“COAL ASSET VALUE THROUGH THE SUPER-CYCLE”

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SMEDG : 28th January 2016

Contents:
- The super-cycle
- Major mining companies
- USA coal companies
- Chinese coal companies
- Australian coal companies
- Resources, Reserves and Mines
- Implications

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Citigroup (June 2015):
“...world’s largest mining companies have written off about 90% of the value of deals executed since 2007, led by charges in aluminium, iron ore and nickel...”
“...coal assets will add to write-downs as prices fall...”

Source : Aust Fin Review 3 September 2015 ; Financial Times 27 October 2015

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What is/was the super-cycle?

CS Commodities index, real terms, USD based

Source : Credit Suisse, Paul McTaggart (2014)

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What is the super-cycle for coal?

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What is the super-cycle for coal?

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What is the super-cycle for coal?

AUSTRALIAN COAL EXPORTS 1970-2015

What is value?

Market Capitalisation: value of equity of a company
Enterprise Value (EV): value of enterprise = equity + net debt
Implied Value (IV): EV calculated from transactions

Value derived from:
A. Share price and company public data
B. Transactions
C. DCF and NPV analysis

USA COAL COMPANY VALUE: Market Cap. 2015

<table>
<thead>
<tr>
<th>Company</th>
<th>EV</th>
<th>DEBT</th>
<th>Mkt Cap</th>
</tr>
</thead>
<tbody>
<tr>
<td>PEBODY</td>
<td>$6.2B</td>
<td>$6.0B</td>
<td>$250M</td>
</tr>
<tr>
<td>ARCH</td>
<td>$5.1B</td>
<td>$5B</td>
<td>$63M</td>
</tr>
<tr>
<td>ALPHA</td>
<td>$4B</td>
<td>$4B</td>
<td>Chapter11</td>
</tr>
</tbody>
</table>

USA COAL COMPANY VALUE: Market Cap in Super-cycle

<table>
<thead>
<tr>
<th>Company</th>
<th>Mkt Cap 2003</th>
<th>Mkt Cap 2008</th>
<th>Mkt Cap 2015</th>
</tr>
</thead>
<tbody>
<tr>
<td>PEABODY</td>
<td>$1,800</td>
<td>$20,000</td>
<td>$250</td>
</tr>
<tr>
<td>ARCH</td>
<td>$1,000</td>
<td>$7,000</td>
<td>$63M</td>
</tr>
<tr>
<td>ALPHA</td>
<td>$1,000*</td>
<td>$4,000</td>
<td>Chapter11</td>
</tr>
</tbody>
</table>

* 2005
**CHINESE COAL MINING COMPANY VALUE : Enterprise Value**

![Graph](image1)

- **EV (US$Billions)**
- **USD/T**
- **Coal Price (RHS)**

**Source:** YCharts

**AUSTRALIAN MID-TIER COAL MINING COMPANY VALUE : Enterprise Value**

![Graph](image2)

- **EV (A$Billions)**
- **USD/T**
- **Coal Price (RHS)**

**Source:** YCharts

**ASX LISTED COAL EXPLORATION & DEVELOPMENT COMPANIES : EV**

![Graph](image3)

<table>
<thead>
<tr>
<th>COMPANY</th>
<th>IPO</th>
<th>takeover/exit</th>
<th>status Sept 2015</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acacia (AJC)</td>
<td>2006</td>
<td>chart. peak mkt cap $70m (2011)</td>
<td>shares at $0.002</td>
</tr>
<tr>
<td>Allegiance (AHS)</td>
<td>2011</td>
<td>peak int cap $18m at $0.12</td>
<td>shares at $0.014</td>
</tr>
<tr>
<td>Bandanna (BND)</td>
<td>2008</td>
<td>Admin. 2014</td>
<td>chart. peak int cap $100m (2011)</td>
</tr>
<tr>
<td>Blackwood</td>
<td>2010</td>
<td>T/O: 2014</td>
<td>T/O by CDL with scrip</td>
</tr>
<tr>
<td>Blackpay (BNT)</td>
<td>2008</td>
<td>Safety equipment</td>
<td>shares at $0.0125</td>
</tr>
<tr>
<td>Cadia Resources</td>
<td>2010</td>
<td>T/O: 2013</td>
<td>IPO at $2.40 Peak int cap $221m</td>
</tr>
<tr>
<td>Coalworks</td>
<td>2006</td>
<td>T/O: 2012</td>
<td>T/O by WHC at $370m</td>
</tr>
<tr>
<td>Cockatoo Coal (CKO)</td>
<td>2005</td>
<td>chart. peak int cap $600m (2014)</td>
<td>shares at $0.016</td>
</tr>
<tr>
<td>Coal (CKG)</td>
<td>2010</td>
<td>T/O: 2010</td>
<td>Peak int cap $250m (2011)</td>
</tr>
<tr>
<td>Country Coal (CCJ)</td>
<td>2012</td>
<td>peak int cap $33m (2012)</td>
<td>shares at $0.012</td>
</tr>
<tr>
<td>Gold Royalty (GRO)</td>
<td>2012</td>
<td>IPO at $2.90 Mkt cap $41m (2014)</td>
<td>shares at $0.06</td>
</tr>
<tr>
<td>Endocaol</td>
<td>2010</td>
<td>T/O: 2012</td>
<td>T/O: $70m Mkt cap $45m</td>
</tr>
<tr>
<td>Gladstone (GLS)</td>
<td>2012</td>
<td>chart. shares at 2011-15 $0.004</td>
<td>shares at $0.013</td>
</tr>
<tr>
<td>Malakir Coal (MCI)</td>
<td>2012</td>
<td>IPO at $1.65 Mkt cap $84m</td>
<td>shares at $0.027</td>
</tr>
<tr>
<td>NuCoal (NCR)</td>
<td>2004</td>
<td>ICAC</td>
<td>chart. peak int cap $100m (2011)</td>
</tr>
<tr>
<td>Stanmore (SMR)</td>
<td>2009</td>
<td>Shares in 2011-14 Chart.</td>
<td>shares at $0.10</td>
</tr>
<tr>
<td>Tilt Coal (TCM)</td>
<td>2006</td>
<td>admin. 2014</td>
<td>peak market cap $84m</td>
</tr>
<tr>
<td>Wollongong Coal (WNG)</td>
<td>2012</td>
<td>peak market cap $400m</td>
<td>Delisted 2015</td>
</tr>
</tbody>
</table>

**ASX LISTED COAL EXPLORATION & DEVELOPMENT COMPANIES**

**Transaction and Trading analysis**
- EV/Resource tonne
- EV/Reserve tonne
- EV/Sales tonne (current; planned)
- Transactions through the cycle
- Example: Maules Creek

- EV through mine development
- Example: Maules Creek

**COAL ASSET VALUE THROUGH THE SUPER-CYCLE**

**MINING COMPANY VALUE : EV INDEX (Pre 2005 : 1.0)**

![Graph](image4)

- **HCC (US$/t)**
- **BHP**
- **Rio**
- **Anglo Am**
- **Peabody**
- **Arch**
- **NewHope**
- **Whitehaven**
- **Cockatoo**
- **NuCoal**
- **Bandanna**

**COAL ASSET VALUE THROUGH THE SUPER-CYCLE**

**AUSTRALIAN MID-TIER COAL MINING COMPANY VALUE : Enterprise Value**

![Graph](image5)

- **EV (A$Billions)**
- **USD/T**
- **Coal Price (RHS)**

**Source:** YCharts
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**COAL ASSET VALUE THROUGH THE SUPER-CYCLE**

**2006-2015 COAL ASSET TRANSACTION ANALYSIS (ANNUAL AVERAGES)**

- EV/Resource T (LHS)
- EV/Reserve T (LHS)
- EV PAST (RHS)
- HCC (US$/T) (RHS)

- 35-70 Transactions

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**Multiple mine/project transactions**

- East Saraji
  - 2006: <$50M
  - 2008: $2.5B
- Integra
  - 2007: $835M
  - 2010: $360M (90%)
- Isaac Plains
  - 2011: $660M
  - 2015: $1
- MDL162
  - 2010: $500M (50%)
  - 2014: $70M
- Taroom and Collingwood (50%)
  - 2010: $500M
  - 2014: $25M
- Riversdale
  - 2010: $4M
  - 2014: $50M
- Grande Cache
  - 2012: C$1B
  - 2014: US$2

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**TRADING : Peabody EV Per Reserve Ton and PAST**

- Peabody EV / Res T
- Peabody EV PAST (RHS)
- Coal Price (RHS)

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**Maules Creek Mine Value Estimates 2009-2015**

**AS MINE DEVELOPMENT PROCEEDS VALUE EXPECTED TO RISE**

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**CONCLUSIONS :**

- Price cycle dominated value
- Relationship: price and value

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**Transaction and Trading analysis**

- EV/Resource tonne
- EV/Reserve tonne
- EV/Sales tonne (current; planned)
- EV through mine development

- Expectation: value increase as risk reduced
- Example: Maules Creek Mine
Where to from here for coal asset values?

Driver: coal price - current and forecast
Cost reductions happening
Value now?
The next coal price cycle? Or structural decline?
• If/when does cycle start?
• Drivers and unknowns
  • Import coal demand: China, India, E & SE Asia
  • Coal supply: Indonesia, India, China, Australia
  • Nuclear
  • Renewables
• Is the next coal cycle an
  • up cycle or a
  • "super bear cycle" or a
  • normal cycle

Related to coal price.
The next coal price cycle?
A When does it start?
A Is it an up cycle or a "super bear cycle" or normal cycle

Slide 3: "...coal assets will add to write-downs as prices fall..."
Debt levels.
Is it the time to buy?