

REVIEW / ASSESS
IS IT TIME FOR A NEW APPROACH?

Joe Hinzer, President, Watts, Griffis & McQuat



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Thank you for inviting me to speak at your meeting this afternoon.

As everyone is aware, we are in the fourth year of one of the most extensive industry downturns which started late in 2011 and shows no signs of letting up in the near term.

The previous downturn was largely triggered by extensive fraud, and the mining industry and regulators responded quickly with the development of reporting standards by major mining country jurisdictions such as JORC, NI 43-101 and SAMREC codes etc.

While some investors had turned to other sectors such as "IT" the implementation of the increased transparency and standardized reporting requirements of the gradually rebuilt investor confidence.

Recovery from the current downturn may not be as easy.

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Chart 1: US companies with high economic exposure to Emerging Markets at 12-year lows vs broad US equities



Source: BofA Merrill Lynch Global Investment Strategy, MSCI
Note: relative total return

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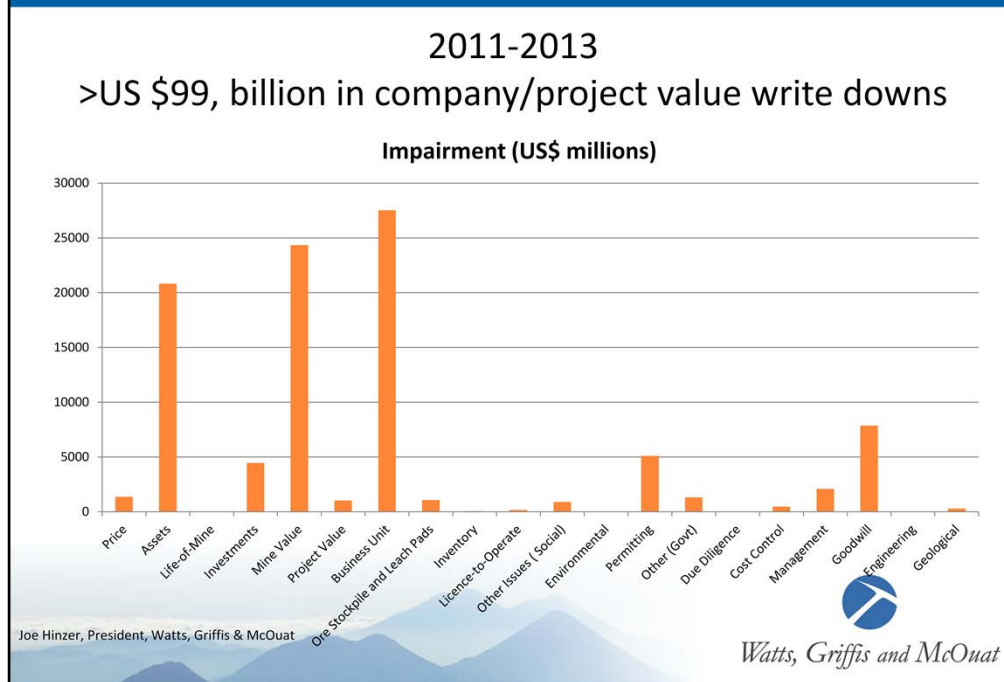
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This chart although not purely tracking commodities is reflective of the emerging market economies which are primarily resource economies.

This chart also shows the growth during the decade from 2002-2011 reflective of the minerals industry leading what has been called the super cycle. Even the financial meltdown of the US banking system in 2008 did not slow down the growth. The rebound after 2008 the Super Cycle seemed to gain even more momentum fueled by the benefits of quantitative easing --- producers were thriving --mineral commodity prices seemed to keep going up and up with no end in sight.

However as we can see from this chart since 2011 many of these equities declined significantly reflective of what we have seen with mining issuers who have recorded significant write downs and for some issuers this is still the case.

Slowed growth in China, has been given as one of the main reasons for low commodity prices, leading to reduced investment in the industry



WGM’s review of 59 public mining industry company disclosures during 2012-2013 noted that most of the largest impairments were for Assets, Mine Value and Business Units and Goodwill, in other words –the value placed on operations that were unable to deliver as expected or forecast.

We also note that Permitting delays was the greatest external factor that affected value.

Price, social factors and government actions were given as minor reasons.

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2011-2013

A Bloomberg Index of the 14 large gold miners at the end of 2013 showed that they had lost about US\$164 billion in market value since gold peaked on September 6, 2011 (Mining Review.com);

MAC reports 41% reduction in exploration expenditures 2013

2014-2015

>US\$ 70 billion in impairment losses reported by KPMG for 2014,

"At the peak of the boom, the market value of the mining sector was \$2.3-trillion. Today, it is worth less than half of this..." (Mark Bristow Feb 2015)

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Bloomberg reported even more dramatic losses for the 2011-2013 period.

In addition to these write downs MAC also noted a decline in exploration expenditures of 41% in 2013 and indicated further drops were expected in 2014 and 2015.

KPMG's 2014 survey reports similar write downs due to -change of plans resulting from ---project delays ---suspensions or ---cost increases

Depending on whose numbers are used more than \$250 billion had been written off by mining issuers between mid 2011 and the end of 2014.

Although the write downs have slowed they continued into 2015 and commodity prices show little signs of recovery.

Is it any wonder with write downs like these numbers that shareholder and investor confidence has been seriously eroded.

The current world of almost instantaneous news appears to only increase the jitters, as did the recent Stock market turmoil reported from China a few months ago.

WHAT HAPPENED

Demand Side;

--Forecasters, Analyst remain bullish on commodities

--issuers were competing for investor money

--shareholders demanded

-ever higher returns

-and shorter time frames

Management –applied Aggressive Assumptions instead of
Conservative Experience

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So what happened this time and why is it different.

Let's look more closely at the events leading up to the market collapse in 2011.

On the demand side,

-Forecasters and analyst were bullish based on the observed global urbanization and industrialization drive

--mining companies were competing for investor money

--shareholders demanded

-ever higher returns

-and shorter time frames

Management struggled to keep up, and the highest polish possible was put on the proverbial apple. Project proponents pushed aggressive time lines, best case scenarios cost projections and deliveries were promised to retain shareholder loyalty.

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April 2013 forecast

Exhibit 23: Key commodity price forecasts

Commodity forecasts	2013	2014	2015	2016	2017	LT
Gold (US\$/oz)	\$1,580	\$1,498	\$1,420	\$1,400	\$1,380	\$1,300
Silver (US\$/oz)	\$28.45	\$27.20	\$26.80	\$25.90	\$25.10	\$22.80
Copper (US\$/lb)	\$3.39	\$3.03	\$2.81	\$2.86	\$3.08	\$3.00
Zinc (US\$/lb)	\$0.98	\$1.06	\$1.27	\$1.13	\$1.00	\$0.86
Lead (US\$/lb)	\$1.05	\$1.22	\$1.36	\$1.27	\$1.09	\$0.91
Iron ore fines - 62% (China CFR) US\$/t	\$125	\$100	\$90	\$90	\$95	\$90

Source: Credit Suisse commodities team

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Even this 2013 forecast from Credit Suisse is still optimistic in light of today's reality

However there is also another side to this equation.

WHAT HAPPENED

Supply Side :

Resource nationalism
Duty to consult
Social license
Land use/access
Indigenous-small scale artisanal miners

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On the supply side,

-- foreign governments saw companies getting rich --and they wanted a bigger share,

--local communities were concerned about the environment and wanted to receive more benefits from such projects than they were provided by federal governments resulting in land use and access issues.

--indigenous, artisanal workers and small scale miners wanted to participate and often interfered with operators.

-the duty to consult became mandatory

All of these factors combined leading to project start up problems as permits were delayed and access was obstructed and the "social licence" was denied.

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The following headlines from Mining Weekly speak to the desires of governments to draw increasing benefits from the mining sector,

[Zimbabwe threatens to reimpose platinum tax if miners don't process locally](#) Oct 16, 2015

[Zimbabwe proposes 10% black empowerment tax – State paper](#) Oct 5, 2015

Last Year Indonesia introduced local processing regulation for producers and many other jurisdictions are looking to take similar actions.

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Lets look at some of the other factors affecting the current minerals industry. Governments in some developing countries are looking for a greater share of the profits to be derived form their natural resources; Zimbabwe for example—wants local processing- to build secondary industry , get more employment, and greater revenue flows And they want the resources being exploited by foreign countries to pay for the indigenization program Indonesia has enacted similar local processing rules

THE RECOVERY PATH

CUT COSTS

Innovation
Increased Mechanization
Operational efficiencies

FLIGHT TO QUALITY

Increased Due Diligence
Better Management
Staff Quality

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So where do we go from here?

The operators response to rebuild shareholder value and confidence has consisted of a combination of;

- costs cutting - to try and increase returns on investments (increase share value)

And

- and improving project quality through increased QA/QC with increased disclosure and transparency requirements

While both positive and a necessary aspect of any good and sustainable operation --will these be sufficient to bring us back to a more normal – business as usual conditions --

---after almost a full year of implementation these two actions seem to have had little or no impact in fact the effect may be regarded as counter productive by some –at least in the short term

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The minority Economic Freedom Fighters (EFF) political party on Tuesday called for **the nationalisation of South Africa's mines without compensation, noting that the State should own and control a minimum of 60% of the country's mines.**

...the political party demandedto start a *process of transfer of wealth to the rightful owners.*
...the EFF marched in Johannesburg to call for an immediate end to and moratorium on retrenchments of workers in all mining companies,
We expect each and every mining company to respond to the demands we are making and propose a concrete programme of action on each and every aspect of these demands.

"[On] failure to do so within 30 days, the EFF and the people of South Africa will target individual mines and close their operations until they come with commitments to meet our demands,"

27th October 2015 By: Megan van Wyngaardt Creamer Media Contributing Editor
<http://www.miningweekly.com/article/eff-makes-radical-demands-for-turnaround-in-mining-industry-2015-10-27>

[Volatility spikes may be unintended consequence of EU commodities rules](#) October 5, 2015 Mining Weekly

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Cost cutting—often leads to loss of employment –while it reduces costs for the company – it impacts the local communities.

Unless properly managed this can actually lead to greater social unrest with all its manifestations and project delays.

The current mine union labour problems in South Africa are a good case in point.

The push to higher quality and greater transparency and regulation while providing greater assurance to investors will result in greater cost to operators further delaying any potential recovery– we see from this Reuters (Oct 6, 2015) report about unexpected consequences of a new EU commodity trading rules- designed to increase transparency –which actually reduced liquidity.

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Meanwhile Wood Mackenzie reports in a biv.com article (22/10/2015) that the current actions of the global mining industry –could be paving the way for a major supply shortage in the next decade- suggesting a \$US 150 billion investment is needed to avoid the shortage.

These sentiments were also reported in mining weekly Oct 15, 2015 by Amec CEO Simon Bennison, who noted that the discovery rate in Australia is not keeping pace with depletion of existing mines.

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Wood Mackenzie and AMEC see note some of the potentially negative aspects resulting from the current corporate cost cutting and flight to quality route many corporations are pursuing.

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Simon Rees (creamer media correspondent) reported on Oct 20th, 2015 on a presentation by Kate Lyons (Goodman Partners)

Noting that major Banks now engage CSR officers to review projects— primarily in response to bank shareholders demands.

Not only –is financing for such projects as
-mountain top removals (for coal mining), illegal timber cutting, oil sands etc.
being restricted or at risk;

CSR concerns for all types of projects are carefully reviewed as

CSR failures can be costly and large scale projects (\$3-5 billion) can loose up to \$20 million per week –as a result of project delays

Not to mention the cost of legal challenges.

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Investors on the other hand are becoming more Risk averse.

Banks, the traditional lenders to the mining industry find themselves caught between their public image and their investment actions.

This recognition of the importance of CSR to customers has led to a number of changes in how banks look now at projects.

Mining industry is 'basically bust' – Bristow

<http://www.miningweekly.com/article/mining-industry-is-basically-bust-bristow-2015-02-10>

handicapped by its short-term culture,

Commodity prices won't return to past high levels – Bristow

2015-10-13

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Headlines like these –while based on Africa, are reflective of the entire industry and pose the question as to where do we go from here.

THE NOW

Shifting global economic power dynamics

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We are experiencing a transition to a new global balance of power and restructuring of economies;

While the US is still the #1 economy its policy of unfettered Capitalism has come under review after the 2008 financial meltdown as banking and disclosure rules are tightened.

China the current (second largest and growing) economy operates on a planned economy and reviews and sets macro social/administrative and economic policies every five years – best described as “planned –capitalism”.

In some sectors China has already taken the lead.

ARCADIS reported in informed infrastructure on Oct 21, 2015, that based on the value of building and infrastructure China now leads the world with \$US47.6 trillion, (9% of GDP) as compared to \$US 36.8 trillion for the US the previous leader.

Macro Economics

Professor Zhou Shijian-Senior research fellow Sino-US Relations Research Centre of Tsinghua University

2008 –US banking collapse ---QE by \$US -10.6 Trillion

plus

2013 –EU banking sector difficulties -----EU and Japan QE \$US ?

He estimates 9.2 Trillion – flowed to emerging economies

to be paid back at higher interest rates

2016-2030?-Emerging market challenges

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I have the opportunity to hear one of China's leading economist speak at the Lead and Zinc Conference in Xian earlier this month.

The previous stimulus and the recent pull back has created an over capacity in the market which now needs to be dealt with.

Approximately 4 trillion of QE by China targeting future infrastructure will assure stability for at least the next 3 years in order to try and re-balance the economy.

With a goal to by 2020 to have the RMB free trading and the Capital markets completely open

We also expect that by that time China will be the No1 economy in the world.

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We see some positive indicators –From China -

-- April, 27th 2015 Mining weekly , China announced a new commodity supper highway with the development of the Silk Road route to Central Asia country. Mining Journal expanded on the story in October.

The recently created Asia Infrastructure Investment Bank “AIIB” has been created in part to help with development in the region. More than 57 countries have signed on so far –of note Germany is the 4th largest contributor.

OPPORTUNITIES

GFMS raised its gold price forecast
New Gold Rainy River project –on time/on schedule
China expects increased base metal H2 2016

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- July 29, 2015 -GFMS raised its gold price forecast to \$US 1,175/oz for the 4th quarter of 2015 (let's see).
- September 16, 2015 reported the New Gold Rainy River project –as being completed on time and on schedule.
- October 13, 2015 Reuters reported that China expected to see an increase in base metal demand in the second half of 2016

THE NOW

John Poley (Reuters Breakingviews/Thompson ONE April 28, 2015 reports on China's plans to merge SOE's to reduce the number to 40 larger enterprises –fewer and bigger –Is bigger better??

Zimbabwe according to Mining Weekly (July 31, 2015) is reducing royalties to small scale gold miners (artisanal miners) to encourage production. The artisanal mining sector is seen as means of providing employment to a significant number of people and to encourage entrepreneurs.

Many countries in Africa, South America have strong vibrant mining sectors that operate privately and often contribute significantly to the local economy.

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Not surprisingly we see some interesting contradictions on how different governments are looking to boost their economies.

Ranging from the MEGA scale in China to the MICRO scale in many smaller countries.

On one side –we have China –consolidating SOE's to improve their competitiveness and in the belief that Bigger is Better.

The opposite extreme is seen from Zimbabwe as the government is reducing royalties to small scale and (artisanal miners) to encourage their productivity. Other African and South American countries are reducing barriers to small scale mines and encouraging private companies to increase the country's output –and reduce unemployment and encourage entrepreneurs.

THE NOW

ZIMBABWE

Legitimizing Artisanal and Small-Scale Mining (ASM) in Zimbabwe

ASM is estimated to provide a direct livelihood for upwards of one million Zimbabweans. Since 2014, the government has decriminalized ASM, and the Ministry has prioritized cultivating legal trading channels. Meanwhile, private players are already embracing the ASM integration initiative. |

Meredith Veit

GBRoundup - MINING - November 11th 2015

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Lets take a closer look at the artisanal and small scale mining

Artisanal Gold Production Africa

Ghana	Sudan	Burikina-faso	Mali	Tanzania	DRC (DRC)	Ethiopia
2013	2014	2012	2013	2013	2013	2013
43.3 tonnes	70 tonnes estimated	27 tonnes	20.7	1.1 tonnes	10 tonnes estimated	8.3 tonnes
1m miners	500,000	200,000	1 million	800,000	?	350,000+
	60% of export revenue. Estimated 25% production smuggled out	Only 500kg moves through official supply chain			Official Production 181 kg USGS estimates 98% illegally exported	

ETHIOPIA INTERNATIONAL MINING CONFERENCE

23-24 SEPTEMBER 2015 ~ ADDIS ABABA, ETHIOPIA

Dr. Girma Woldetinsae, Research and Development Directorate, Ministry of Mines, Ethiopia

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As we can see from this table showing estimated production in 2013 /2014.

About 180 tonnes –180,000kg

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5.7million oz about 1.4 oz/person

Many other countries not shown also have artisan production



Photo J Hinzer Zamfara State Nigeria, 2010

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Artisanal mining in Nigeria

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Global artisanal Gold Production

Gold council data (2015):

•2011

World Artisanal Gold Production (source Telmer 2011 AGC):

–330 Tonnes of Gold 12 % of the total production roughly \$330 billion USD
at\$1500/oz

–10 million miners probably engaged

•.2012

–400 tonnes gold from 70+countries 15% of the production %20 billion USD

–15 million direct and 100 million secondary economy

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Collectively we can see the importance of artisanal and small scale mining both from the perspective of gold production –400 tonnes [~12.5million oz] and for the employment of more than 15 million people.

FUTURE

Government Industry Partnerships
Shared Infrastructure
Collaboration between Industry Participants
Innovation
Innovative Financing
Different approaches to Small Scale Mines

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Royalty streaming –works for producers or those about to go into production

Crowd funding –may work best for start ups or earlier stage explorers

The recent Excellon financing successfully combined a number of elements

FUTURE

Sharing infrastructure with neighbouring mines to cut costs

collaboration across the broader industry, particularly between miners and services companies,

increased collaboration between industry participants

junior mining executives need to innovate to find solutions

innovation also had to extend to capital raising,

look to partnerships between companies and governments.

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On a more realistic and positive note here are some thoughts on the possible future directions for the exploration and mining industry as access to land becomes more restricted and interactions between corporations, governments and society increase exponentially.

--EY suggests sharing infrastructure, and or consolidation of juniors as a means of going forward.

--Grant Thornton for Australia indicates maximization of expenditure benefits by collaboration between industry participants and stresses the importance of innovation in general and especially innovation in fundraising.

-- Mark Bristow of Randgold—notes that—industry needs to undergo a major re-invention and needs to,

-"dispense with short term culture" and -look to partnerships between companies and governments.

FUTURE

For any mine to be a successful venture, it required infrastructure such as roads, ports, railways and power grids to operate, which were often not available in the remote and northern regions of Canada.

These areas held significant opportunities for mining development and would provide significant socioeconomic benefits to northern communities.

"The government can advance this nation-building opportunity and meet its stated policy objectives for the North by creating the right fiscal framework to stimulate investment in critical infrastructure that mines and communities will both benefit from," Gratton said.

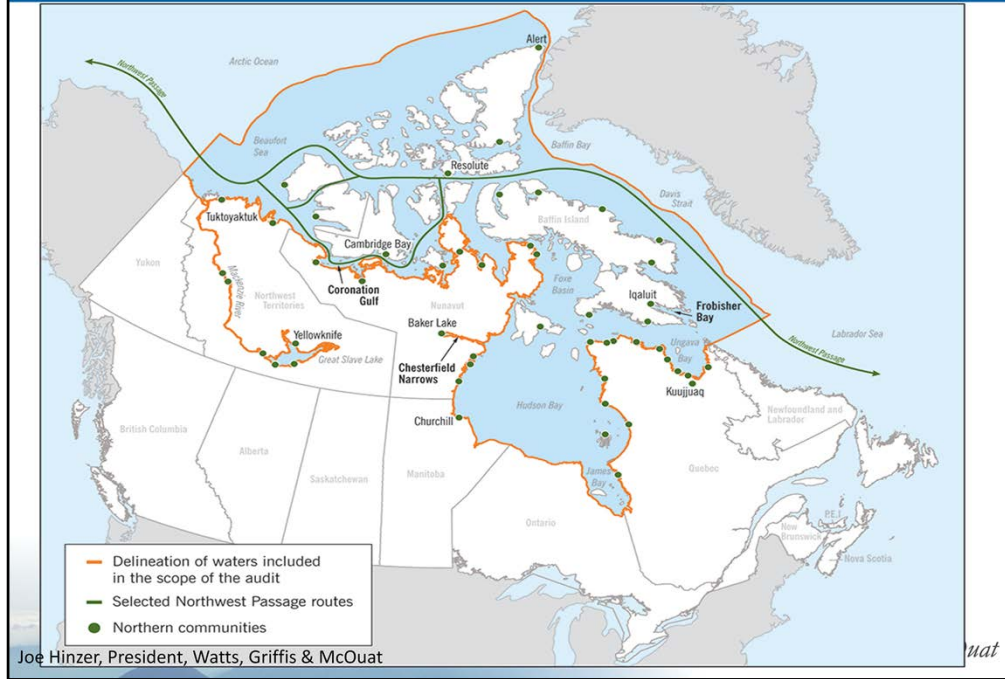
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--MAC has stressed the importance of infrastructure in remote areas

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Perhaps extending such corporate-government collaboration between all aspects of the government including the military could be a boon to exploration and development of remote projects in Canada .

FUTURE

New Crowdfunding Regime

Ontario, Manitoba, Québec, New Brunswick and Nova Scotia (collectively, the Jurisdictions), to provide reporting and non-reporting issuers with a crowdfunding prospectus exemption and a registration framework for the operation of a funding portal. On November 5, 2015, the securities regulatory authorities in the Jurisdictions published [Multilateral Instrument 45-108 Crowdfunding](#) (the Rule) in final form, which is expected to come into force on January 25, 2016.

The Rule is intended to provide another way for start-ups and small and medium-sized enterprises to raise capital more effectively and at a lower cost, while protecting investor interests.

the total proceeds must not exceed \$1.5 million within the 12-month period

- (a) for an investor that does not qualify as an accredited investor
 - (i) \$2,500 per investment, and (ii) in Ontario, \$10,000 in total for all investments in a calendar year;
- (b) for an accredited investor other than a permitted client
 - (i) \$25,000 per investment, and (ii) in Ontario, \$50,000 in total for all investments in a calendar year
- © in Ontario, none for a permitted client (e.g. net financial assets exceeding \$5 million)

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Regulators have started to facilitate innovative financing.

Governments should consider a new less regulated and stringent approach to encourage small scale private mines that have a small limited footprint.

Banks should also be encouraged to support Innovative companies/projects

FUTURE

Government Industry Partnerships
Shared Infrastructure
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Innovative Financing
Different approaches to Small Scale Mines

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“The only thing we can be certain about is uncertainty. The commodities price situation is simple. It is going to remain volatile for the foreseeable future,” stated Bristow. ☐☐

cannot be seen as a viable industry unless it undergoes a major reinvention,

To summarize –we need to look at new ways of doing things

Thank You



Thank you for your time.