minds all over the world. Chile’s Atacama desert, one of the world’s driest regions, saw flooding rains in 2015. Characterised as a 1-in-100-year event, the downpour didn’t convince BHP to shelve plans to build a 180km pipeline to bring water from the Chilean coast, together with a desalination plant to service its Escondida copper mine. Other miners have similar pipelines in operation or under construction to maximise the reclamation and re-use of water.

**Example 2 - Australia - 85% of mines impacted**

During the 2010/2011 wet season, rainfall across Queensland’s mining areas severely impacted the industry. Huge volumes of water poured into pits and underground operations, with miners forced to pump excess water into operational pits to prevent more widespread flooding. The severity of the event saw eighty-five per cent of Queensland coal mines restrict production or close entirely. The economic repercussions of these events were estimated to run to in excess of AU$5 billion.

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In January 2015 it was estimated that around 250,000 megalitres of ‘legacy water’ was still stored in pits across Queensland⁴.

**Exporting water management protocols**

Indeed, the technologies being developed have signalled a further business opportunity – exporting water management protocols across the mining life-cycle to other countries. The federal government’s trade and investment promotion agency, Austrade, is actively marketing itself to Australia’s mining industry as an early adopter of innovations in water management – not only as part of its risk protocols but a recognition that good water resource management is an environmental, social and commercial imperative.

“The technologies being developed have signalled a further business opportunity – exporting water management protocols across the mining life-cycle to other countries.”

Responding to water environmental risk

Environmental issues remain highly sensitive. The BHP Mitsubishi Alliance (BMA) in the Bowen Basin is Australia’s largest coal producer, according to the Queensland Resources Council, accounting for more than a quarter of Australia’s annual coal exports. In 2015 BMA announced research on the impact of mine water releases into the surrounding environment.

Aquatic ecosystem health research program

The climactic volatility meant water quality release thresholds imposed by Queensland regulators were restricting BMA’s ability to discharge excess water during extreme rain events. BMA partnered with the University of Queensland’s Sustainable Minerals Institute and the Central Queensland University Centre for Environmental Management to establish the aquatic ecosystem health research program.

The report, released in 2015 before the impact of Cyclone Debbie, monitored three years and two wet seasons, collecting data from over 150,000 points to monitor and measure the effects of mine water releases. BMA said it found the eco-system impact was lower than previously believed and was the catalyst for the company to work with regulators to amend release conditions.

Non-compliance not an option!

Miners continue to develop and employ automated solutions to sense when waters are in flow, along with if and when the pre-approved volumes can be released. Environmental staff are certainly aware of the risks if mine operators don’t comply with the regulatory framework. Quite apart from the monetary and reputational damage (which is uninsurable), is the very real possibility of losing their licence to mine.

Insurer attitudes

Given the size of the Bowen Basin and the number of miners both operating there and impacted by the infrastructure failure, insurers are feeling the pinch from Cyclone Debbie.

Multiple losses from the same event

There are a relatively minimal number of insurers offering capacity in mining risks and they are getting hit with multiple losses from the same event, impacting both their loss ratios and reinsurance costs. Understandably we’re seeing a lot more scrutiny on how mining companies provide information about their risk management protocols and their systems for managing the aftermath of natural catastrophe events.

“There are a relatively minimal number of insurers offering capacity in mining risks and they are getting hit with multiple losses from the same event, impacting both their loss ratios and reinsurance costs.”
Significant capacity...

Still, there is significant capacity available – in the region of A$1.5 billion across all global markets. Water management is not the only risk weighing heavily on the market; we’re seeing impacts from earthquakes and fire losses as well. Combined, the catastrophe risk and operational risk markets probably engender around AU$800 million in premiums from across the mining world and there is currently upward pressure on premium rates.

...but a dwindling premium pool

However, as the premium pool begins to run dry, there’s no doubt that insurers will try to make good some of their losses through increased rates and batten down the hatches for the next major claims event.

Conclusion: demonstrate your water management credentials!

Every drop of comfort a mining company can bring to the insurance market in demonstrating their risk management systems and preparedness is therefore vital to minimise any increase in premiums and avoid reduction in coverage and restrictions in sub-limits.

Willis Towers Watson is working closely with clients in the sector to raise awareness of the changing marketplace. By commencing renewal strategy discussions early and assisting in the preparation of robust marketing documentation that clearly articulates their risk awareness and risk management protocols we have been able to deliver outstanding results in the face of challenging market conditions.

Gavin Wilby is an Account Director for Willis Towers Watson based in Melbourne, Australia, responsible for developing and implementing insurance and risk management strategies for key Australian clients. Previously he was Risk & Insurance manager at BHP Billiton.

5 https://www.bhp.com/community/case-studies/managing-for-water-supply-variability
Part two: transferring mining risk
Don’t throw the baby out with the bathwater!

It has been claimed that this phrase dates back to a time when the household shared the same bath. Father would bathe first, then mother, then the children, followed lastly by baby. The water would be so dirty by then that, in theory at least, a baby could be accidentally tossed out with the bathwater if one was over zealous in off-site water disposal. Sounds grim!

Idioms that stand the test of time tend to contain a kernel of truth. This phrase reminds us to recognize the strong foundation of trust people have built between the mining and insurance industries. I’m new to the insurance sector, but I’ve been working in mining since I was a teenager and now that I’m dipping my toe into insurance I’m noticing the water could be a little clearer.

For anybody who is having trouble recognising a metaphor so tortured, I refer to transparency. Two-way transparency is a requirement to ensure trust between parties in a relationship. In seeking to promote a stronger relationship and deeper recognition of the alignment of purpose, miners tend and indeed are required, to be very transparent about the nature of their operations, risk management and exposures.

Insurance is a valuable service for the executives and boards of mining companies. Mining companies benefit from the aggregation of risk across regions, companies and industries. This mitigates the impact of any interruption to production that may otherwise cripple a company or perhaps prematurely end a career.

There are excellent examples where risk engineering services provided by the insurance industry have provided insightful and implementable recommendations to mitigate and even prevent losses. Insurers aim to minimise claims, in part through these recommendations, and miners want to minimise production interruptions. This is a great example of alignment of purpose between the insurance and mining industries.

Information that is more general in nature seems to be much more challenging to access but is arguably equally valuable. For example, if a company can access reliable loss information in the categories, global historical property claims, gross historical property claims for the sector, the relative risk of the company’s operation(s) within the sector an insurance manager worth their salt can paint a picture for decision makers about the insurance market, the performance of the sector overall and the company’s level of inherent risk within the sector.

This translates to:

- A better understanding of changes to the cost of premiums
- Increased support to implement recommendations from risk engineering reviews
- Improvements in fire protection, critical spares and business continuity plans
- A willingness to approve incremental capital expenditure to improve resilience to insurable risk

Transparency benefits insurers as well. Sophisticated purchasers of insurance understand that insurers provide a service and expect that service to include a fair margin. Being transparent around total losses within specific sectors:

- simplifies price negotiations
- creates a more informed demand side of the market
- advertises the utility of the product
- increases purchasers’ sophistication in matching other services offered by insurers with their strategy

All these factors inexorably point to a more sophisticated market. This creates opportunities for those insurers seeking to differentiate on the basis of qualitative factors, rather than purely on price.
There is of course a temptation to trade on information asymmetry; in the short run a naïve purchaser may provide additional margin, but insurance is not, or at least should not be, a short run game. Mining companies want profitable insurers so the market is sustainable in the long run and insurers want mining companies to build their resilience to insurable events so there are fewer claims in the long run. Our alignment is based on trust and is best served by increased transparency as we seek to leverage our aligned purposes to strengthen our relationship long term.

The insurance industry is steeped in tradition that sets it apart, provides many of the characters we know and makes insurance such a great industry with which to be involved. We no longer share our baths with the rest of the family to conserve hot water; the application of modern technology like electricity, plumbing and water heating means each family member can enjoy fresh, clear water to bathe. Through the application of new technologies in data analytics and consolidation, perhaps our industries can follow suit, keeping our traditional bath but filling it with some fresh, clear information so we can enhance our aligned purpose and ensure we build a bond between our industries we can proudly pass on to our safe, clean babies.

Brett Forrest is Insurance Manager at South 32 based in Perth, Western Australia.

“Mining companies want profitable insurers so the market is sustainable in the long run and insurers want mining companies to build their resilience to insurable events so there are fewer claims in the long run.”
Global mining insurance market round-up: signs of genuine change?

London - Property
A sporadic market “correction”
In last year’s Mining Risk Review we suggested that a turn of the tide was perhaps on the horizon of the mining insurance market. 12 months on, we can say that some genuine change is now visible within the market, although perhaps not on the scale or to the degree of uniformity that some insurers might have hoped or imagined. Instead, it’s perhaps more accurate to say that this is a market that is in a state of flux: it’s changing certainly, but these changes are sporadic and materialising under the continuing influence of surplus insurance and reinsurance market capital.

Meanwhile, the overall premium income pool for this line of business continues to deplete. We estimate that this has declined from approximately US$900 million in 2015 to approximately US$600 million today; this is due to a combination of a number of factors, including mergers and acquisitions, the changing mining world, lower values and previous rating reductions.

North Atlantic windstorms effect less pronounced than expected
Last year we went to press just as the first of three major hurricanes (Harvey) was about to strike the southern United States. While we were aware that these storms would have an effect on market conditions, it was difficult to say at the time what the extent of that effect would be. Today we can say that while the storms have had some effect on market conditions, this has not been as pronounced as many insurers in the market were hoping, and the modest upturn in rating levels that became evident during the January 1 renewal season do not seem to be sufficient to provide the magic bullet of turning a loss making portfolio into a profitable one.

Queensland floods impact overall mining loss record
If we have a look at the five-year major loss record of the mining industry (see Figure 1 right) it can be seen that this class of business is continuing to hurt insurers with some significant losses. Of particular interest has been the number and quantum of flood losses in Australia emanating from Hurricane Debbie in the first quarter of 2017, together with two other major losses, one from Russia and one from the Middle East. All in all, this is hardly the loss record of a benign market segment and perhaps it is no surprise that we have seen the first signs of resistance to the previous softening dynamic within the market.
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</tr>
<tr>
<td>Q3'18</td>
<td>South Africa</td>
<td>Underground fire – multiple fatalities</td>
<td>outstanding</td>
</tr>
</tbody>
</table>

*Source: Willis Towers Watson*
Recent mining losses in a nutshell

<table>
<thead>
<tr>
<th>2017</th>
<th>2018</th>
</tr>
</thead>
<tbody>
<tr>
<td>73 Registered insured claims representing USD$1.2Bn ground-up</td>
<td>30 Registered claims</td>
</tr>
<tr>
<td>33 Other - general Property</td>
<td>7 Nat Cat (3 earthquake, 4 storm)</td>
</tr>
<tr>
<td>17 Fire/explosion (8 hot work)</td>
<td>4 Explosions (all u/g coal)</td>
</tr>
<tr>
<td>15 Natural Catastrophe</td>
<td>6 Fires (Africa, NA, Europe - 2 coal, 1 potash)</td>
</tr>
<tr>
<td>7 Machinery Breakdown</td>
<td>13 Others, including 2 tailings in Africa, 1 in Mexico, 1 in Australia</td>
</tr>
<tr>
<td>1 Strikes, Riots &amp; Civil Commotion</td>
<td></td>
</tr>
</tbody>
</table>

Source: Willis Towers Watson

How things stand today - the three market segments

However, current dynamics present a continuing complicated picture. Let's have a closer look at how today's market is constituted (as per figure 2 below) and what may result in the months ahead if this dynamic were to alter significantly.

Fig 2 – the global mining insurance markets in 2018

Source: Willis Towers Watson
In very general terms, we can say that the global mining insurance market comprises three broad groups:

- **Regional markets** in Europe, Canada, the United States, South Africa and Australia. These insurers tend to focus on business from within their own region and to varying degrees are reliant on reinsurance provided by the Direct and Fac (D&F) market that is primarily based in London.

- **The D&F market in London** (and elsewhere). This market relies on writing business from all over the world, often on a reinsurance basis. However, these insurers are not, generally speaking, mining specialists and consider the industry to be but one aspect of their overall Heavy Industry portfolio.

- **Composite insurers with specialist mining underwriters**, operating on a global basis, who focus on mining as a specific industry and who have the underwriting acumen and engineering expertise to provide solutions for risks that are regarded as too challenging by other parts of the market.

So what has happened to these three elements of the market during the last 12 months?

- For existing business that is **written regionally but heavily backed up by the D&F market**, we can say that the effects of market losses such as last year’s hurricanes have been relatively limited. The D&F market has been affected by recent natural catastrophe losses but at the January 1 renewal season their own reinsurance programmes were not as adversely affected as had been feared – despite the fact that the overall Property portfolio may be running at a loss ratio of over 100%. Indeed, some members of the D&F market seem to have avoided the worst of these losses and are still proving to be relatively competitive. This has had the effect of keeping any premium increases to modest, single digit levels, although there is a danger that this may increase as we discuss later in this article.

- However, for existing business that for capacity or other reasons requires the participation of the **specialist mining market**, programme renewals have proved to be a little more challenging. This is mainly due to two factors; firstly, these markets have been more significantly impacted by recent nat cat losses (especially in Australia) than the D&F market, and secondly, access to that same D&F market for these specialist mining insurers is likely to become more limited. As a result, particularly for major programmes that have been impacted by these losses, we have seen some major renewals where the eventual terms negotiated have been more challenging.

- But perhaps the most interesting market development in recent months has been how what the market would call **“New, New” business** (in other words, featuring exposures that have never been insured in the international mining markets in the past) has been treated, in particular by the specialist mining market. We have been involved in one particular major programme which was previously insured 100% locally that, because of a previous incident, required certain cover that historically had not been provided by the market. Because this particular buyer was “New, New”, specialist mining insurers were able to look at the programme with fresh pairs of eyes backed up with sound engineering expertise. As a result, this buyer was provided with this cover as the specialist insurers involved were able to be satisfied as to the structural integrity of the mine because they were provided with the right information from their engineers. Moreover, terms, conditions and cover were provided without any meaningful back-up from the D&F market who to a large extent found themselves unable to participate.

Meanwhile with the exception of some “New New” business as described above – where the prospect of fresh premium income has proved to be the catalyst for an innovative approach - the products offered by the market are the same tried and trusted offerings that have been available in the past, with little change in retentions, policy wordings or sub-limits.
Signs of anxiety from the D&F market as underwriters depart

The outlook for the remainder of 2018 will, to a large extent, depend on the continued robustness of the D&F market. We have seen that this market is generally Lloyd's-centred; with Lloyd’s having had a difficult year in 2017, it is facing its own challenges and it is reported that the Lloyd's Franchise Board will be investigating the bottom 10% or so of their portfolio that has consistently failed to deliver profits over the last few years. It seems likely that some mining portfolios will fall into this category.

Moreover, we understand that some D&F insurers have indicated that they are unlikely to participate in certain programmes next year; and that recent underwriter departures in London may limit the amount of expertise (and indeed capacity) available from this market as we move towards 2019. These underwriter departures include experienced professionals from QBE, Brit, Markel, Starstone and Argo.

Capacity provided by the D&F market has been critical in keeping terms and conditions provided to miners competitive in recent years. Were that capacity to be more seriously impacted by further major losses, not only from within the mining industry itself but also from any consequence of another disastrous North Atlantic hurricane season, then the relatively mild market “correction” that we have experienced during the first part of 2018 may well turn into something more significant. Buyers and regional insurers that have relied on this market for support during the last few years will then have no alternative but to re-engage more fully with the specialist mining market, where the terms offered are likely to be much less competitive.

Be prepared for change – but quality will always win out

But for the moment, any market upswing remains sporadic and limited by the abundance of available capacity, especially for quality risks. So long as this capacity remains basically in situ then the usual laws of supply and demand will continue to apply and the current upswing will begin to fizzle out.

As always when a poor series of underwriting results is recorded, insurers will look to the best programmes as a safe haven for their available capacity. So for those programmes featuring quality risk information, with clean loss records and a track record of well-engineered projects, there will be little to fear from a market still beset by the challenge of a reduced premium pool; but for others who are not so fortunate now is perhaps the time to plan ahead with your broker just in case the market climate begins to deteriorate later in the year.

“For the moment, any market upswing remains sporadic and limited by the abundance of available capacity, especially for quality risks.”
London – International Casualty

A consistent market

Despite the hurricane catastrophes of 2017, the International Liability Mining market has remained, for the most part, consistent as we progress through 2018. This is in spite of initial conjectures that, following these incidents, there would be a consequential upward effect on market pricing as a result of rising treaty costs. However, such a reaction is yet to materialise, although some markets have been subject to treaty restructuring, most notably in the form of seeing their net retention increase and in certain cases their ability to write large primary lines reduce. Notwithstanding this, the abundance of capacity still available has provided both price and capacity insulation to buyers, particularly at an excess level.

Resistance to rating reductions

With regards to pricing, we have witnessed a sustained period of resistance from insurers to rate reductions, which has signalled a palpable shift in underwriting conditions. Where small rate reductions may previously have been entertained by underwriters, the default rating position for insurers has become flat and as a result any exposure increase now correlates directly to a desire from underwriters to increase the premium.

Willingness to walk away

In addition, rating rationales are more heavily scrutinised and, in more extreme cases, underwriters are demonstrating a greater willingness to walk away from accounts, especially where loss records are poor. This is also the case where markets are undertaking a general rationalisation or ‘clean up’ of their books as they seek to only retain their profitable accounts. However, on the majority of programmes (where the limits purchased are well below the total available) these measures are largely offset by the accessibility of alternative capacity.

Focus on risk quality

In terms of underwriting, risk quality continues to become an ever more important aspect of the placing process. A series of tailings dams disasters over the past few years have resulted in a seismic change in how markets approach the underwriting of mining risks with tailings exposures, and this approach looks set to remain. In short, the coverage is still available but only when good quality risk information is provided for underwriters to review and legitimise their capacity deployment. Similarly, other underwriting factors continue to be under the spotlight, including exposures arising from underground mining, joint ventures, contractors and transportation. The benefit of surveys addressing these third party liability exposures therefore continues to grow and the demonstration of good risk management is paramount.

Ensuring relevant coverage

Finally, insurers have increased their focus on ensuring that coverage remains relevant, especially with regards to emerging exposures such as risks emanating from cyber and Unmanned Aerial Vehicles. As a result, we have seen insurers attempt to ensure that such exposures are either restricted or entirely excluded and covered under more specific policies.

These are relatively new challenges for insurers to deal with and it remains to be seen how these issues will develop. However, what is clear is that rates are unlikely to reduce in the near future as markets continue to pay close attention to risk quality as part of a wider focus on the sustainability of their portfolios and overall rate adequacy.
United States

Better off than some as capacity remains stable

In general, the US mining market has fared better than some of the global markets. With less exposure to reinsurance losses and a US mining industry that has produced better underwriting results than other energy classes such as oil & gas, the market has yet to truly enter a hardening phase. Certainly we are in a changing market, where accounts are experiencing much greater scrutiny from insurers than in years past and rate reductions are scarcely to be found. However, the market participants have remained steady and this stable capacity level, coupled with a comparatively higher base rating structure than other industries, has really helped buoy the market to some degree.

Modest rate increases for clean business

On renewal business that has not experienced recent loss activity, rate increases have been modest, in the 2%-5% range across the board for liability. The sole exception is Auto Liability, where irrespective of industry class it seems we are in a market that is demanding increases in the 5%-10% range. On lead umbrella and excess business, the markets have largely followed the primary trends, though with increasing pressure from London markets for lead and first excess business, US markets have been forced to compete more aggressively than they might prefer. There are specific pockets that have more challenges than others, such as underground coal, where the capacity situation is always tenuous.

Increased scrutiny of new business reverses decline in standards

For new business, there is significant scrutiny of loss records and engineering reports. In the past few years, pressure from new capacity has led to a softening of underwriting standards in some cases; however, we see this trend coming to an end in 2018. Some carriers are declining new business based on lack of sufficient engineering reports, a wording that is deemed too broad or lack of an available loss history. Quality market submission preparation, transparency and access to senior members of the insured’s management team will all lead to better results.

Rating upswing greater for programs requiring global participation

On smaller, single market property accounts, rating increases have also been modest - in the 2%-3% range - whereas on larger layered and quota share programs that utilize specialist global markets or London, the pressure on rating levels has been more significant. Most of the global insurers have had mining industry loss activity on top of catastrophe losses from windstorm, quake and wildfires. We have seen markets open the batting at +10%, though normally that gets tempered to 5%-8% once all is said and done. However, on mining accounts with losses, we have seen more significant changes.

Focus on renewal business

Other trends that we have noticed in the first half of 2018 is US property markets looking to maximize their capacity on renewal business where possible. In addition, carriers are increasingly taking isolationist approaches, looking after their own long term interests; where deal specifics don’t conform to that view, they will choose to walk away. Where target rate increases aren’t achievable, we see attempts to restrict coverage terms and conditions.

When one considers that rates have been falling by an average of 10% every year for the past 4-5 years, and that the global premium base in 2013 was significantly larger than it is in 2018, it can be seen that it will take a lot longer to get premiums back up to profitable levels if the market is moving at 2%-5% increases – it’s a relatively low starting point. Until we see meaningful market withdrawals, or another bad year for catastrophe events, the market is unlikely to see any material hardening.

Environmental market still limited

In general, the Environmental Insurance sector is experiencing its first hardening market in over a decade as a result of a loss-driven reduction in underwriting appetite. High severity claims have hit a number of different classes of risk including real estate, natural resources, transportation & logistics and energy. This unfavorable loss experience has resulted in underwriting authority being taken away from the field level and placed into the hands of executive underwriters, where greater scrutiny is placed on all complex accounts.

In addition, capacity has been further reduced in the aftermath of considerable market consolidation. In the last 24 months, six of our veteran environmental carriers have merged into three: XL-Catlin, ACE-Chubb and Liberty-Ironshore. Zurich and Ironshore continue to lead the mining sector and tailings dams remain the largest risk transfer challenge. In short, capacity remains limited and terms and conditions are hardening for pollution/environmental lines of coverage. Premium increases at renewal are expected to range between 10% to 20% outside of any change in exposure and claims performance.
Surety Market remains robust
As anticipated in our last Review, North American surety continues to enjoy attractive Combined Ratios as the economy grows. Consolidation within the space is beginning to show some discipline; however, rates are now approaching the cost of allocated capital, meaning that the economic pendulum may be stalled. Global insurers such as Sompo have acquired niche US insurers with surety exposure to provide non-correlating premium.

NGO concerns
Of interest to the mining sector are the perceived gains that international non-governmental organizations have made with the international insurers and the actual results of these perceived gains. As we reference elsewhere in this Review, a few global insurers have declared that they will withdraw from investing in (and in some cases withdrawing cover from) heavy consumers of coal and coal producers.

US sureties go global
More broadly, US mining operations have seen favorable commodity pricing as the global economy expands and a more balanced US regulatory environment appreciates the interplay of environmental responsibility and husbandry of our natural resources. The US surety industry has embraced these two events and broadened their appetite into international obligations. Specifically, US sureties are branching into Australia and Latin America as they grow comfortable with the mining remediation obligations. Barring a severe economic downturn, the mining space shows promise for the surety industry.

Cyber still underutilised
While we have seen more activity amongst miners in reviewing their cyber risk exposure, the purchase of risk transfer products still remains thin. As insurer forms develop, there is more and more pressure to truly separate all cyber risk from Property and Casualty products, though in some cases isolated areas of coverage can be negotiated back into those lines of insurance.

However, the Willis Towers Watson Cyber Risk Profile Diagnostic (CRPD) consulting engagement process has proved to be of value to the mining industry. We have seen a number of miners that have taken up this engagement, and in most cases it has led to the deployment of capital internally after gaining a better understanding of where the true vulnerabilities lie within the organization, whether that is Human Resources, IT, Operational Technology or elsewhere.
Canada

**Property – quality of information the differentiator**

In this current environment of rising/recovering metal prices (and by extension increasing Total Insured Values), underwriters are able to collect more premiums for the same line size than was the case in previous years. So while there is likely to be in excess of CAN$1 billion of available Canadian domestic property capacity, underwriters are no longer motivated to contribute larger line sizes to capture more premium.

Miners will benefit from a more competitive bidding environment if they are able to furnish the market with up to date quality risk information. With an increase in the number of submissions on underwriters’ desks, those clients that are able to differentiate their risk will find the market more competitive - leading to better pricing, broader coverage and a choice of which insurer they want to partner with.

Barring any additional material claims activity, 2018 will see flat to nominal rate increases for the majority of miners’ programmes in the Canadian market. However, the potential for rate decreases, although rare and likely to be in the low single digits, will still be achievable for best in class risks that are desired by the market.

**Casualty – more of the same…**

The landscape of the primary casualty market in Canada remains stable, with Zurich, Chubb, AIG, and Allianz demonstrating that they are comfortable in deploying limits in the working layers. These carriers differentiate themselves by their ability to not only write Canadian domestic mines but mines located around the world on an admitted basis, where required.

2017 did not see any significant liability claims in Canada and, in particular, any breach of tailings facilities. As a result, capacity has remained consistent; however, tailings remain the primary casualty markets’ key concern. Primary liability underwriters are consistently requesting very detailed underwriting information relating to foreign operations to tailings facilities on site, while renewal mining business can expect flat to minimal rate increases when compared to production.

For excess liability, an abundant of capacity continues to be available in Canada. The London market also plays a large role in Canadian miners’ programmes, often deploying a larger limit on a given layer.

For most risks, excess layers have reached minimum premiums for the capacity provided; flat premiums are therefore being achieved. Some accounts will see slight increases in rate per million, primarily driven by increases in clients’ exposure.

Australia

Consistent with our advice from our previous Review, natural catastrophe and Business Interruption exposures continue to be scrutinised by insurers as they review accumulations, particularly following the Tropical Cyclone Debbie losses in early 2017 and global natural catastrophe losses in the second half of 2017, and the impact of commodity prices respectively. There has also been an increased review of operational exposures to ensure insurers are deploying capacity to programmes with a commitment to ongoing loss control and risk mitigation.

Despite the losses that have arisen in the Australian market both from operational and natural catastrophe events throughout 2017, capacity has remained stable. As mentioned earlier in our Review thermal coal operations are subject to capacity constrictions, in particular from global insurers that have reviewed their capacity commitment to these types of operations.

Whilst capacity is available there has been uplift in premium rates in the property market throughout the first half of 2018 with insurers seeking to improve the profitability of their portfolios and we see these increases continuing for the remainder of the year. The level of increase on a per account basis is reflective of loss experience. Whilst pricing has increased, there has been no restriction in policy coverage to date, although sub limits for business interruption are being reviewed.

“Barring any additional material claims activity, 2018 will see flat to nominal rate increases for the majority of miners’ programmes in the Canadian market.”
South Africa

The South African insurance market has experienced a torrent of mining industry losses during the first half of 2018, including seismic events closing gold shafts for 3 months, a transformer fire at platinum mine and a collapse onto a longwall miner in the thermal coal industry. The market reaction experienced since May 2018 includes:

- Concern regarding lack of maintenance capital expenditure, i.e. replacement of time-expired equipment or “sustaining capital” and overworking of machinery
- Great selectivity; clients must have a demonstrably effective risk management programme with risk improvement recommendations either complete or substantial progress made
- Evidence of compliance, with Hot Work Permits required
- No quote unless clients meets these criteria
- Subject to the above, rating increases have ranged between flat and 10%

The reaction has been broadly similar across the market rather than specific to any carrier.

In addition, the environmental concerns of some global reinsurers referenced elsewhere in this Review are reducing capacity in the thermal coal sector, making placements harder to complete.
The retreat from coal underwriting: implications for mining companies

Introduction: fossil fuel divestment continues around the world

London
The past year has seen a quickening of pace and widening of the scope of actions being taken against fossil fuel companies in the cause of fighting anthropogenic climate change. One such action occurred in March, when the Mayor of London, Sadiq Khan, called on London’s borough councils to divest their pension funds from fossil fuel companies.1 At the end of 2017, the UK government had announced that it was dropping the fiduciary requirement for workplace pension schemes to seek the best returns from their investments, which had previously been seen as an obstacle to schemes that might have wanted to divest from fossil fuels.2

New York
Mayor Khan’s call followed the announcement at the start of the year by New York City Mayor Bill de Blasio that not only would New York be divesting its city pension funds from the fossil fuel industry, but the city was also suing five fossil fuel companies for their alleged contributions to climate change and the costs that it would incur in consequence, such as for improvements to the city’s infrastructure to protect against extreme weather events.3

San Francisco
On July 24 of this year, the San Francisco board of Supervisors became the first municipal body in the US to pass a resolution urging insurance companies to stop insuring and investing in fossil fuels, citing climate change and the impact of pollution on public health and the economy.4

Ireland
Meanwhile Ireland will become the first country in the world to fully divest public money from fossil fuels, following the passing of legislation in July which requires the €8bn Ireland Strategic Investment Fund to dispose of all its coal, oil, gas and peat investments “as soon as is practicable”.5

The (re)insurance industry
The insurance industry has also got in on the act.6 In June it was reported that nearly half of the global reinsurance market had now divested some or all of their assets from coal, after Hannover Re joined Swiss Re, Munich Re, SCOR, Lloyd’s, Generali and the Markel Corporation in announcing its decision to divest from the coal industry. Together, these companies are estimated to control 45% of global reinsurance premiums.7

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5 https://www.theguardian.com/environment/2018/jul/12/ireland-becomes-worlds-first-country-to-divest-from-fossil-fuels
6 Note: where the terms “insurance” and “insurer” are used in this article they should be understood to include reinsurers where applicable.
New underwriting policies - a game changer for the mining industry?

However, the potential game-changing development is that a number of the insurance and reinsurance giants have gone further than divestment, by announcing changes in their underwriting policy towards companies operating in the coal sector, mirroring the increasing number of banks which have announced that they will not be financing new coal projects8. However, this retreat from the underwriting of coal risks is not universal, being restricted so far to European insurers. Insurers in the USA have not followed suit, reflecting the Trump administration's fossil fuel policies, such as the commitment to roll back the Obama-era Clean Power Plan. And even among the Europeans, there are significant variations in policy.

Zurich

In November 2017 Zurich Insurance Group announced that it would cease providing insurance to entities that derive a significant part of their income from coal mining or coal-fired power generation9, joining major carriers AXA and SCOR which had already announced similar policies. Zurich will not insure companies that derive more than 50% of their revenues from coal mining or coal-fired power generation; for companies deriving between 30% and 50% of their revenues from coal, Zurich says that it will undertake additional Environmental-Social-Governance ('ESG') due diligence.

Allianz

Zurich has been followed this year by Allianz, which announced in May that it would no longer be providing Property or Casualty insurance to single coal-fired power plants or coal mines, whether operational or planned, and that “Allianz’s stated goal is to completely phase out coal risks in the insurance business by 2040”10. Allianz will not insure single coal-fired power plants or coal mines, but will continue to insure “companies that generate electricity from multiple sources, such as coal, other fossil fuels or renewable energies”.

Swiss Re

As this article was being prepared, Swiss Re became the latest major carrier to declare a restricted underwriting policy towards coal, announcing in July that it “will not provide re/insurance to businesses with more than 30% exposure to thermal coal across all lines of business”, a policy which applies to “both existing and new thermal coal mines and power plants”11. Swiss Re’s policy will allow it to continue to insure portfolio businesses if their coal contribution is less than 30%, although Swiss Re’s recent declaration differs from that of Allianz in not referencing any longer term ambition to completely phase out insurance for coal risks.

Munich Re

Munich Re, on the other hand, stated in July that it would continue to underwrite coal-related business. According to a spokesperson: “Munich Re will continue to insure all types of companies, taking into account an assessment of all risk aspects – including environmental, social and governance criteria”.12 However, the company was reported as saying that it looked at the issue repeatedly, with a number of investors reportedly considering that this underwriting stance could become increasingly untenable. And indeed it was only a month later that Munich Re’s CEO announced in the German newspaper Frankfurter Allgemeine Zeitung: “In the individual risk business, where we can see the risks exactly, we will in future in principle no longer insure new coal-fired power plants or mines in industrial countries.”13 This stance still does not go as far as some of Munich Re’s peers, and it remains to be seen how Munich Re’s underwriters will implement this “in principle” position in practice.

“The potential game-changing development is that a number of the insurance and reinsurance giants have gone further than divestment, by announcing changes in their underwriting policy towards companies operating in the coal sector.”

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8 http://www.mining.com/hsbc-pulls-plug-coal/
12 https://www.reuters.com/article/us-munich-re-group-coal/munich-re-to-back-away-from-coal-related-business-ceo-idUSKBN1KQ0NE
13 https://www.reuters.com/article/us-munich-re-group-coal/munich-re-to-back-away-from-coal-related-business-ceo-idUSKBN1KQ0NE
Meanwhile Generali issued a release in February 2018 announcing a range of measures as part of its climate change strategy, which not only fell short of complete disinvestment in the coal sector but also failed to include any change in underwriting practice, since its “exposure to coal-related activities is minimal in relation to total non-Life premiums and primarily refers to countries in which the economy and employment depend heavily on the coal sector.”

Likewise, when Hannover Re announced its coal divestment decision it said that it will continue to reinsure coal plants and other “fossil energy resources”, and would not “act contrary to the decisions of sovereign nations” that wish to continue with such projects.

SCOR’s position, as announced in September 2017, seems carefully worded: “SCOR will not issue insurance or facultative reinsurance that would specifically encourage new greenfield thermal coal mines or stand-alone lignite mines or plants.” This therefore leaves SCOR free to insure existing thermal coal mines, and the curious “specifically encourage” language (rather than an unequivocal statement about not offering insurance) may even provide some flexibility in respect of other coal assets.

AXA declared in December 2017 that it would stop insuring any new coal construction projects (as well as the main oil sands and the associated pipeline businesses) and would no longer provide property insurance to existing coal mines and power plants when presented as “coal only” risks. This strengthened their previous underwriting proscription, which (as with Zurich) had applied to companies earning more than 50% of their revenues from coal, but some exemptions will still apply in countries where coal comprises the main baseload energy.

“Insurers in the USA have not followed suit, reflecting the Trump administration’s fossil fuel policies, such as the commitment to roll back the Obama-era Clean Power Plan. And even among the Europeans, there are significant variations in policy.”
Rationale for retreat: what’s in it for insurers?

*Environmental altruism?*

Insurers’ stated motivation for their new underwriting stances is to assist in the efforts to reduce CO2 emissions in order to meet the Paris Agreement goal of restricting global warming to no more than 2°C above pre-industrial levels. Zurich stated in the press release announcing the change in its position:

> “Insurers can play a role in facilitating this generational transition towards cleaner energy by increasingly reflecting the climate-related risks inherent in thermal coal in their underwriting and investment policies.”

Allianz’s announcement included a statement that it was “significantly expanding its climate strategy”, aiming to “ensure the integration of the [Paris Climate Agreement] two-degree target in all of the Allianz Group’s relevant business activities”. The purpose of Swiss Re’s thermal coal policy is “to support transition to a low-carbon economy”.

*Natural catastrophe loss concerns?*

While insurers’ announcements on their fossil fuel positions have tended to be worded in altruistic language of this kind, they will also have been motivated by self-interest. While there remains a variety of views on this subject all around the world, it’s interesting to report that less than 0.01% of authors of peer-reviewed articles on global warming published in 2013 and 2014 rejected the concept of anthropogenic global warming.18

In December 2016 ClimateWise, a global network of 29 insurance industry organisations convened by the University of Cambridge Institute for Sustainability Leadership, reported that the frequency of windstorms, floods, and weather-related catastrophes had increased six-fold since the 1950s.19 Given the likely link between this trend and changing climate, insurers who will be expected to pay claims arising from such events have a clear incentive to try to mitigate the extent of climate change.

From insurable to uninsurable?

Indeed, as the insurance sector looks to manage its exposures and risk aggregations, it is possible that more frequent and predictable climate-related events could render certain currently insurable risks and/or assets uninsurable in the commercial market. AXA’s December announcement included a blunt statement from its CEO: “A +4°C world is not insurable”.

In an Opinion piece on 9 January 201820, the Financial Times described this pullback from coal underwriting as “a welcome and logical development”, stating:

> “It is not possible to shut down coal production overnight, without severe consequences for energy security in many parts of the world. Countries such as Poland or India have no immediate alternative. But any responsible government should be aiming to phase out coal as swiftly as possible, especially given the rapidly falling costs of cleaner alternatives. Many insurers have already stopped investing in coal. It makes little sense to adopt a policy of disinvestment unless underwriting practices also change.”

External pressures

Meanwhile, external pressure continues to be applied to insurers. In May, a group of NGOs involved in the Unfriend Coal campaign wrote to the CEOs of 25 leading energy insurers, ahead of a meeting in Paris in June hosted by the Geneva Association. Their letter called on the CEOs to immediately divest from coal and tar sands companies and stop insuring companies that operate in these sectors, unless they are rapidly transitioning to clean energy sources. Unfriend Coal is also applying pressure on individual insurers which it sees as behaving at odds with climate change statements and commitments.21

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18 http://journals.sagepub.com/doi/abs/10.1177/0270467616634958
20 https://www.ft.com/content/bdda17ee-f46f-11e7-88f7-5465a0ce1a00
**What does this mean for companies in the mining sector?**

**Giants relatively unaffected**
The giants of the coal mining sector operate diversified businesses, producing not only coal but a wide range of other commodities such as iron ore, platinum and copper.

Such companies will tend to fall within the 30% - 50% thresholds referenced above, leaving carriers like Zurich and Swiss Re free to offer them insurance within their new underwriting criteria if they choose, or indeed if the companies want it – most of the mining ‘majors’ use alternative risk financing structures to carry substantial self-insured retentions.

**Danger for smaller operators**
The companies in the sector more likely to be affected in the short-to-medium term are therefore the smaller operators, with single-site exposures and/or without a diversified portfolio of other activities – although if insurers progressively tighten their underwriting practices towards coal, moving towards a complete exit from the sector as envisaged by Allianz’s recent declaration, the majors will start to fall within scope of the companies new underwriting criteria.

**Surplus capacity may mitigate effect**
Whether the unavailability of certain carriers will make a material difference to the scope and/or cost of insurance for mining companies remains to be seen. Although there will be geographical differences and variances between different classes of insurance, it is well documented that the global insurance market in recent years has enjoyed record levels of capacity, as new capital has flowed into the market from investors seeking better returns than have been available from traditional interest-bearing investments.

**Not all insurers following suit**
The position for buyers will also depend on how many other insurers join those who have already declared a restricted coal policy. The carrier announcements over the past 12 months have not precipitated a domino effect on the rest of the market, and the changes to date seem unlikely to represent any significant market change or withdrawal of capacity.

“Another unknown is how the new restricted policy on coal insurance will apply when it comes to treaty reinsurance, rather than direct or facultative. Will the likes of Swiss Re be able to include the threshold criteria used for their retail clients to those of their treaty clients?”
Mining insurance – a Russian perspective

Introduction: a background to the Russian mining insurance market

For the last two decades the Russian (re)insurance market has been developing constantly. Today most of Russia’s heavy industrial risks are (re)insured in the international insurance market; during this time they have already faced different market trends, from highly competitive terms through to serious rate increases following global insurance losses and specific Russian loss activity. The oil and gas, metals and power generation industries in Russia have a long history in the insurance market and now form a significant portion of many European insurers’ portfolios.

Insurance a relatively late proposition for Russia’s miners

For Russian miners, insurance has been a relative latecomer as a business proposition. Despite Russia’s significant contribution to global metal and diamond supplies, during the 10 years up to 2016 there was only one dedicated Russian mining insurance programme placed in the international insurance market. For most Russian miners, even at the highest level of management, insurance has not been considered as a realistic proposition to respond to the key exposures of their mining operations. Together with this pessimism, factors such as the limited cover available in the international mining market and the high pricing for the cover on offer has compounded the issue.

Reasons for renewed interest

However, a combination of factors has led to an increased interest from Russian miners for insurance solutions during the last few years. Why?

- **Commodity export producers have flourished since the Ruble currency drop in 2014-2015.** During the first years of the devaluation, the margin effect was astonishing; even in 2018 total cash costs in almost every type of ore production and processing remain at minimum levels compared to the rest of the world. Interest in securing these high margins has resulted in the consideration of Business Interruption insurance.

- **Increased severity of events (or maybe as reported by the media).** Several large catastrophic events across the globe have triggered a renewed interest in insurance, specifically for underground mines, open-pits and tailings dams. Some large events have also occurred in Russia and forced the management of several companies to start implementing risk-based scenario analyses for their operations, calculating the potential effect on their business. This has paved the way for the consideration of risk transfer solutions such as insurance.

- **Softening of market conditions.** Historically what Russian miners consider as their key exposures may not have been insurable in the mining insurance market. However new coverage options are now becoming available, with higher limits, new types of extensions, and other tailor-made solutions. Overall market capacity for special risks is rising and underwriters are offering attractive terms for new and high-profile clients with good risk-management.

- **Industry education and communication.** Financial executives and risk managers share their experience and knowledge with other mining companies and tend to implement best market practices for their operations. New insurance programmes and covers have raised interest levels within the Russian mining peer group. Comparisons of technical practices with global industry peers are also well received by Russian miners and the international insurance market is a good facilitator for such knowledge sharing.

The Willis CIS team has spent years trying to persuade some key industry players to look at comprehensive Property Damage and Business Interruption insurance programs as a viable corporate solution for risk transfer.

**Higher margin players showing the most interest**

Those showing most interest are definitely companies with the highest margins. Nickel, gold and diamond producers so far are the only owners of such insurance programmes with specific mining covers insured in the international insurance market. Recent placements support the fact that it is becoming possible to raise very specific and dedicated types of cover for Russian clients and we definitely expect more and more producers of gold, copper, coal, potash and other minerals to consider high quality insurance.
Developing the right underwriting information for the international markets

During the last 3-4 years the Willis CIS team has been constantly negotiating terms and conditions with major market underwriters for new and complex insurance programmes. These negotiations were generally dedicated to very specific aspects of cover which are considered key risks for buyers as well as for sellers - permanent underground workings, pit-walls, tailing-dams and flooding.

With full appreciation and respect for the insurance market’s initial concerns, a fair and balanced solution has been found and implemented. To ensure underwriters are comfortable with the risk, it is generally understood that significant engineering involvement, explanation and dialogue are required.

Engineering key

Every mining programme has unique clauses and terms which represent specifics of the company and its operations; the level of dependents on engineering information are such that they can only be compared to offshore upstream insurances. We have also seen that insurance markets respond positively to the use of special mining consultants and experts for particular areas of interest (for example, geotechnical engineers for mine and tailings designs).

For Russian mining insurance, representatives from several engineering backgrounds support our programs and the combination of all of these allow for the achievement of the best results:

- Insurance company engineers
- Broker engineers
- Independent market engineers (Hawcroft, Mensor)
- Mining experts (SRK, design and geological institutes)

We have found it very effective for Willis CIS engineers to accompany global technical experts in Russia – our engineers have unique cultural knowledge, and a full understanding of Russian practices for the handling of industrial risks.

Good submissions build trust

High quality technical information and data availability is definitely the first and most important step for effective and trustful cooperation with insurers. Submissions not only include descriptions, plans and projects but also sometimes sensitive internal reports and performance analysis. Bearing in mind the complexity of assets, underwriters are unable to draw a full picture based on partial information. The more transparent and extensive the information provided before inception, the more reliable the response from insurers tend to be during any future claim settlement.
Coverage case study – open pit mine earthworks coverage

Underground mines and open pits are constantly developing areas, subject to redesign and adjustments as the life of a mine progresses. For insurers, the adequacy of operational procedures and the company’s reaction to emergency situations is the best measure of the quality of a risk.

Insurer reluctance on open pits surprises Russian miners

Much to the surprise of Russian miners enquiring about insurance, specialist mining underwriters are hesitant to provide cover for the earthworks of open pits themselves (pit walls and haul roads). Historically Business Interruption from a mine collapse would only be covered if mining machinery and equipment is damaged in the process. With this type of cover, any collapse which impairs mine access could be covered, regardless of whether or not there was damage to equipment. In some cases, insurers feel more exposed to this type of event than they do for underground mines (permanent mine workings); this is due to the nature of open pits and the complexities associated with risk quantification and claims settlement.

Open pit challenges

Issues that should be considered and given special attention when looking at pit wall cover include:

- Open pits are constantly evolving - an inherent hazard is rock/earth movement in the open pit mines
- Although separate events may be unpredictable, in general it is expected that cracks will develop in mine workings due to geological conditions, weather etc.
- With the use of modern radar systems, geo-monitoring specialists are usually aware of a collapse before it actually occurs
- Disclosure of crack monitoring and recording is crucially important in areas where a collapse is expected - predictive analytic methods should be used for identifying potentially dangerous cracks
- Quality and quantity of access ramps - multiple access ramps allow for mitigation of Business Interruption losses should a collapse occur

Getting the wording right

It is very important to define this type of coverage properly in the insurance contract wording, and to take care, for example, where some traditional extensions – which often have small monetary limits – could arguably apply to a pit collapse. It is important that coverage for Debris Removal and Landslide are clearly segregated from the cover for a pit collapse event. Our professional wordings experts are careful to consider such situations when drafting a tailor-made wording for a particular client’s demands.

Responding to the timeframe challenge - a new approach

Nevertheless, according to our own experience and market intelligence, even though an individual pit collapse event may have been finally settled by insurers, miners have often been unhappy with the time taken to adjust such losses. Our team, together with a global mining insurance leader, is currently considering a new approach by implementing a structured risk solution to remove (or significantly reduce) claims complications. This may be a non-damage parametric cover, whereby loss of revenue is covered automatically by the insurance policy once certain parameters are triggered – for example, the moment a collapse is detected on radar systems could be the trigger for an insurance payout. Time will tell if this new solution becomes a realistic proposition for the Russian mining industry.

Alexey Veremenko is the Head of Power Generation and Engineering Risks Department at Willis CIS Insurance Brokers LLC, Moscow.
Project handover insurance cover: striking the right balance

Introduction – no single solution for handover risk
One of the key considerations for mining risk managers is how to administer insurance during commissioning and phased handover.

Commissioning a new mining operation is an exciting time for miners and their project stakeholders. It is also a time of intense administrative activity, whereby tight deadlines must be met. The commissioning of a new mining project can be a moveable feast – it is rare that things go completely to plan and it is common that finalisation is the outcome of a long period of fine-tuning and expectation management.

There is no single insurance product to cover the lifetime of a mining operation and from a Property Damage perspective there are typically three insurance products which will need to be placed with different carriers:

<table>
<thead>
<tr>
<th>Stage</th>
<th>Activity</th>
<th>Insurance product &amp; insurance carriers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stage 1</td>
<td>Exploration (mining scoping</td>
<td>Exploration Risks insurance – placed with exploration or select engineering</td>
</tr>
<tr>
<td></td>
<td>works)</td>
<td>insurers</td>
</tr>
<tr>
<td>Stage 2</td>
<td>Construction and commissioning</td>
<td>Contractors All Risks/Erection All Risks insurance</td>
</tr>
<tr>
<td>Stage 3</td>
<td>Commercial operations</td>
<td>Operational Property All Risks insurance</td>
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For a project manager it can be a daunting task to ensure a smooth and uninterrupted handover of insurance products in line with a project’s development. The area associated with most difficulties is the transfer from Construction insurance carriers to Operational insurance carriers (Stages 2 to 3). In this short article we will consider some key points associated with this process and outline some of the items for consideration.

**Handover often on phased basis**

It’s not unusual with large projects for equipment to be handed over from contractors on a phased basis. For example, let’s assume that a dressing plant has three identical dressing stages. For practical reasons, commissioning will often start with the first stage and proceed later with the following two.

Figure 1 below indicates how a Construction insurance contract and Operational insurance contract may be split for a single facility of this type:

![Fig 1 – Example of a division of cover between operational and construction policies for a dressing plant](image-url)
Construction insurance approach

Regardless of contract handover criteria, Construction insurers can cover some period of the initial operations (i.e. post-commissioning and maintenance period and including commercial production for a limited period). If in our example above, Stages 2 and 3 were to be commissioned one year later than Stage 1, it may not be possible to extend the Construction policy and Stages 2 and 3 may need to be handed over to Operational Property insurers on a phased basis.

Operational Property insurance approach

Operational Property insurers can theoretically accept equipment as and when it is commissioned, but it’s important to make sure the insurance contract caters for this. Typically insurers will require that the property satisfies 100% of contract design criteria for a continuous period of 72 hours without interruption, and that punch list items and defects should be dealt with. However a mining company should take care to examine the details of these parameters, for example:

- In a standard Property and Plant Testing and Commissioning clause, it may be stipulated that the entire plant must be commissioned - contradictory to a phased handover.
- It may be that the mining company’s Construction contract defines ‘design’ criteria differently. For example, design criteria could be interpreted as nameplate capacity (maximum throughput), or it could be interpreted as a measure of output quality versus quantity.

Additional considerations

Additional considerations need to be made when the production stages have shared utilities or buildings and where construction works continue in the vicinity of commissioned property:

- What exactly should be declared to the Operational Property policy and what should remain declared to the Construction policy?
- What would happen in practice if a loss during the construction phase on property declared to the Construction policy had an effect on property insured by the Operational Property policy?

It is worth noting that some insurers will consider the bespoking of the Testing and Commissioning clause in a limited way, but it is important if possible that there is a clear understanding of the handover requirements prior to negotiation.

Other considerations – losses

Let’s consider the scenario shown in Figure 2 below. In this example a contractor working on SAG mill 2 is conducting hot works which results in a fire. In addition to the damage to SAG mill 2, the fire damages SAG mill 1 and the shared building structure which are declared to the Operational Property policy.
What can happen when it comes to claims settlement?

- The Construction policy may have cover for surrounding property, which could cover the damage to SAG mill 1 and the building. However, coverages for surrounding property are often sub-limited and may not fully cover the costs to reinstate SAG mill 1 and the building.

- The respective policies may respond for their respectively declared property. It should be noted that in some cases this may mean two deductibles are triggered, meaning the mining company’s self-retention is higher than intended.

- There may be questions on how to allocate the loss for shared facilities such as the plant building.

- The Operational Property insurers may seek to recover costs from the contractor that caused the fire.

It should be noted that the answer will also depend on what is written in the respective insurance contracts.

This is all manageable, as long as:

- Subrogation rights for Operational insurers are clearly defined in the insurance contract; they should work reciprocally with the project construction contract. For example, if the liability of the contractor is ultimately covered by the mining company, then there should be a subrogation waiver on the insurance contract.

- It is important that Operational insurers have been made aware of the presence of contractors in the vicinity of SAG mill 1.

- It is important that properties under the respective insurance contracts are clearly defined and segmented, especially with shared facilities such as the plant building. This may involve declaring it wholly to one insurance policy or declaring an agreed proportion of the building values to each policy separately.
Dangers of poor administrative discipline

In our experience dealing with claims of this nature, difficult situations tend to occur where there is a lack of administrative discipline amongst the parties involved. Here are two typical examples:

1) A mining company has taken control of an asset and begun commercial production without formally signing acceptance certificates. This can raise questions about validity of cover for both Construction and Operational Property insurance.

2) Acceptance certificates are signed but the criteria for acceptance differ from the terms of the operational insurance contract. The Operational Property contract wording is not amended to cater for any variation in acceptance criteria.

Conclusion

If the mining company is commissioning equipment on a phased basis, then both Construction and Operational insurers can respond to this. Phased handover to the Operational policy is possible, but it is very important that the insurance broker and the mining company remain in constant discussions as to the progress of works.

The seamless solution – if it is possible – would be to keep all assets covered under the Construction policy until the entire plant reaches commercial operation and all acceptance certificates are signed.

If the acceptance criteria differ from the operational insurance criteria, then the insurers could amend the Operational insurance contract accordingly, within reason. Alternatively a mining company could keep initial operations under the Construction policy until the criteria are reached. It is best for initial operations cover to be negotiated at the beginning of the Construction insurance contract; otherwise this may require amendment or extension of the Construction policy at a later stage.

What is for certain is that the standard coverage on both Construction and Operational policies don’t address the issue of phased handover very well. As a result, we thoroughly recommend considering these issues well in advance of the inception of cover so an appropriate risk transfer solution can be developed.

“Phased handover to the Operational policy is possible, but it is very important that the insurance broker and the mining company remain in constant discussions as to the progress of works.”

Matt Tyler is a Divisional Director at Willis Towers Watson in London. He has been working as a broker and client manager for industrial clients in Russia, the CIS region and Europe for over nine years.
Aluminium losses: a ‘cold’ topic for insurers

Softening market coincides with record year for aluminium losses

For the last ten years favourable insurance market conditions, combined with consecutively profitable years for (re)insurers, have seen premium rates for the aluminium sector reduce consistently. The trend has also affected coverages, with a gradual movement towards higher limits for key risks such as service interruption and pot freeze. In 2017, (re)insurers’ long term strategies were subjected to a stress-test; the table in Figure 1 below gives an indication of a severe spike in global loss activity for this sector.

Inevitably, specific sectors experience bad years and while it is too early to predict whether the 2017 activity was an anomaly, loss activity emanating from aluminium in 2018 has been more benign.
Unusual spike in Pot Freeze and Power Interruption losses

Figure 1 highlights that the most common cause of loss during 2017 was pot freeze and power interruption (some data indicated that the cause of loss was ‘power interruption’ or ‘pot freeze’. However, the cause for pot freeze is invariably linked to an interruption to the power source or failure with power interconnection equipment linking power generation assets with smelting assets).

A power interruption for an aluminium smelter can have the effect of solidifying the molten cryolite in the reduction cells within a matter of hours from the time of interruption. Business outage periods can be quite lengthy, as the solidified metal must be laboriously prised away, damaged cells repaired and preparations made for restarting.

Whilst pot freeze has always been an issue for aluminium production, the events of 2017 raise the question of what may have changed to cause such large business interruption losses in the sector. We will summarise some key potential issues.

Key issue 1 – need for improved process efficiency

What can we see has been done to improve business efficiencies and how does this affect risk?

- **Advances in technology**, such as pot material and design aimed at increased amperage. This can improve process efficiency; however, in the event of a power interruption it may take a shorter period of time for molten metal to solidify due to a smaller amount of anodes and other materials which have less accumulated heat. This will become more common as the Soderberg cells are gradually replaced with pre-bake technology.

- **Automation of processes**, including power regulation is improving efficiencies. However, this can cause complications when an unexpected situation occurs. In some cases, power network automation can have the effect of overloading and tripping surrounding systems following a breakdown. As for the smelting process, further complications arise when operators have to override systems to control an emergency.

Key issue 2 – redundancy integrated into plant designs/plants working at capacity

- Modern plants are using fewer and longer pot lines, which can mean there is less mitigation capability should a pot freeze occur.

- Power transmission systems are under significant pressure. As power gets closer to the plant, bottle-necks can appear with, for example, one pot line relying on one substation.

- Favourable market conditions and power costs have seen plants operating at capacity, which means there is little redundancy should an interruption occur.

Risk mitigation measures

What action is being taken to mitigate these risks? Of course, aluminium producers are aware of these risks and companies are taking steps to address them. The following are among the measures we have seen:

- Steps to ensure adequate power supplies, including installed redundancies within in-house power facilities and additional access to grid systems. Improvements to third party supply chains have also been made for fuel supply to power production assets.

- Good compartmentalisation between key assets such as electrical sub-stations and pot line buildings.

- Established procedures for handling emergency situations, business continuity planning, and the ability to restart frozen pots provided correct shutdown procedures are followed. In this respect a great deal has been learned from previous emergencies, since recent losses have indicated personnel actions have a significant impact on cell downtime.

- Engaging with third party experts to reconfigure power supplies where necessary.

- Installing redundancies in power distribution systems with good spares policies for key equipment such as rectifiers.

“Whilst pot freeze has always been an issue for aluminium production, the events of 2017 beg the question of what may have changed to cause such large business interruption losses in the sector.”
Market reaction and the outlook for 2018

How are (re)insurers reacting to the 2017 loss experiences and what solutions are available to the aluminium industry?

Over the last year we have seen a tightening of appetites for aluminium processing insurance, consisting of (re)insurers “shying” away; there have been some complete withdrawals, as well as some insurer movement from a “ground up” appetite to a high excess of loss position. These developments have been manifested in pressures on pricing and key coverages. Limits and deductibles for specific exposures such as pot freeze are also under significant scrutiny.

Overcoming these pressures will require good engineering information and an application of lessons learned. Aluminium producers may have to increase self-retentions and, if this trend continues, it will lend itself to more structured forms of retention strategies such as the formation of captives. Willis Towers Watson has already been discussing captive solutions with some large producers; we have also been successful in developing structured facultative solutions for (re)insurers, particularly in the Lloyd’s and London (re)insurance market, which have demonstrated particular support and continuity of coverage for aluminium producers.

Finally, the years ahead may well see new (re)insurers emerge to take advantage of improved insurance rates following a year like 2017, so it is important that brokers conduct a proper market appraisal to identify any new players to introduce competition and mitigate any loss of capacity.

Matt Tyler is a Divisional Director at Willis Towers Watson in London. He has been working as a broker and client manager for industrial clients in Russia, the CIS region and Europe for over nine years.
Beyond insurance: parametric solutions for the mining industry

Introduction – time to change the risk management conversation

Mining is one of the world’s oldest, most established industries. It’s also in a period of transformation, propelled by changes in climate, technology and innovation. Fresh opportunities – and risks – abound.

Every year we have more data readily available at our fingertips. Thanks to the volume and complexity of this data, we are able to analyse and better understand risk in new ways.

However, data is only part of the equation; a different approach to risk management is just as vital to anticipating and meeting the mining industry’s evolving needs. Historically, major losses have triggered new views on risk, yet that’s just reactive – it’s now time we changed the conversation.

New levels of engagement

Swiss Re Corporate Solutions is seeking to do just that, with new data and new participants. We are committed to listening closely and learning more from the people working on (and under) the ground. In turn, we’re keen to share our knowledge and ideas for alternative risk-transfer solutions.

Most of us – risk managers, brokers, underwriters – come from a traditional background. We’re used to traditional meetings where we talk about the past with a limited number of stakeholders. But now we’re thinking of new ways and levels of engagement with each other. This is about working together to enable a new approach – there are no stupid questions or ideas!

Key concern: uninsurable nat cat cost escalation

While mining companies’ individual needs may vary, they’ve voiced a shared set of concerns. One is the escalation of natural catastrophes and the costs they carry1. Consider supply chain breaks, for example. When earthquakes, floods or cyclones knock out rail and roadways, they destroy equipment and halt the transportation of goods. But physical damage losses are usually a fraction of those incurred each day that a supply chain stays broken.

There’s a big difference between the numbers from physical damage loss and the interruption of business. Often the split between physical damage and business interruption losses can be as high as 10-90 in favour of business interruption. That’s why supplemental non-damage business interruption coverage could be of real benefit to a mining company.

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Accessing wider expertise
As protecting assets extends beyond equipment to cash flows, sales and profits, it makes sense to invite experts from other disciplines to join the conversation. Risk engineers, operations/sales teams and CFOs may have a different view on risk than their risk manager, broker or insurer counterparts.

Swiss Re Corporate Solutions believes that when these stakeholders – all desiring to protect a company’s operations and profitability – come together to exchange insights and information, results can be powerful, to the benefit of everyone involved.

Exposing – and bridging – the coverage gap
Another concern voiced by mining companies is the coverage gap. While there is still plentiful insurance capacity in the global market place, in some cases mining companies only receive limited protection for their key exposures because they can’t access capacity or the breadth of cover they require from traditional insurance structures.

In other cases, they may be left with no alternative because their insurance budgets – or timeframes to seal a deal – haven’t yet caught up to reflect the industry’s new complexities and risks. Regardless of the reason, such gaps are leaving companies vulnerable. Add in a natural catastrophe, and the business impact could be crippling.

Quick pay-outs avoid a long adjustment process
Nevertheless, calculating losses in the mining industry is inherently tricky. Even when mines collapse during earthquakes or flood due to cyclones, the ore isn’t normally lost; rather, it just becomes more difficult and therefore takes longer to extract. It’s not like a warehouse full of stock; by applying a parametric solution, we could remedy the coverage gaps left by traditional insurance and spare clients the frustrations of a drawn-out adjustment process. Instead, once triggered a parametric product would offer a quick pay-out – in a timeframe that meets, and exceeds, client expectations.

Pre-defined, customisable exposures and triggers
In an age when efficient business transactions are paramount, parametric solutions may offer an answer. And while they’re based on hard data and sophisticated modelling, they’re elegant in their simplicity.

Instead of open-ended coverage, parametric solutions feature pre-defined exposures and triggers. Pay-outs are also pre-defined and promptly paid, generally within 30 days. Such transparency and liquidity can be lifelines, especially for highly leveraged or public entities that must maintain a reputation of stability among lenders and investors.

Parametric insurance is not intended as a replacement for traditional insurance. Rather, it provides supplemental coverage for business operations stalled by natural catastrophes or for gaps left by conventional plans.

Parametric solutions are also customisable. They can be tailored to suit a client’s individual needs, and applied to a range of scenarios, including natural catastrophes.
A scenario suited for parametric solutions – Chilean earthquake

Let’s say an earthquake in Chile destroys critical infrastructure, such as ports, access roads or concentrate pipelines to a mine high in the Andes. The mine itself may not be affected at all, so how can it get back into operation quickly? Even if roads are just partially destroyed, it would be difficult to find alternative means to transport the concentrate and other goods. Ports may be altogether unusable, making it impossible to import replacement equipment or export concentrate. Regulators may prohibit personnel from the mine due to safety concerns. Alternatively mines may be deemed safe, but employees can’t reach them. With traditional insurance, a mining company might have (limited) coverage for some of these scenarios, yet in a chaotic disaster situation, there are other factors to consider.

Concerns that insurance can’t allay

Business Interruption losses can be catastrophic to cash flows. Add in a protracted adjustment process, not uncommon with traditional insurance structures, and the company may face a liquidity crisis. Spikes in commodity prices, due to sudden scarcities, can magnify it. Even companies with cash reserves must worry if destruction is severe or widespread and it takes months for local governments to rebuild surrounding infrastructure. What if contracts can’t be fulfilled? They risk losing client trust and market share if competitors fill the void. All told, impacts on profits can be detrimental and long-lasting.

The parametric way

In this instance, a parametric solution could nicely complement traditional coverage:

- Using data from reputable, independent sources, it could be structured to protect both physical and non-physical assets due to exposure gaps or interruptions
- Earthquake coverage could be based on a ground-shaking intensity index, such as the United States Geological Survey’s ShakeMap. Payouts would be pre-defined and pegged to pre-agreed triggers measured by a reliable third party, such as the Modified Mercalli Intensity scale
- For other natural catastrophes, coverage might be structured around data on precipitation, wind speed, sea level or storm category, as long as the data is consistent and has been captured over a long period
- Companies receive liquidity in approximately 30 days, rather than being hamstrung by interrupted cash flows

Addressing geographic spread

Mining operations can span vast geographies, so how can a miner determine which are covered? Swiss Re Corporate Solutions work with the company’s stakeholders ahead of time to establish exact areas, say by latitude/longitude. Then a property value could be set according to the defined area and an exposure percentage; companies choose how much coverage they want. Alternatively, we could draw a ‘box’ around an area vulnerable to risk. This is sometimes called a ‘Cat in a Box’ – here we need to remember that the bigger the area, the more expensive it would be. The big difference to traditional insurance is the pre-agreed trigger and the payout pattern.

Another scenario for parametric solutions – Australian Cyclone

To take another example, suppose a cyclone slams into the Bowen Basin in Queensland, home to Australia’s largest coal reserves (in a similar way to Cyclone Debbie last year). Massive rains wash out railways, mines get flooded and can’t be pumped out for environmental or other reasons. The physical damage might be small, but the business interruption impact is enormous, and can last for weeks or months.

A related but alternative scenario is when a major cyclone is forecast, but doesn’t hit an area directly. If companies have taken precautions and sent employees home to ensure their or their families’ safety, operations still cease, and downtimes aren’t covered by traditional insurance.

Insufficient insurance cover

Of course, a cyclone could hit, with worse-than-expected consequences. Companies operating in cyclone-prone areas may find (after the storm), that damage exceeds their traditional insurance coverage limits. So, similar to earthquakes, we work with clients ahead of time to design a complementary solution triggered by pre-defined metrics. In this case, it could be structured around a staggered payout index based on estimated losses assigned to category 3, 4 and 5 storms.

And last but not least: Pandemics

We also shouldn’t forget about other tragic events such as pandemic outbreaks, which may diminish the number of people actually able to come to work. As sad as this sounds, it has happened before.
Conclusion: the key advantages of parametric solutions

Economic advantages
The losses described in these examples can be complicated, sometimes requiring months if not years to sort out. Often, many companies are affected, further muddying the process. If companies project estimated losses and cash flow strains, and consider the cost of emergency financial measures such as additional leverage or reduced dividends to shareholders – on top of escalating natural catastrophes – they could find parametric solutions are valuable investments against capital and performance volatility.

With fast returns to liquidity, companies are better equipped to recover, and even outperform local peers. Finally, pay-outs aren’t limited to rebuilding damaged assets – they can be allocated at will (and even be used to help workers and their families in the case of pandemics).

Inclusion of other business units
What’s also important to remember about parametric solutions is that they call for a new way of looking at insurance: forward rather than backward, and with a wider group of stakeholders. By including different business units and the CFO, we can gain a well-rounded understanding of profit streams, cash flows and their interdependencies. Identifying external events that could disrupt them, and the ways to protect against them, becomes easier.

Swiss Re Corporate Solutions is committed to being part of that knowledge exchange and education process. This is our way of insuring the future and evolving long-term partnerships of trust with our clients. To the end, we want to be there for our clients – and risk managers are the enablers.

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