

**CIM-MES:**

**“Fully Cost” All Project Options, or...**

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## *Other Titles Were Considered.....*

- Mining and the “new normal”.....
- When will risk-capital return.....
- Governments abandon mining.....
- Where have all the projects gone.....
- Mining and the Bourne Identity.....
- Buddy, can you spare a billion.....
- The Four Stooges.....

## *Presentation Outline*

- New Terminology- Essential
- A New Industry- Cyclical vs. Structural Shifts; or Both
- Less Capital Means Careful Queuing, and Full-Costing
  - Costs re-grouped: private, public, joint
- An example of a “Strategic Options” decision, from 20k metres
  - Combine the private- and public-cost parameters
  - Add the public-sector process-parameters (also a cost)  
= “Full Costing” maps all costs, for better decisions
- Questions and, hopefully, answers

## *Some New Terminology, Before Starting*

- “Reverse osmosis”- The large are shedding, not buying
- The “double queue”: the queues for public permits and for co-funding
- The “triple-whammy”, or the “false-positive” for shareholders
  - Unrealised high-return expectations
  - Queuing means costs, delays and politics (risk)
  - Depleting metal production not replaced in time by the new
- The Private-Sector Costs (slide 10 for details)
  - All costs on the balance sheet, and in the feasibility studies
- The Joint- and Common-Costs: Seldom assessed
  - All costs that can be shed, shared or pooled (infra, energy, schools, etc)
- The Public-Sector Costs (slide 11 for details)
  - Growing list of costs for governments, who now have deficits

## *The Industry, and the “New Normal”*

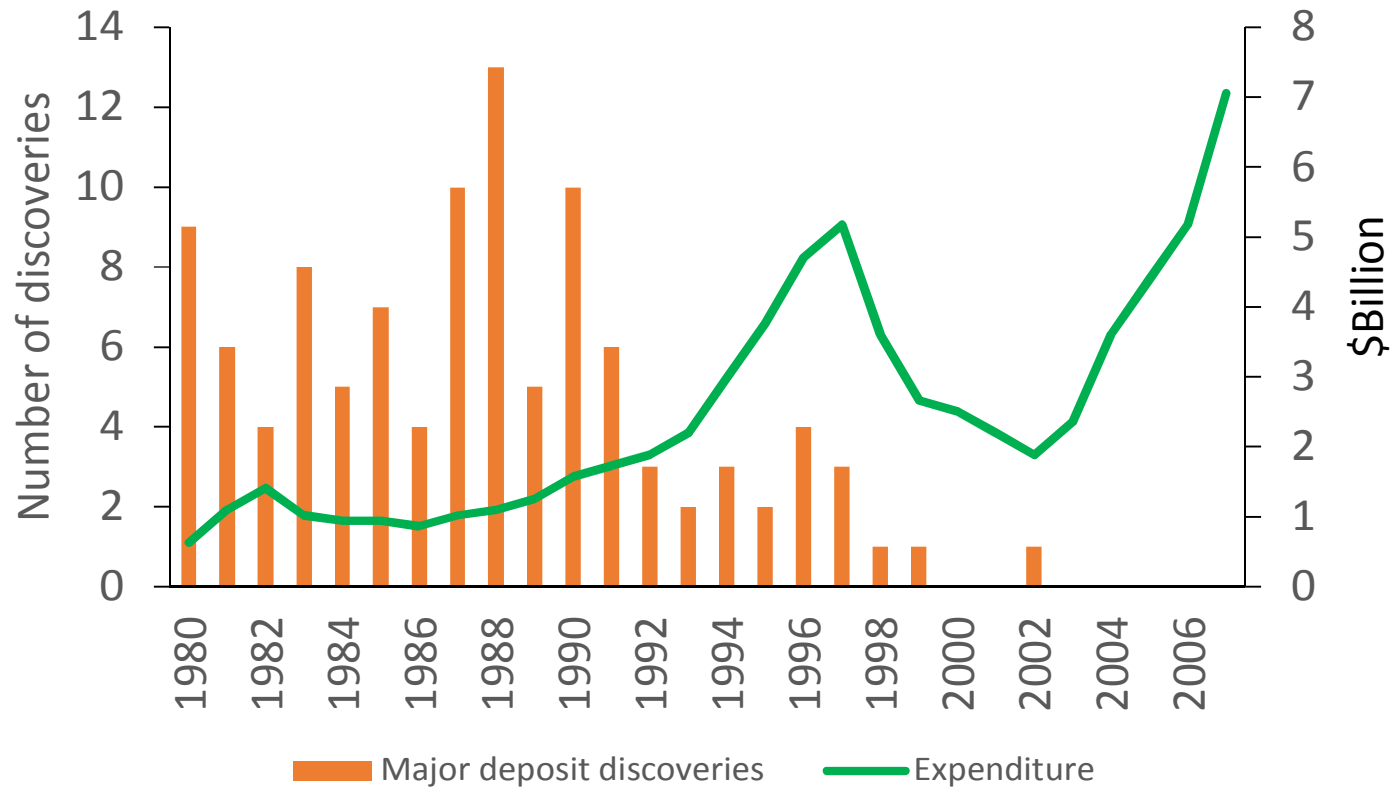
- Old assets being depleted, with growing operating and remediation costs
  - Ore grades continue to slide, compounding issues
- USA rebounding slowly; EU has stalled; Japan now under QE
- Emerging markets growing, but each with its own new model
  - The five BRICS are excellent examples
- Slow global growth and demand, re-cycling making inroads
- New mining projects are fewer, further afield and more complex
  - New major finds increasingly rare (next slide)

**Bottom Line** : Cyclical change underway, w/new amplitude and wavelength  
: Constant asset screening and shedding of existing assets

## *Project Pipeline: A Depletion of Major New Finds*

Graph: Major finds vs. exploration expenditure (Source: UBC: Keevil School)

- Explains M&A rush, need for careful development & new technology



## *The Industry; Capital Now Restructuring*

- Majors provisioned US \$93bn of assets in last two years; heads rolled
  - Institutional investors are not impressed; briefed the SEC
  - SEC re-visits “cash costs”, “Resources”, “feasibility” and...
  - OSC wants to see foreign assets and infra better discussed.....and....
- Banks are hurting with weak balance sheets and cautious economies
- Investors becoming increasingly conservative
  - Tend to pension+health of Boomers til approx. 2026+: a moving target
  - Looking for dividends, not growth or speculation or variances of >10%
  - Industry loses credibility, WACC increases, capital leaves: Gresham's Law
- Public sector not as supportive of frontier projects
  - Public sector has deficits, aging populations; cautious on co-financings

**Bottom Line** : Structural changes two sources recede for 10+ years  
: Must shed assets for cash and/or QUEUE new projects

## *Result: An Industry In “Reverse Osmosis”*

- The Major-Caps: Acquisitions and provisions confused everyone
  - Access to capital markets now limited; investment grade trades as “junk”
  - Majority are shedding assets to raise cash and/or shed debt
- The Mid-Caps- Fewer gaffes mean higher P/E and P/CF ratios
  - Can develop limited new assets and acquire existing assets
  - But imprudent capital structuring can still result in junk-bond ratings
- The Small-Caps- Also have higher P/E ratios and P/CF ratios
  - A limited capacity for new large assets; can buy existing assets
    - Capstone and Silver Standard, for example
- The Juniors: Fewer buyers for new assets; become ‘incubators’
  - Ample 3<sup>rd</sup> party due diligence on geo+ permits to secure “milestone” capital
- **Bottom Line:** Strategically, all must review (i) existing and (ii) new assets
  - : Brownfield projects “crowd out” riskier greenfields



## *Diagnostic of a Project: Forget the Past*

- The Past
  - Majority of companies formed in 1995-2007 period
    - “globalisation” offered up-side on once-discounted assets
  - Non-producing assets re-stated with rising metal prices
    - For a time, distorting the true replacement cost of reserves
  - Public sector had surpluses; was very supportive
    - Permits and infra were mostly “grandfathered” or “sunk cost”
  - Private and institutional investors wanted growth, and got it
- The Future (which is not the past)
  - New assets further afield and need full (aka “sustainable”) cost recovery
  - Public sector not as supportive on traditional role
  - Metal prices flat (lacking cycles); costs rise; projected grades fall
  - Permits, access and politics add complexity for frontier assets
  - Institutional investors want precise performance
    - As well as dividends at 3-4x interest levels

## ***Full Costing: Of All Private Costs Options Essential***

- The Private-Sector Costs and Revenues; What are they?
  - All costs within the perimeter fence/property line
    - “Scale” still reigns, phasing options often forgotten
    - Phasing may bring raise production costs, but lowers hurdle capital
    - Assumption consistency and relevance could add credibility
  - All dedicated infrastructure costs; permits
    - Low infra utilisation would suggest “pooling”; but often overlooked
    - Power of social infra or “across-the-fence” sales seldom assessed
    - Good social infra can reduce turnover, ex-pat costs and political risk
  - All overheads and risk-management costs: HQ rarely included
  - Project revenues could be diversified
    - Co-generated revenues, pooled revenues often overlooked
  - Process impaired by Ego, Silo, Hasty and Myopic (hint: Stooges)

## ***Full-Costing: of Both Public and Private is Essential***

- The Public Sector Costs and Revenues; what are they?
- Scale, complexity and number all growing, with populations
- Definitely requires more advisors, and maybe a good lawyer
  - NPV of energy subsidies, can be in the billion\$
  - Restitution costs; expanding by the day
  - Training costs/subsidies
  - Immigration coordination
  - Aboriginal issues
  - Land titles; riparian issues; environmental issues; industrial issues
  - Infrastructure (power, water, telecom, security, road, port, etc)
  - Social infrastructure (security, health, education, translation)
  - Social costs ; “avoided social costs” as benefits
  - Related revenue benefits vs. equity (royalties, taxes, commissions, etc)
  - The past is not the future; Governments now have:
    - deficits with appreciation for revenues, not costs,
    - **limited desire** to be seen subsidizing private sector, and
    - irate NGOs/voters/taxpayers, all armed with “social media”

## *The Decision Tree: Two Decisions for Scarce Capital*

- **Existing-Asset Decisions:** Minero with FCF at risk. Some examples:
  - Creeping remediation/restitution policies
  - Creeping nationalisation/taxation policies
  - Geo-technical and/or pits are getting expensive (deeper)
  - Governments retracting subsidies
  - “Free-cash flow” suffers from metal prices, opex trends
  - Capital-intensive phase-shifts: (eg: open-pit going underground)
  - Decreasing economies of scale on a given continent/country
  - Decreasing economies of scale in a given metal
  - Aboriginal frameworks re-defined
  - **Options Available: Bleed, shed, refurbish or freeze**
- **New-Asset Decisions:** Minero with project options, and limited capital  
:(e.g. methodology on next pages)

## *The New-Asset Decision*

- **Example:** MineCo has three potential candidates: \$2 bn to invest  
(All benchmarked parameters are equal ( same metal, country risk, etc))
  - Project A: \$2bn private capital w/IRR of 17%
  - Project B: \$2bn private capital w/IRR of 22%
  - Project C: \$2bn private capital w/IRR of 27%
- **Decision:** The Board approves Project C (at 27%? Of course)
  - May choose Project B as contingency back-up “option”
  - Lets go of Project A, with glee, to the competition
  - Public sector co-investment? Historical assumed, conservatively
- **Result: Board lets A go, “full speed” on C; B is the fallback**

## *Same Decision, “Fully Costed”*

- **Example:** MineCo has three potential candidates: \$2bn to invest:
  - Project A: \$2bn private capital w/IRR of 17%  
: \$50m public capital with IRR of 20%
  - Project B: \$2bn private capital w/IRR of 22%  
: \$ 500m public capital w/IRR of 10%
  - Project C: \$2 bn private capital w/IRR of 27%  
: \$ 500m public capital w/IRR of 4%
- **The Decisions:** Board approves Project C (a potential false-positive?)
  - Choses Project B as contingency back-up
  - Lets go of Project A , to the competition (a potential false-negative?)
- **Question: Were pursuing C and shedding A the right choices?**

## *Full-Costing: The “Soft” Considerations...*

**Base Case:** Was Project C the right choice? And Project A the best sale?

- If time were an issue, Project A was it, with only one queue
- If public-sector had serious deficits, A was it, with good public IRR
- If public-sector wants robust/sustainable return on its capital, B was it
- If public-sector accepts IRR of 4%, then C wins, w/ “double-queue”
  - Imbalance of IRRs and “double queue” invites cost and political risk
  - **Could be a “triple-whammy” for all capital providers**
    - Investors had IRR expectations falsely raised (“false positive”)
    - Double queue means additional costs, delays, risks
    - Depleting asset may not be replaced in time by new asset

## *Full-Costing: The Process Cost is Reduced, Radically*

- Contingency Planning; had only C been chosen, then deep doo-doo
- Educating Public Sectors; It is often not equipped
  - Many have learning curves, political biases and calendars
- Expediency is invaluable; reduces single and “double-queues”
  - Can invite political “target practice” (and inflation, rationing, turnover, etc.)
- Public sector may have capital; needs a robust return on co-investment
  - Public-sector revenues include taxes, commissions, royalties, etc
  - More balanced returns reduces political targets
- Costing both groups of assets can expedite risk-matrix negotiations
  - “Asset swaps” to rebalance the IRRs (C can become a B; B an A)
  - Asset and equity swaps, pools or shares are feasible
- **Benefit? One year of avoided delays=\$200m (\$2 bn @ 10%)**



## ***Full-Costing: A Quick Benefit-Cost Summary***

- **Benefits? Several.....timely in uncertain times**
  - Better strategic decisions for limited capital
    - An optimal time: manageable costs with upside on metal pricing
  - Anticipates issues for faster public-sector approval, fewer “queues”
  - Assists faster “asset-swaps” or sharing and fewer waiting costs
  - Shareholders enjoy less volatility
    - Fewer triple-whammies on false-positives (the Cs)
    - Fewer “false negatives” ( A’s) and better contingent-planning( B’s)
    - Fewer waiting costs (ie: \$200/year (both hard to find and dilutes equity))
- **Cost? Often requires but ONE cash-flow model schedule.....**
  - Adds up all costs and benefits for public sectors & stakeholders
    - Does require an advisor or two.....

## *Full-Costing: The End*

- **Clarifications?**
  - **Topic: Is this the right title? Discuss.....**
- **Questions, and (Hopefully) Answers**
- **Thank You, et Merci!!**
- **The rumours are true, I do like double espressos**
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