Violations of Market Value Standards with the Income Approach

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Valuation Session, SME 2005 Annual Meeting, Salt Lake City
Or:

Don’t Get Caught Doing This!
Real Example 1

- Mined stockpile of an industrial mineral
- Report by a mining consulting house stated the value at approx. $300 million
- Value calculated from the quoted market price of the mineral refined to high purity
- Two individuals lost most of their life’s savings investing in a project to process the stockpile
Real Example 1

- Author’s appraisal for commercial loan security: $0 to negative
- Problems:
  - Serious title issues
  - Remote from markets
  - Serious metallurgical process uncertainties
Real Example 1

• Consultant’s value estimate:
  – Based on refined value of all of the *in situ* industrial mineral ($/lb x total lbs)
  – No accounting for:
    • Capital costs
    • Operating costs
    • Transport costs
    • Project risk
    • Project schedule
Real Example 1

- No attempt by consultant to consider the market for the subject *as is*
- If it was worth that much, why was it still there?
Real Example 2

• Package of dormant gold mines
• Mining Engineer estimated Net Present Value as ~$10 Billion
• His report presented to a major commercial lender as security for financing
• Report contains detailed mine development and operating plans and cash flow calculations
Real Example 2

• Author’s preliminary review for lender found market value likely <$10 million
• Problems with mining engineer’s report:
  – No market transaction derived inputs
  – Highly optimistic revenue projections
  – Extremely low cost projections
  – Project risk largely ignored
• An individual who loaned $200 million likely lost it all
Real Example 2

- No attempt by mining engineer to consider the market for the subject *as is*
- Both lenders confused investment value for market value
- If the subject was worth that much, why were the mines not already redeveloped?
Real Example 3

- Dormant onyx mine, last mined 60 years ago
- Remote from major product markets
- Reports by three consultants over last 20 years place the property value at $2 Billion - $6 Billion
- Owner bought it 20 years ago for $20 million
- A mining consultant’s recent “aggressively conservative” detailed appraisal shows the value as at least $2.8 Billion
Real Example 3

- Owner applied for financing based on the “aggressively conservative” appraisal
- Author’s review found:
  - Consultant did a detailed study of product’s market
  - No market valuation principles applied using inputs from property market transactions
  - Value estimated based on:
    - Summation of 100+ years of projected mine income
    - No time value discounting
    - High product transportation cost ignored
Real Example 3

• None of the four appraisals considered the market for the subject *as is* (sales comparison approach)

• If the onyx deposit is worth Billions:
  – Why has the mine been dormant for 60 years?
  – How could the owner have bought the property for $20 million only 20 years ago – at the time the first appraisal said it was worth Billions?

• Owner did not receive the loan
Real Example 4

- Undeveloped sand deposit adjacent to existing sand and gravel mine
- Highly competitive sand and gravel market with surplus of sand
- Career minerals appraiser found the market value to be >$2 million
- Relied entirely on net present value of projected income
Real Example 4

- Author’s review found:
  - Reserve over-estimated, with little consideration for the realities of mine engineering
  - Sand specifications mismatched to demand
  - Assumed immediate mine start-up capturing a major share of the sand market
  - Capital and operating cost estimates optimistically low
  - No inclusion of project and market risk
Real Example 4

• Appraiser did not analyze the market for the property *as is* (sales comparison approach)
• If the deposit was worth >$2 million, why had the struggling adjacent mining operation (same ownership) not already expanded into it, and captured a major share of the sand market?
Real Example 4

- Multiple sales of nearby sand and gravel properties, at only approximately surface value, were all ignored (deemed “not comparable”)
- Due to the appraisal, the owner spent much of his personal savings on unwarranted litigation
The extractive industries standards (GN 14) of the International Valuation Standards state:

- At 5.3.1 “Sales analysis and other market analysis can often yield market factors such as a market discount rate, a risk factor or uncertainty factor that may be used in the Income Approach.”

- At 5.3.3 “For the Valuer to report a Market Value estimate resulting from such an [NPV/DCF/real options] analysis, all inputs and assumptions must reflect available market-based evidence and current expectations and perceptions of market participants, in accordance with GN 9. Any departure from the requirements and analysis protocol of GN 9 must be specified.”
Valid Market Value Estimation by the Income Approach

• A market-based discount rate can often be extracted by sales analysis of an operation of similar nature and similar lifespan

• Care must be taken that analysis calculation for the sale is conducted on a similar basis as the analysis of the subject
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<th>Investment &amp; Expense $(000)</th>
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Total PV = 0
Author’s Observations

• Minerals appraisers who provide high value estimates generally get the most work.
• The common practice of lenders of allowing their client to choose and pay the minerals appraiser, encourages very high appraised values.
• The minerals appraiser who provides a well developed estimate of market value after another consultant has provided an astronomical value to the same client, will generally not get his last invoice paid.