

LIVE VIRTUAL COMMITTEE MEETING

*The Committee meeting will be held following the Credit and Risk Mitigation Committee Meeting OR after the Board of Investments meeting .



TO VIEW VIA WEB



TO PROVIDE PUBLIC COMMENT

You may submit a request to speak during Public Comment or provide a written comment by emailing PublicComment@lacera.com. If you would like to remain anonymous at the meeting without stating your name, please let us know.

Attention: Public comment requests must be submitted via email to PublicComment@lacera.com.

LOS ANGELES COUNTY EMPLOYEES RETIREMENT ASSOCIATION
300 N. LAKE AVENUE, SUITE 650, PASADENA, CA

A SPECIAL MEETING OF THE REAL ASSETS COMMITTEE OF THE
BOARD OF INVESTMENTS*

LOS ANGELES COUNTY EMPLOYEES RETIREMENT ASSOCIATION

300 N. LAKE AVENUE, SUITE 810, PASADENA, CA

8:00 A.M., (PART 1 – At any time thereafter but before 9:00 AM., following the Credit and Risk Mitigation Committee Meeting preceding it), and

9:00 A.M. (Part 2 – At any time thereafter following the Board of Investments meeting preceding it)

WEDNESDAY, AUGUST 11, 2021

This meeting will be conducted by teleconference under the Governor’s Executive Order No. N-29-20.

Any person may view the meeting online at
https://members.lacera.com/lmpublic/live_stream.xhtml

The Committee may take action on any item on the agenda, and agenda items may be taken out of order.

I. CALL TO ORDER

II. APPROVAL OF MINUTES

A. Approval of the Minutes of the Real Assets Committee Meeting of June 9, 2021.

III. PUBLIC COMMENT

(Written Public Comment - You may submit written public comments by email to PublicComment@lacera.com. Correspondence will be made part of the official record of the meeting. Please submit your written public comments or documentation as soon as possible and up to the close of the meeting.

Verbal Public Comment - You may also request to address the Committee. A request to speak must be submitted via email toPublicComment@lacera.com. We will contact you with information and instructions as to how to access the meeting as a speaker. If you would like to remain anonymous at the meeting without stating your name, please let us know.)

August 11, 2021

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IV. REPORT

- A. Overview of Mining Allocation
James Rice, Principal Investment Office
Mark White, Head of Real Assets
(Memo dated August 1, 2021)

V. ITEMS FOR STAFF REVIEW

- VI. GOOD OF THE ORDER
(For information purposes only)

VII. ADJOURNMENT

****The Board of Investments has adopted a policy permitting any member of the Board to attend a standing committee meeting open to the public. In the event five or more members of the Board of Investments (including members appointed to the Committee) are in attendance, the meetings shall constitute a joint meeting of the Committee and the Board of Investments. Members of the Board of Investments who are not members of the Committee may attend and participate in a meeting of a Committee but may not vote, make a motion, or second on any matter discussed at the meeting. The only action the Committee may take at the meeting is approval of a recommendation to take further action at a subsequent meeting of the Board.***

Documents subject to public disclosure that relate to an agenda item for an open session of the Board of Retirement that are distributed to members of the Board of Retirement less than 72 hours prior to the meeting will be available for public inspection at the time they are distributed to a majority of the Board of Retirement Members at LACERA's offices at 300 N. Lake Avenue, Suite 820, Pasadena, CA 91101, during normal business hours of 9:00 a.m. to 5:00 p.m. Monday through Friday.

Requests for reasonable modification or accommodation of the telephone public access and Public Comments procedures stated in this agenda from individuals with disabilities, consistent with the Americans with Disabilities Act of 1990, may call the Board Offices at (626) 564-6000, Ext. 4401/4402 from 8:30 a.m. to 5:00 p.m. Monday through Friday or email PublicComment@lacera.com, but no later than 48 hours prior to the time the meeting is to commence.

MINUTES OF THE REGULAR MEETING OF THE REAL ASSETS COMMITTEE AND
THE BOARD OF INVESTMENTS

LOS ANGELES COUNTY EMPLOYEES RETIREMENT ASSOCIATION

300 N. LAKE AVENUE, SUITE 810, PASADENA, CALIFORNIA 91101

8:00 A.M., WEDNESDAY, JUNE 9, 2021

This meeting was conducted by teleconference pursuant to the Governor's Executive Order N-29-20. The public may attend the meeting at LACERA's offices.

PRESENT: Patrick Jones, Chair
Alan Bernstein, Vice Chair
Keith Knox
Gina Sanchez
David Green, Alternate

MEMBERS AT LARGE:

Herman Santos
Elizabeth Greenwood

STAFF, ADVISORS, PARTICIPANTS:

James Rice, Principal Investment Officer
Daniel Joye, Investment Officer
Amit Aggarwal, Investment Officer

StepStone Real Estate (SRE)
Jeff Giller, Partner
Margaret McKnight, Partner
Tom Hester, Managing Director
Anja Ritchie, Principal

I. CALL TO ORDER

The meeting was called to order by Chair Jones at 8:00 a.m. in the Board Room of Gateway Plaza.

II. APPROVAL OF MINUTES

A. Approval of the Minutes of the Meeting of October 14, 2020.

Ms. Sanchez made a motion, Mr. Bernstein seconded, to approve the minutes of the regular meeting of October 14, 2020.

The motion passed unanimously (roll call) with Messrs. Knox, Bernstein, Jones and Ms. Sanchez voting yes.

III. PUBLIC COMMENT

There were no requests from the public to speak.

IV. NON-CONSENT

A. Real Assets Co-Investment and Secondaries Recommendation
James Rice, Principal Investment Officer
Daniel Joye, Investment Officer
(Memo dated May 28, 2021)

Mr. Bernstein made a motion, Ms. Sanchez seconded, to advance the Real Assets Co-Investment and Secondaries to the Board of Investments with an increased annual investment amount of \$250M.

The motion passed unanimously (roll call) with Messrs. Jones, Bernstein, Knox, Green, and Ms. Sanchez voting yes.

V. REPORT

A. StepStone Real Estate (SRE) Consultant Presentation

James Rice, Principal Investment Officer

Amit Aggarwal, Investment Officer

Jeff Giller, Partner

Margaret McKnight, Partner

Tom Hester, Managing Director

Anja Ritchie, Principal

(Memo dated May 28, 2021)

Messrs. Rice, Aggarwal and Messrs. Giller, Hester, and Ms. McKnight and Ms. Ritchie of StepStone Real Estate provided a presentation and answered questions from the Committee.

VI. ITEMS FOR STAFF REVIEW

There were no items to report.

VII. GOOD OF THE ORDER

(For information purposes only)


There was nothing to report.

VIII. ADJOURNMENT

There being no further business to come before the Committee, the meeting was adjourned at approximately at 9:05 a.m.

August 1, 2021

TO: Trustees – Real Assets Committee

FROM: James Rice 
Principal Investment Officer

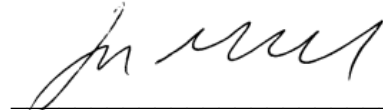
FOR: August 11, 2021 Real Assets Committee Meeting

SUBJECT: **OVERVIEW OF MINING ALLOCATION**

As LACERA considers the implementation of private investments in the natural resources category within Real Assets, an overview of the Mining segment is being provided. Mark White, Albourne's Head of Real Assets, is scheduled to provide this overview of private investment opportunities in Mining including some potential areas of focus within the segment. The slides for Albourne's presentation are attached.

Attachment

Noted and Reviewed:



Jonathan Grabel
Chief Investment Officer

Mining Allocation Considerations

August 11, 2021



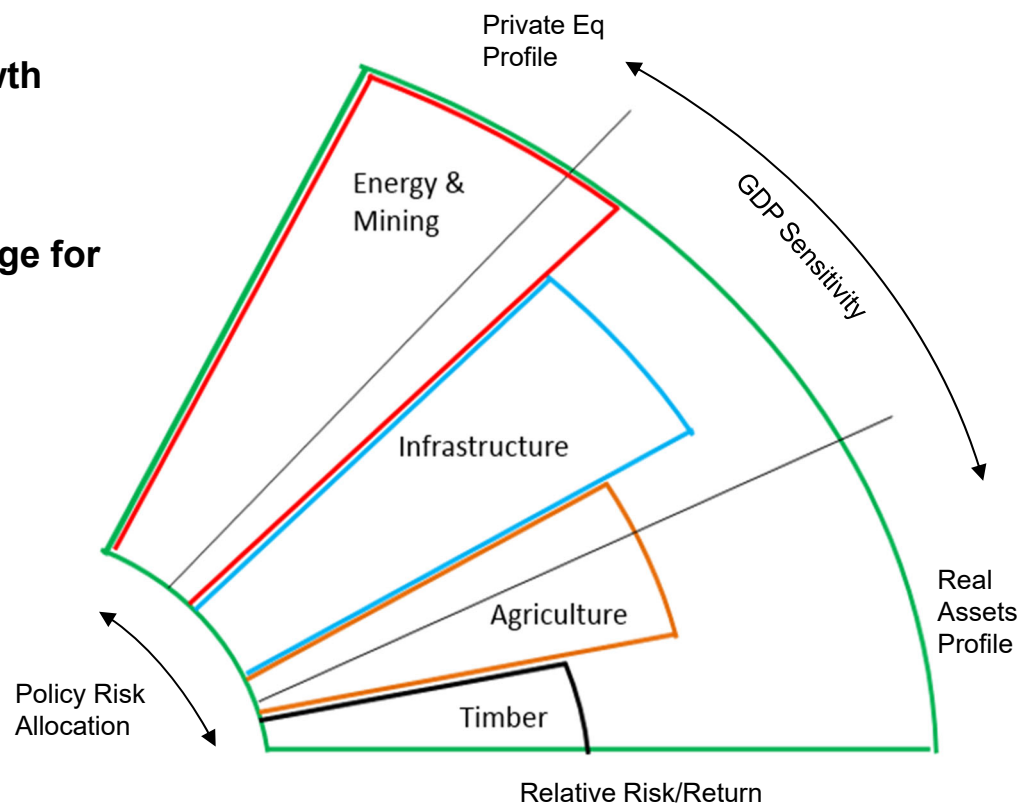
Mining - Portfolio Risk and Strategy Placement

The correlation of commodities to inflation is well established over long time horizons. Over shorter periods the subsectors (Energy, Metals, and Agriculture) may respond in different fashions, but the interrelation between commodities and global growth remains a persistent trend.

- **Mining is a critical input of economic growth**
- **Favourable demographic macro trends**
- **Attractive real asset investment qualities**
- **Lower correlation to other asset classes**
- **Critical to a green transition, thus is a hedge for decarbonization**

Mining is a core position of Real Asset Portfolios

- GDP sensitivity
- Leading inflationary indicator
- Core for economic development
- High barriers to entry
- ESG is a key component of analysis



Commodities and Inflation

LACERA Real Asset portfolio objectives include:

- Inflation protection
- Diversification
- Return enhancement
- Yield

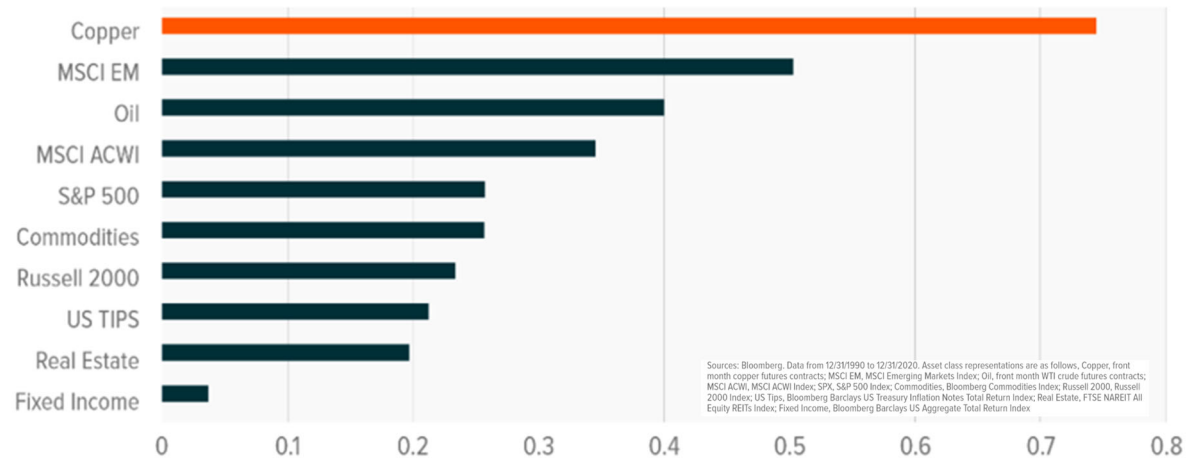
YEAR-OVER-YEAR GROWTH OF BCOM VS. U.S. CPI



Source: Bloomberg, BLS, Dow Jones, FactSet, J.P. Morgan Asset Management. Data reflect most recently available as of 05/10/21.

- Commodities have a high correlation to inflation over full cycles
- Commodity subsectors behave differently
- Historically energy has been a major driver of inflation
- Strategic metals such as copper are trending higher

CORRELATIONS TO 10-YEAR INFLATION (ANNUAL BASIS)



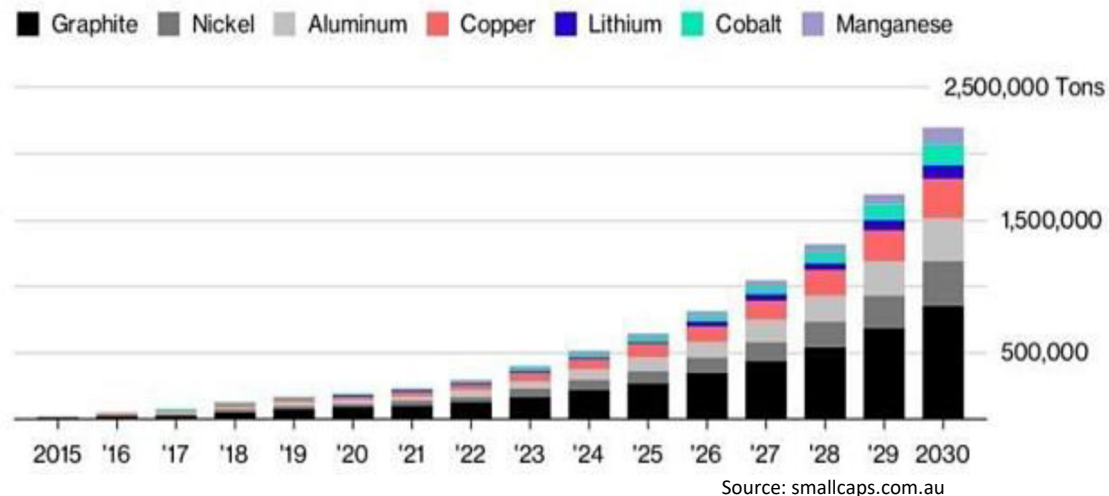
Sources: Bloomberg. Data from 12/31/1990 to 12/31/2020. Asset class representations are as follows: Copper, front month copper futures contracts; MSCI EM, MSCI Emerging Markets Index; Oil, front month WTI crude futures contracts; MSCI ACWI, MSCI ACWI Index; S&P, S&P 500 Index; Commodities, Bloomberg Commodities Index; Russell 2000, Russell 2000 Index; US TIPS, Bloomberg Barclays US Treasury Inflation Notes Total Return Index; Real Estate, FTSE NAREIT All Equity REITs Index; Fixed Income, Bloomberg Barclays US Aggregate Total Return Index

Mining Fundamentals – Implications in Decarbonization

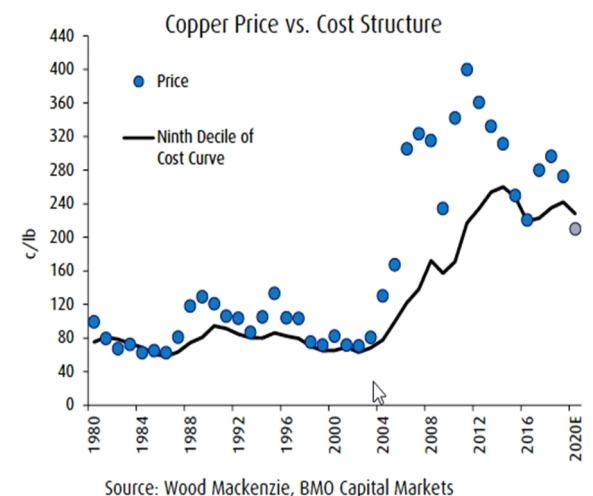
- EVs will **require** on average approximately 83 kgs (183LB) of copper per manufactured **vehicle**
- Currently global copper reserves are estimated at 830 million tons
- Annual copper demand is 28 million tons
 - 1 MW of offshore wind energy requires about 6 tons of copper
 - photovoltaic plant requires about 4 tons per MW generated
- The cost of production is increasing (extraction and reserve quality)
- Copper is 100% recyclable
- Other metals have greater demand for an electrified economy

Metal Winners

Cobalt to lithium demand is forecast to soar as electric vehicle markets expand



For copper, the 90th percentile has worked as a good guide – we are now trading below it



Understanding ESG and Mining

Mining and its ESG relationship is complex

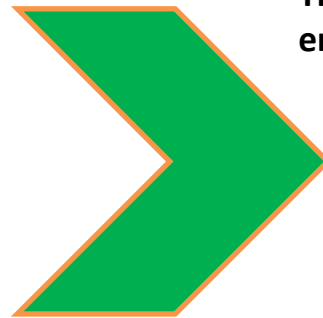
ESG in mining is critical to mining operations

Mining is a 360 process of discovery to reclamation is decades long.

- Mines typically alter the physical landscape
- need a "social license" to operate
- Government regulation addresses E through G to achieve S
- Mining best practices starts with G to protect E and improve S
- The altered landscape is remediated

Public and institutional participation in mining can ensure:

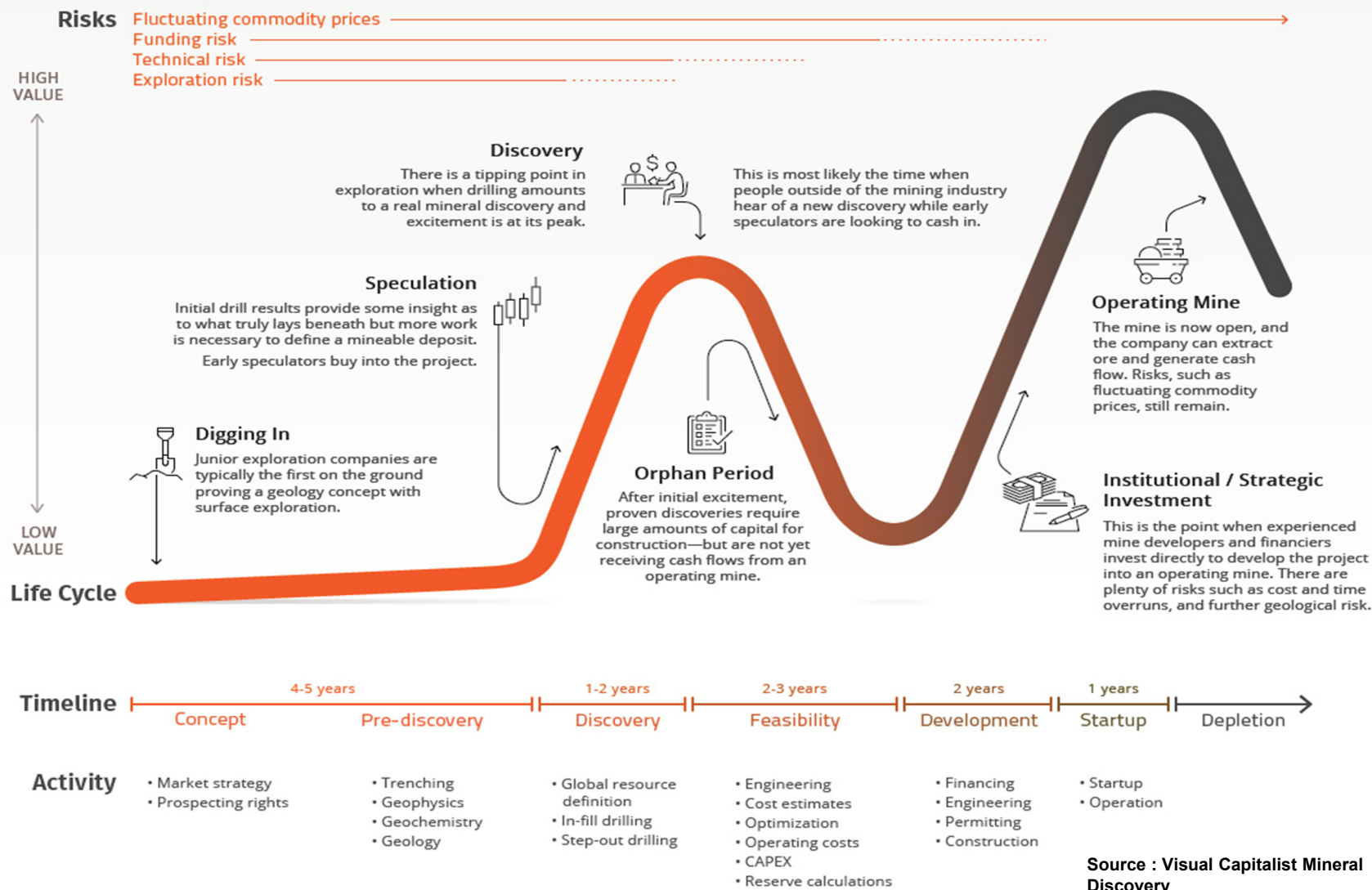
- active engagement
- ethical sourcing of materials
- regulatory consultation
- consumer activism



This can drive a 360 approach for institutional engagement

- Metals and minerals are subject to classic supply and demand considerations
- influenced by social macro trends.
- opportunity for positive institutional engagement

The Mining Cycle – risk and reward potential at stages of the mine's life (10-50 years)






Investment Structures

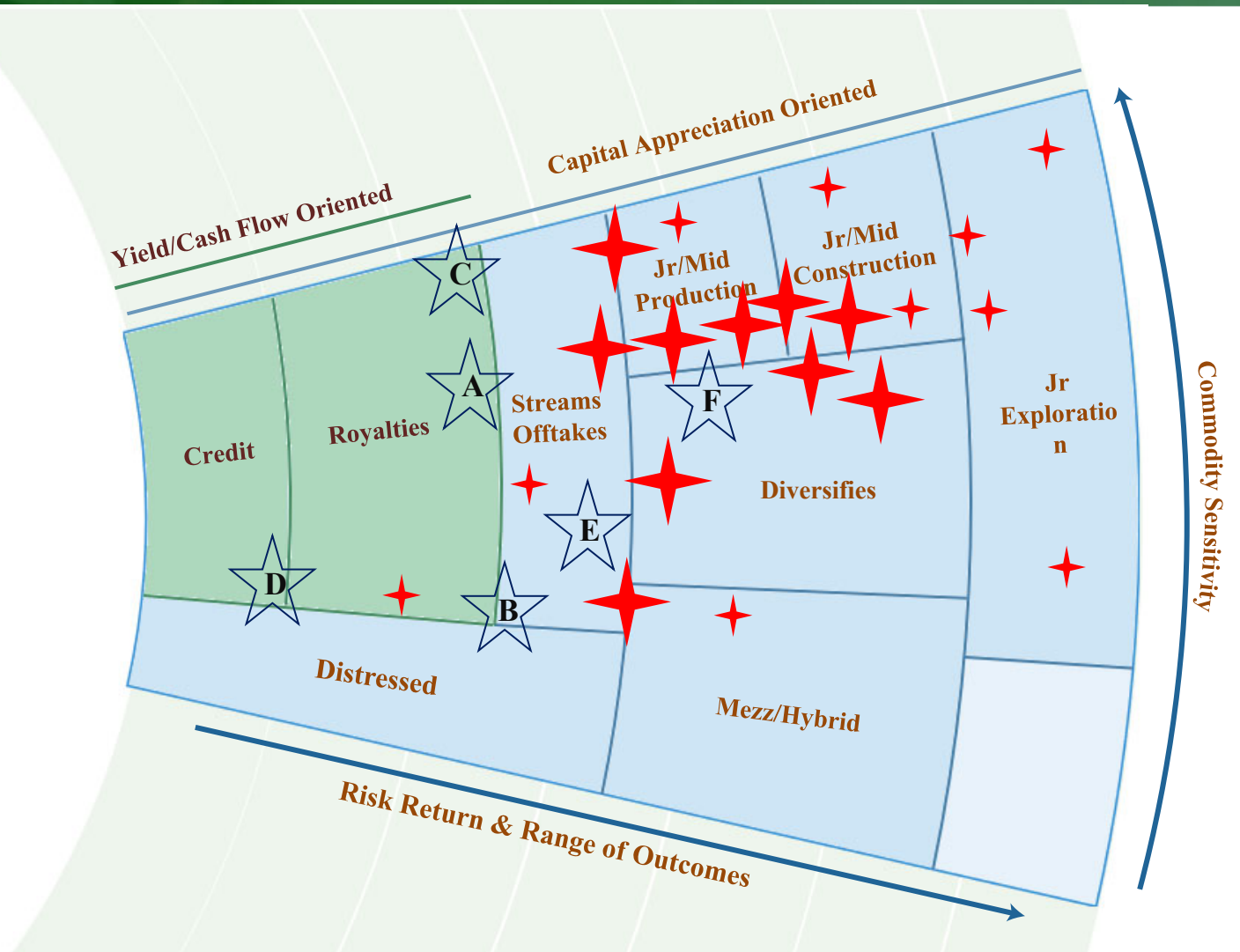
Description		Availability	
		Market Environment	Development Stage
Equity & Equity Linked			
Equity	Most common of all financing structures for mining sector; investors rely on Toronto, Australian and London exchanges	Cyclical recovery, opportunistic	Exploration to expansion
Convertible Debentures	Cheaper form of financing for the issuer, but dilution of equity is an issue if the issuing company realizes large profits	Cyclical, opportunistic	Bankable / Definitive feasibility study (BFS/DFS) onward
Debt			
Project Finance	A lower cost financing alternative to bridge financing gaps as facilities and operations are expanded at near-production assets; project financing by traditional development and specialty banks have been sidelined	Cyclical, opportunistic	Bankable / Definitive feasibility study (BFS/DFS) onward
High Yield and Private/Mezzanine	Higher cost, more accessible form of project finance for non-investment grade issuers	Cyclical, opportunistic	Bankable / Definitive feasibility study (BFS/DFS) onward
Alternative Equity			
Royalty / Stream / Offtake	Alternative way of raising capital when project finance is costly and equity financing is dilutive; attractive in challenging public equity market environment	Counter-cyclical, issuers seek during downmarket	PEA or PFS onward
Private Equity	Private equity funds provide a comprehensive financing package across the capital structure for issuers and can invest at any point in the market cycle	Through mining market cycles	Exploration to expansion

Given the information on Cycles (Macro) we favour the mining development cycle as a lower risk entry

Opportunistic Idea	Structure	Potential Positives	Potential Issues ¹
Mining Financing	1. Closed ended fund with a 4-5 year investment period and 7-10 year fund life	<ul style="list-style-type: none"> • High barriers to entry given the complicated business structures and experience needed to structure off-takes and royalty strategies. • Low correlation to financial markets • Competition in small to mid cap markets is limited • Optionality can be incorporated to capture positive commodity movements 	<ul style="list-style-type: none"> • Exposed to inherently volatile commodity prices/cycles. • Correlation to commodities and other asset classes will vary depending on the amount of equity/ equity like components adopted within the Mining Financing strategy. • Global demand for certain resources. • Limited track records • Potential country risk • Potential concentration risk

Mining Mapping

- Funds over \$500m 
- Funds \$250m - \$500m 
- Funds Considered 



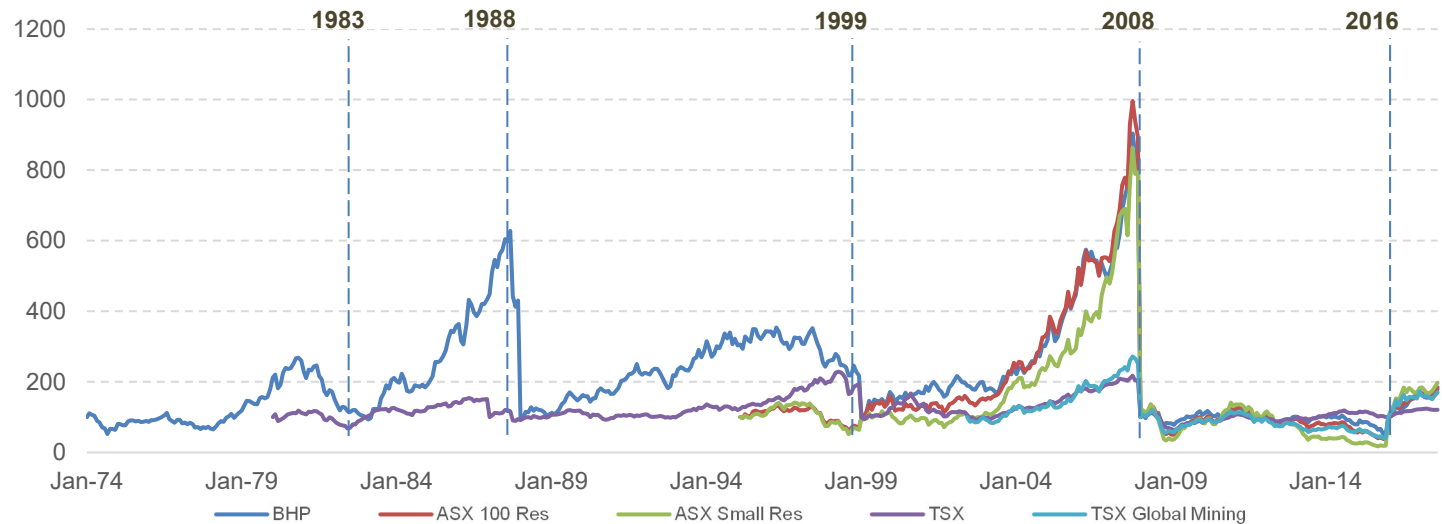


Appendix and Case Study

Mining is a Cycle within a Cycle

Cycles are often taken out of context. The Bull run of 1999 to 2008 referred to as the “China Super Cycle” was tightly correlated to economic expansion that accelerated the mining exploration cycle and several issues that accompany rapid demand growth, but the 1990s left the sector in short supply due to the responses from 1988. the 2014 cycle ended on similar terms 1983 rather than 2008 with respect to global capacity.

Mining cycles 1974 - 2017. Share Price of BHP, the ASX 100 Resources Index, ASX Small Resources Index, TSX Index, TSX Global Mining Index reset to 100 per cent at the start of each cycle. BHP is used as a long term proxy for the mining sector, w



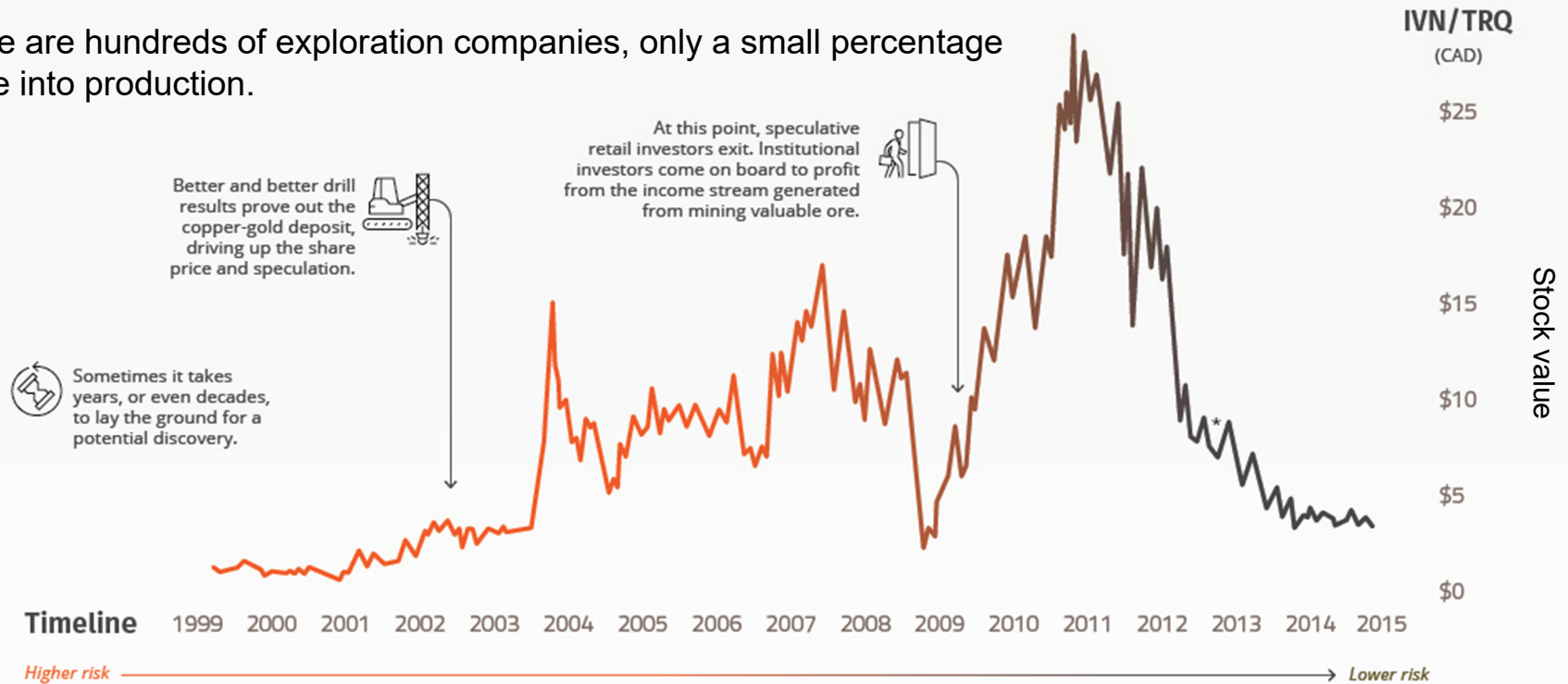
*past performance is not necessarily indicative of or a guarantee of future returns.

Source: Bloomberg

1974 - 1983	1983 - 1988	1988 - 1999	1999 - 2008	2008 - 2016
<ul style="list-style-type: none"> • Korean Industrialization • 1980 gold bubble 	<ul style="list-style-type: none"> • 80s equity speculation • Copper spike 	<ul style="list-style-type: none"> • Early Chinese industrialization • East Asian Currency Crisis • Bre-X fraud 	<ul style="list-style-type: none"> • Chinese industrialization • Mining boom • Global financial crisis 	<ul style="list-style-type: none"> • Economic stimulus • European debt crisis • Commodity markets collapse

Case Study – Real life of a mine through Commodity cycle

There are hundreds of exploration companies, only a small percentage move into production.



Concept

After over a decade of exploration work, then a 21-drill-hole program by mining giant BHP, there was little to show at Oyu Tolgoi.

Pre-discovery

In 1999, mining entrepreneur Robert Friedland took the helm. At this stage, shares in his company, Ivanhoe Mines, were a gamble.

Discovery

In 2000, the first drill results started coming in for Ivanhoe, including a headline result of 590 meters of 1.1 g/t Au and 0.8% Cu from hole 150.

Feasibility

By 2004, it was time to start thinking about building a mine. The first step is to assess project economics, then raise money to build the mine. Two years later, Ivanhoe enters into an agreement with Rio Tinto to develop the mine.

Development

At this time, the Oyu Tolgoi deposit has an estimated:

- 1.2 billion lbs copper
- 650,000 oz gold
- 3 million oz silver

Startup

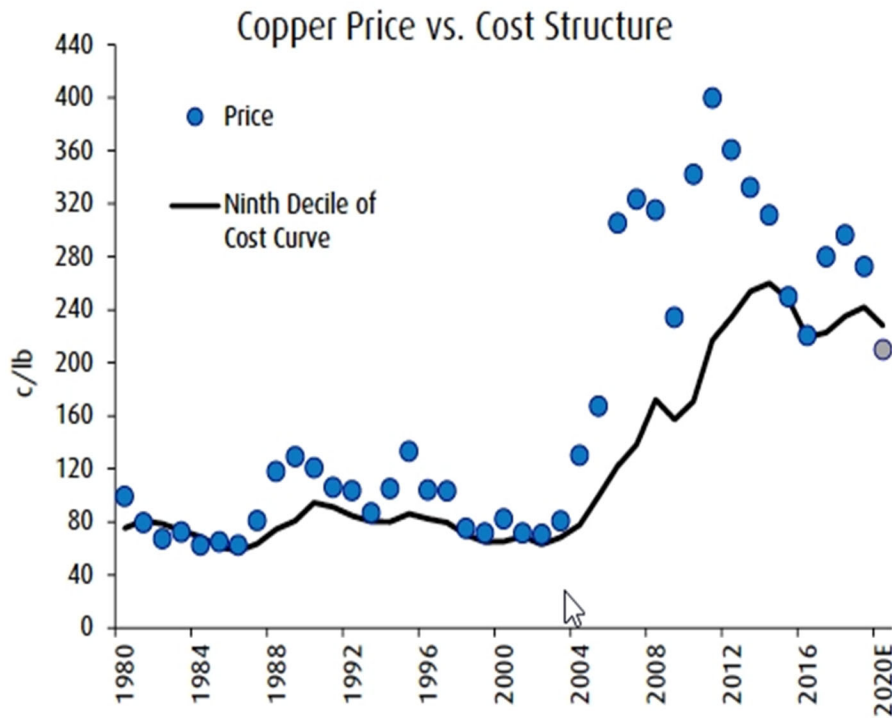
On Jan. 31, 2013, the company announces that it has produced the first copper-gold concentrate from Oyu Tolgoi. Six months later, it is processing up to 70,000 tonnes of ore per day.

Production and Future

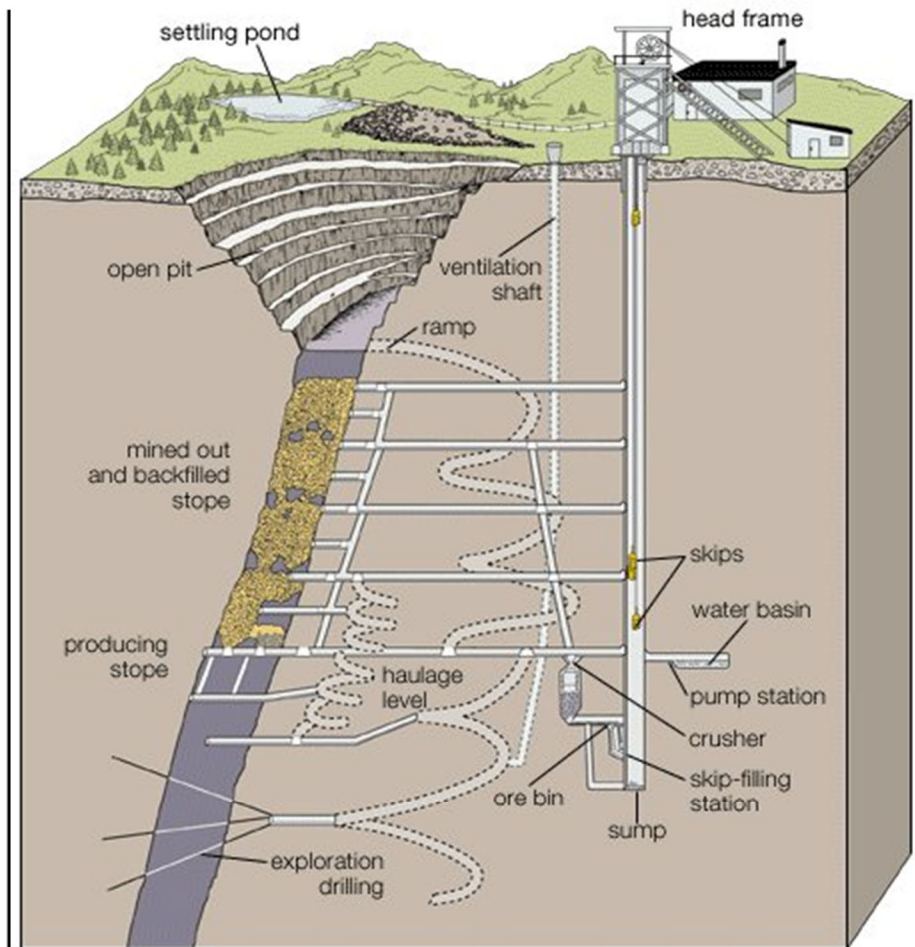
The Oyu Tolgoi deposit will last generations—but there are other risks the deposit faces during operations. These can be anything from labor disruption, mining method problems, or even commodity prices.

What drives the cost of Production?

For copper, the 90th percentile has worked as a good guide - we are now trading below it



Source: Wood Mackenzie, BMO Capital Markets



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