

Coal overview

DECEMBER 2014

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Executive summary

- **In the context of an energy challenged world and continuing urbanisation the world needs more, not less coal**
 - A total of 7.9bn tonnes of coal* produced in 2013. At an hypothetical price of US\$85/t, this represents a production value of US\$670bn
 - In 2013, coal was used to generate over 40% of the world's electricity and was needed to produce 68% of the world's steel
 - Global electricity demand could double by 2035 and global steel demand could go up by 60%
 - Thermal coal will lose market share in the energy mix, but in absolute terms will grow faster than any other source of energy globally
- **Prices and stocks**
 - In the past three years the Coal mining industry has lost steam and benchmark thermal coal prices are down ~42% while coking coal prices are down about ~50%
 - Coal equities volatility persists with juniors coal index down 47.8% and the majors coal index down 1.3% YTD
- **Smart money creation: Closures vs. productivity gains?**
 - Falling prices have caused a spur in mine closures and project cancellations (both temporary and permanent). At current market prices of ~US63/t, about 40% of the thermal coal mines are "out of the money"
 - Despite the recent price downfall, big miners are not aiming for capacity rationalisation as a catalyst to increase prices. Instead, key players are looking for productivity improvements and volumes increases to reap economies of scale
 - Political realities and take-or-pay arrangements (in particular in Australia) have prevented necessary closures to balance the seaborne market
- **M&A activity**
 - The current environment offers plenty of opportunistic M&A activities. Consolidation has not started
- **Country activity**
 - Ukraine: Political turmoil and military conflict in the coal producing region will require alternative sources
 - Poland: Coal accounts for almost 90% of electricity generation. A plunge in coal revenue has deepened losses in the industry, triggering labour unrest amid the threat of industry restructuring to reduce costs
 - Germany: Germany is phasing out subsidised hard coal mining by 2018 and combined with the decision to phase out nuclear power generation, will need to import more coal
 - Colombia: Production of 100Mt a possibility in the near future, making it the fastest growing export region in the world
 - US: Implications of the Obama administration's ongoing war on coal have little impact outside the US
- **Outlook**
 - The fundamental case for coal is strengthening and strong. For investors it requires possibly several years of patience. Consensus long term thermal coal prices are expected to be in the range of US\$85/t to US\$90/t. Coking coal prices are expected to be in the range of US\$150/t to US\$160/t

Recent coal news

Downgrade of credit ratings for coal miners by Moody's e.g. NWR and Patriot Coal as a result of falling coal prices

Aug 2014, source: Moody's press release

India's Jindal Steel mothballs US\$10bn coal-to-diesel project in the wake of India's Supreme Court decision to cancel hundreds of coal mining licences which they feel were granted illegally

Nov 2014, source: Mining.com

Glencore will shut 11 Australian mines for 3 weeks over Christmas to remove 5Mt of coal from the oversupplied market. This is an act it hopes other miners will follow in order to drive up prices

Nov 2014, source: Reuters

BHP and Transnet have agreed a 10 year contract for export coal on rail in a 'take or pay' contract for US\$2.1bn

Oct 2014, source: miningtechnology.com

Peabody teams with Glencore in Australia. Both firms will combine for the 50-50 JV, resulting in improved productivity, lower costs and extended mine life

Nov 2014, source: Bizjournal.com

Goldman Sachs may sell its coal mine subsidiary Columbian National Resources due to the mine not having exported any coal since January as a result of new environmental regulations

Nov 2014, source: Reuters

Winsway undergoes major disposal of 42.74% interest in Grande Cache Coal Corp for US\$1 after acquiring for US\$1bn

Nov 2014, source: Winsway press release

Rio Tinto sells Mozambique coal portfolio for US\$50mm to India's International Coal Ventures, having purchased for it for US\$3.7bn from Riversdale Mining in 2011

Jul 2014, source: Rio Tinto press release

Ukraine must import coal in order to keep itself from plunging into power and heating blackouts. Rescue is unlikely to come from Russia due to ongoing political turmoil

Nov 2014, source: Reuters

Aug 2014 – India's Supreme Court declares more than 200 coal mining licences illegal

Sep 2014 – Supreme Court confirms cancellation of coal licences

Source: FT.com

Rio and BHP called world leaders to seek a deal setting an international price on carbon. Their plea comes amid fears a climate change deal reached between the U.S. and China that could hurt coal miners in Australia.

Nov 2014, source: Mining.com

China will ban import and sale of all coal with ash contents >40% and sulphur contents >3% (30% and 1.5% for lignite). The number is reduced for coal transported >600km and more so for use in coastal areas and northern cities

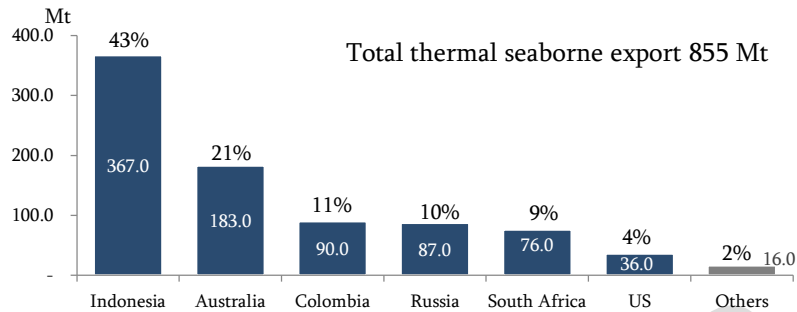
Oct 2014, source: Reuters

France plans to phase out subsidies for fossil fuels and therefore no longer plans to provide export credits for coal

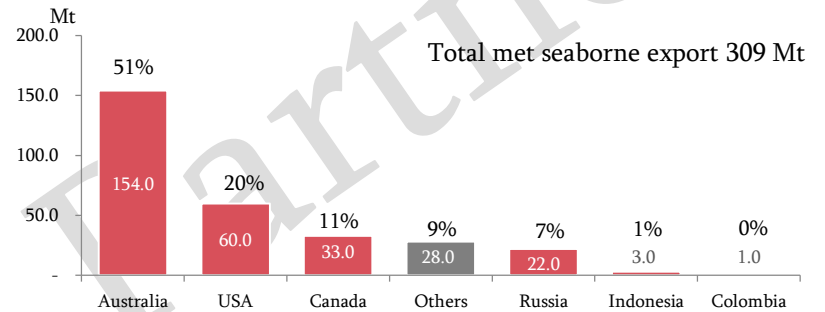
Nov 2014, source: Reuters

Global coal trade 2013

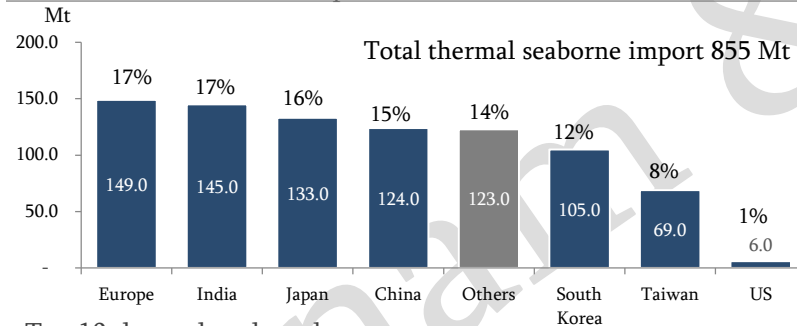
Thermal coal Seaborne export



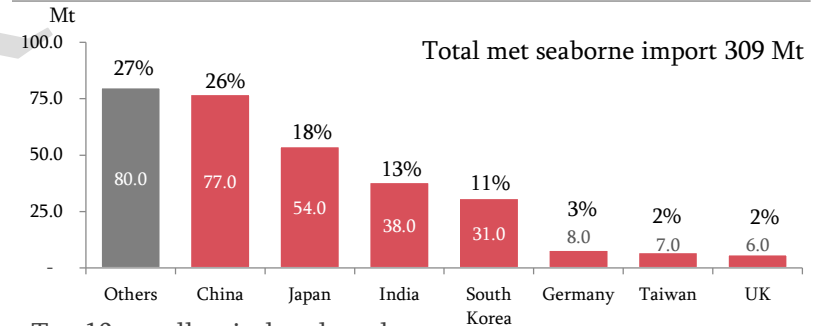
Metallurgical coal Seaborne export



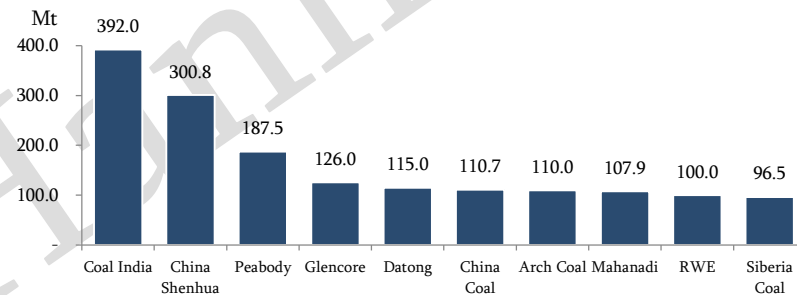
Thermal coal Seaborne import



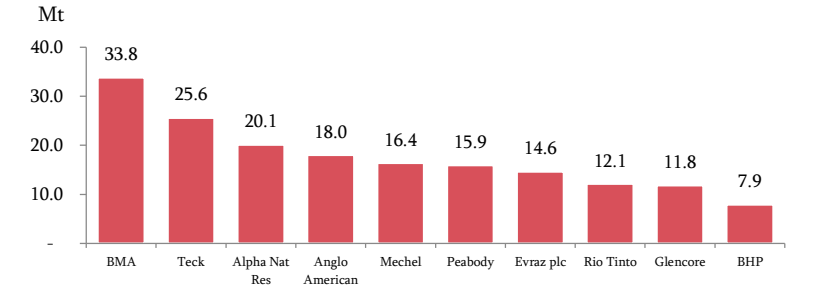
Metallurgical coal Seaborne import



Top 10 thermal coal producers



Top 10 metallurgical coal producers

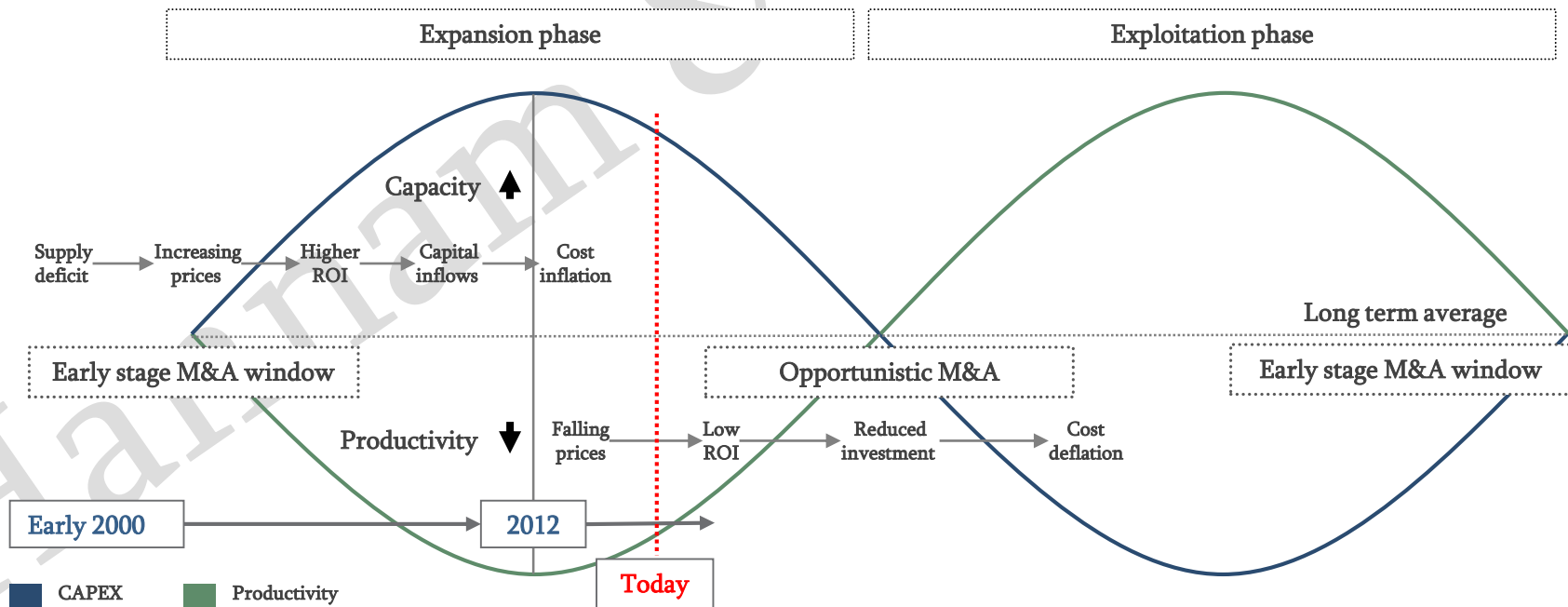


Source: Company Documents, World Coal Association, Bloomberg, Goldman Sachs

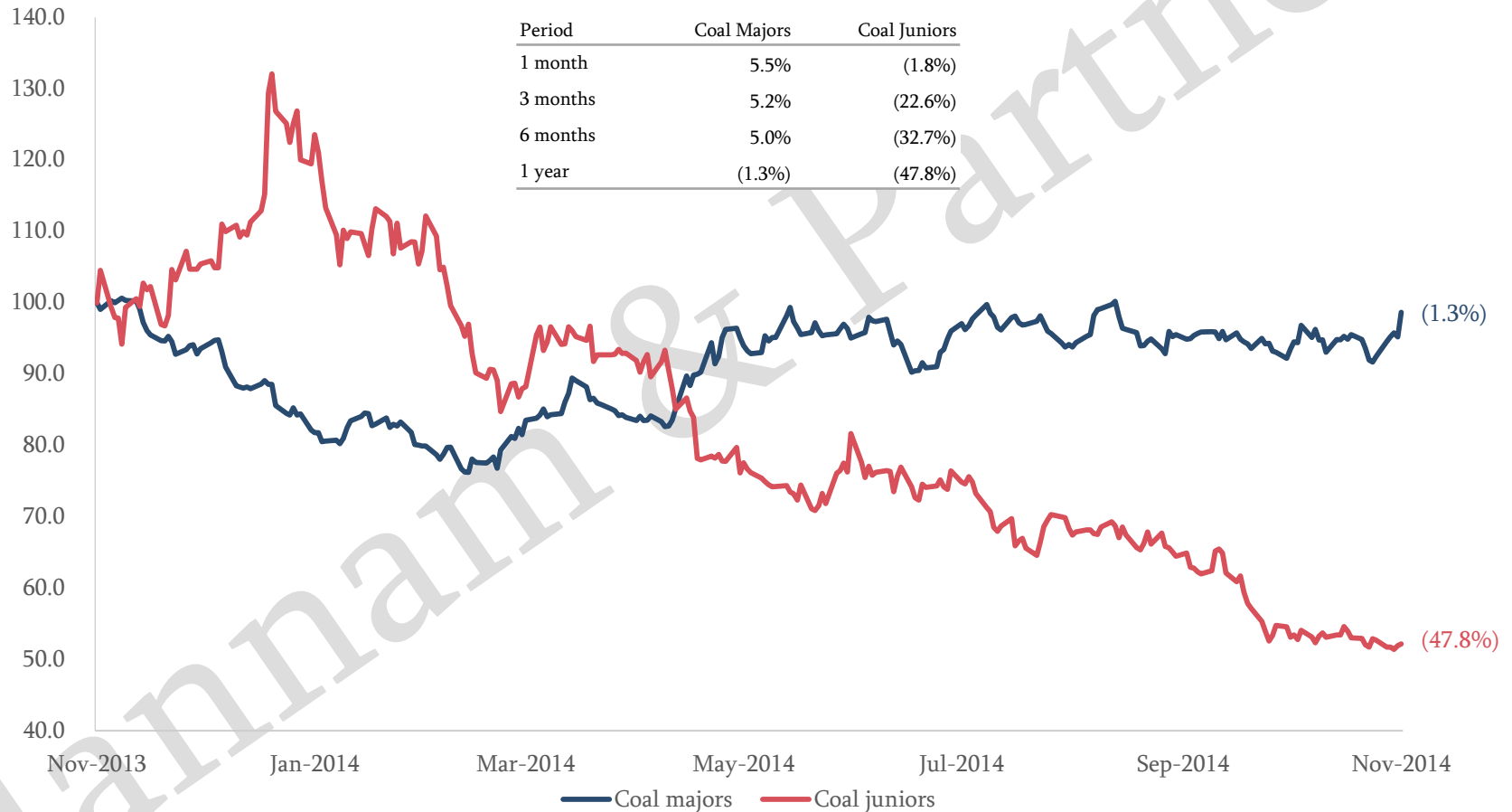
After years of expansion, the coal mining industry has been forced to focus on productivity improvements and strict value management

- It takes years to effectively add capacity once the underlying demand for a commodity intensifies
- In the interim, prices skyrocket, capital returns shoot up, capital in-flows are high and mining specific cost inflation is above average
- A pronounced “expansion” phase results in a material increase of capital stock (capacity) and the destruction of productivity
- Before capital expenditure peaks, prices start to fall which pulls the industry into a downturn where surviving players focus on regaining productivity by exploiting (sweating) existing assets and by shelving or off-loading expansion projects
- The market has reached a time when funding will only be available for the best projects in the industry
- Recent deals by Severstal (PBS Coals), Winsway (Grand Cache) and Rio Tinto (Coal Mozambique) underline the difficult environment and the opportunistic nature of deals done

Cycles of “expansion” and “exploitation” can take a considerable time in mining



Coal juniors vs majors

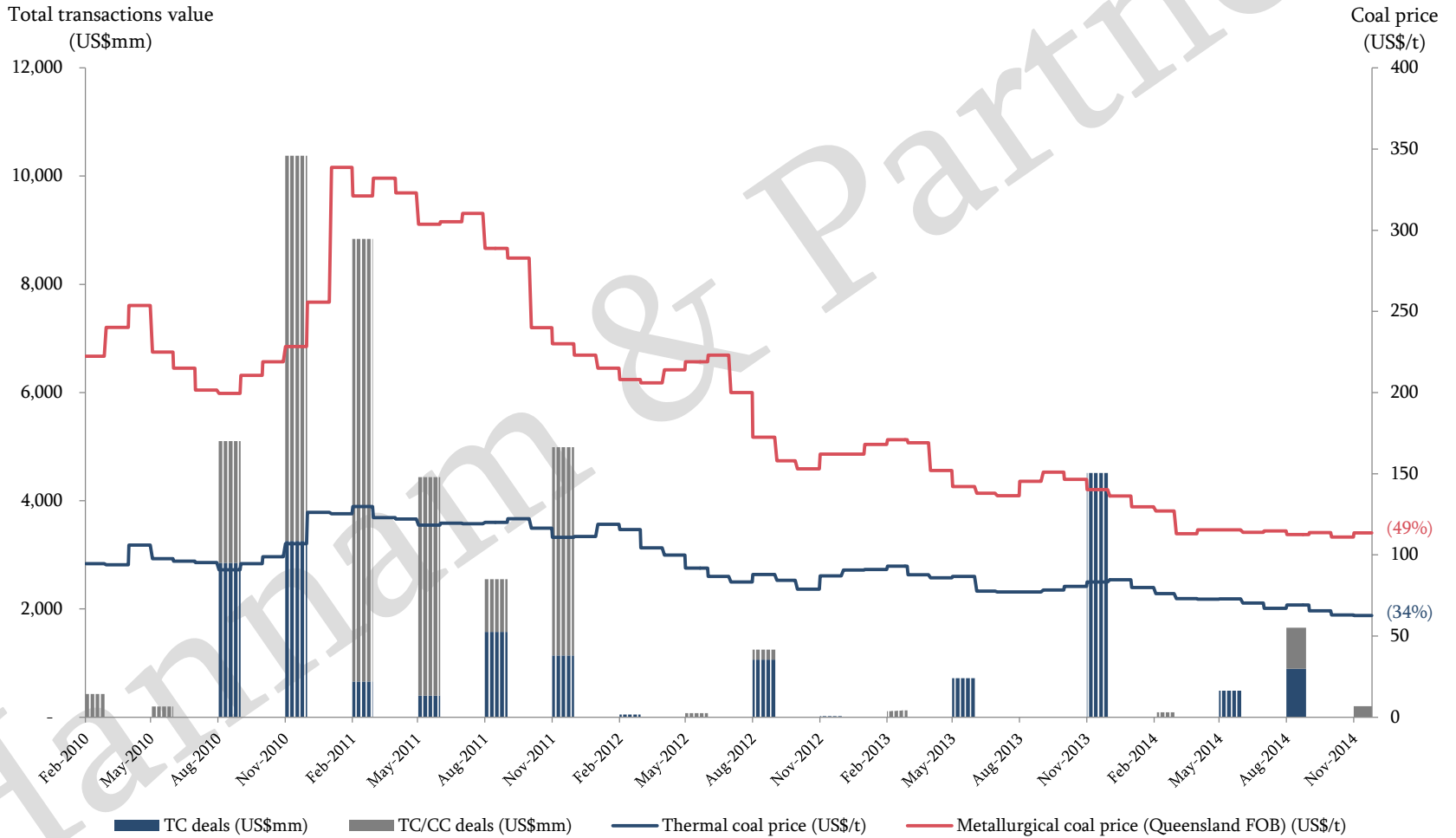


Note: prices rebased to 100

Note: Coal majors includes China Shenhua Energy, China Coal Energy, Coal India, CONSOL Energy, Peabody Energy, Semirara Mining, PT Adaro Energy, Yanzhou Coal

Note: Coal juniors include Keaton Energy, Cockatoo Coal, Tigers Realm, Resource Generation, African Energy Resources, Bathurst Resources, Coal of Africa, Prairie Mining, Stanmore Coal, Coalspur Mine, Aspire Mining, Ncondezi Energy

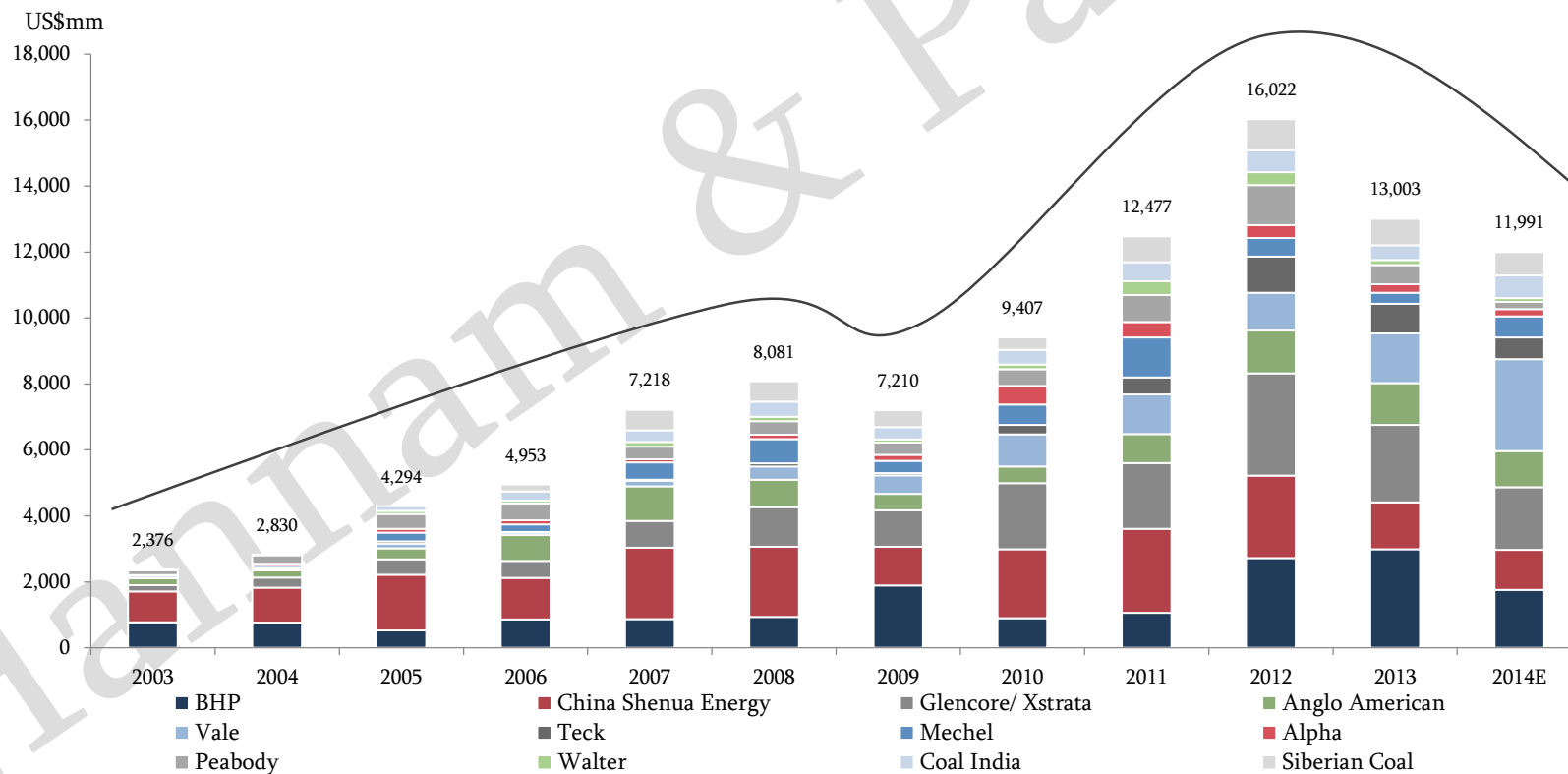
Coal prices vs. major coal transactions



Source: Factset, Bloomberg
 Note: No deals recorded in Q2 2008, Q3 2013 and Q1 2014

The mining “Supercycle” ended in 2012 but investments are still high

- The “expansion” phase peaked in 2012, a year after the post crisis commodity prices peaked
- Majors tried to stop early projects, but most projects with large sunk costs were continued as projects with a 2-3 year lead time were approved during the high pricing times of 2010 (thermal coal > US\$100/t)
- We expect a prolonged period of reducing capital expenditure and a focus on profitability
- Shareholders force boards to be conservative resulting in limited M&A driven by synergistic consolidation
- Majors are more cautious than ever before entering new jurisdictions

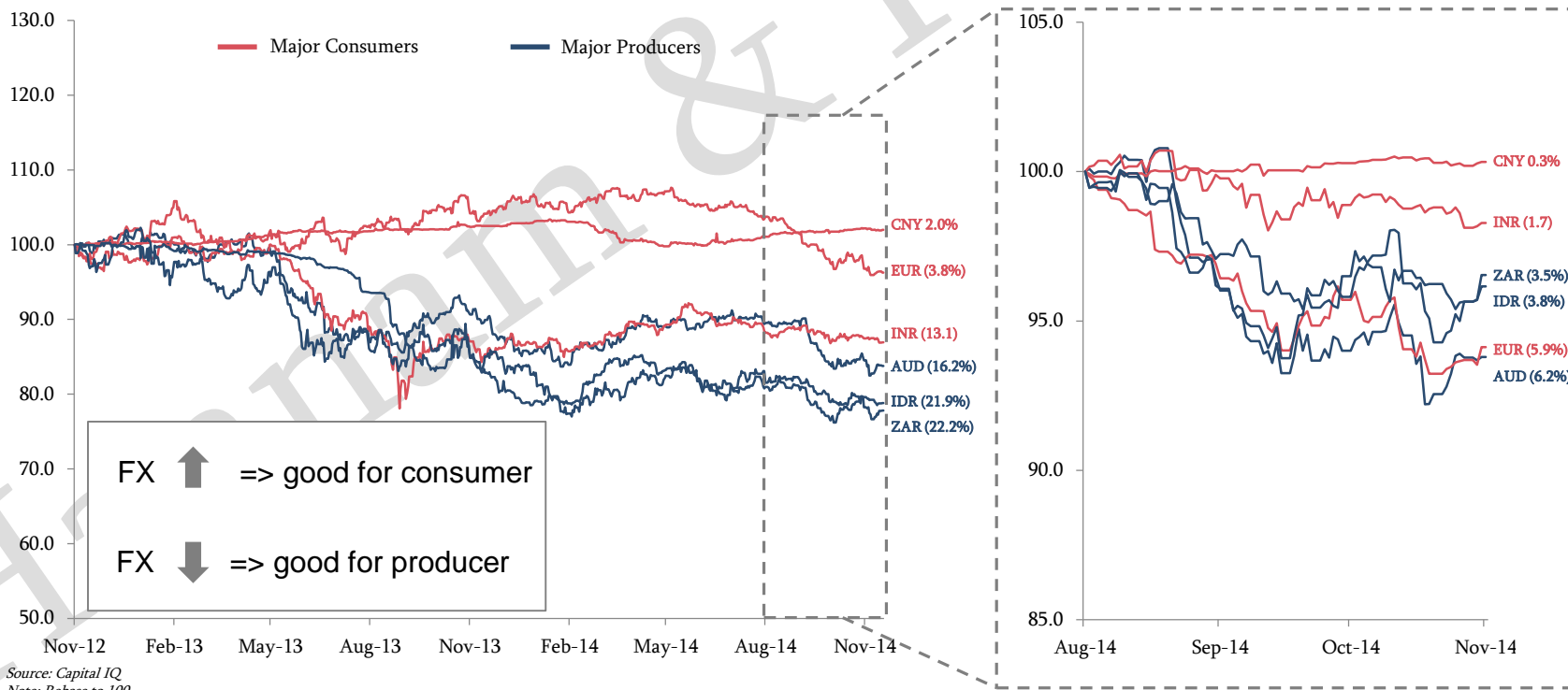


Source: Bloomberg, Capital IQ, Company documents

Exchange rates are a topic to watch

Exchange rate movement against the US\$ since the last peak of thermal coal prices

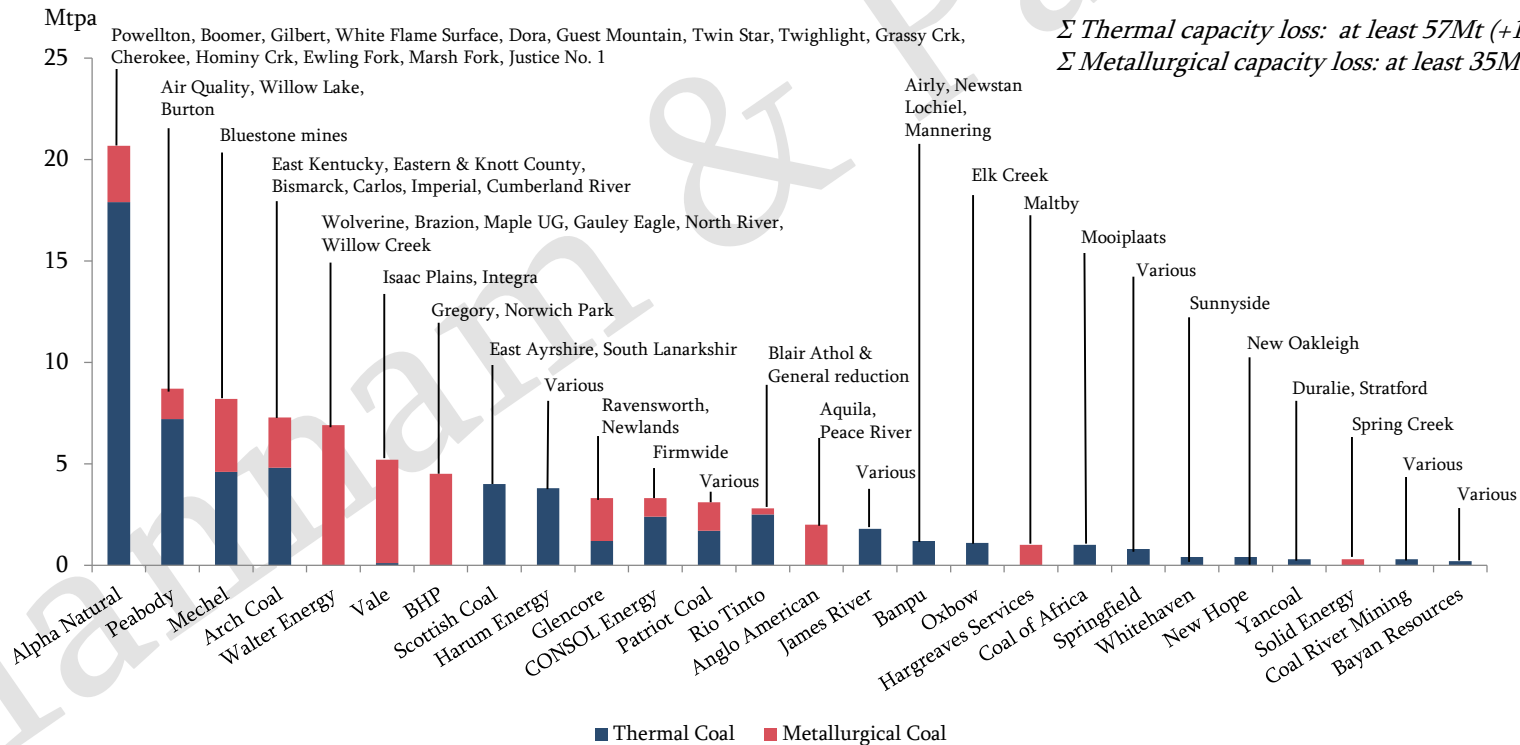
- Over recent years have been “Good for China and Bad for India”, but the latter is fighting back
- The Australian dollar was strong which did not support Australian exporters
- South African and Indonesian producers gained earnings power over their Australian peers
- The end of QE is driving the US\$ up, which is good for producers and bad for all importing nations and consumers



Source: Capital IQ
Note: Rebase to 100

Coal mine closures since 2012 (ex-China)

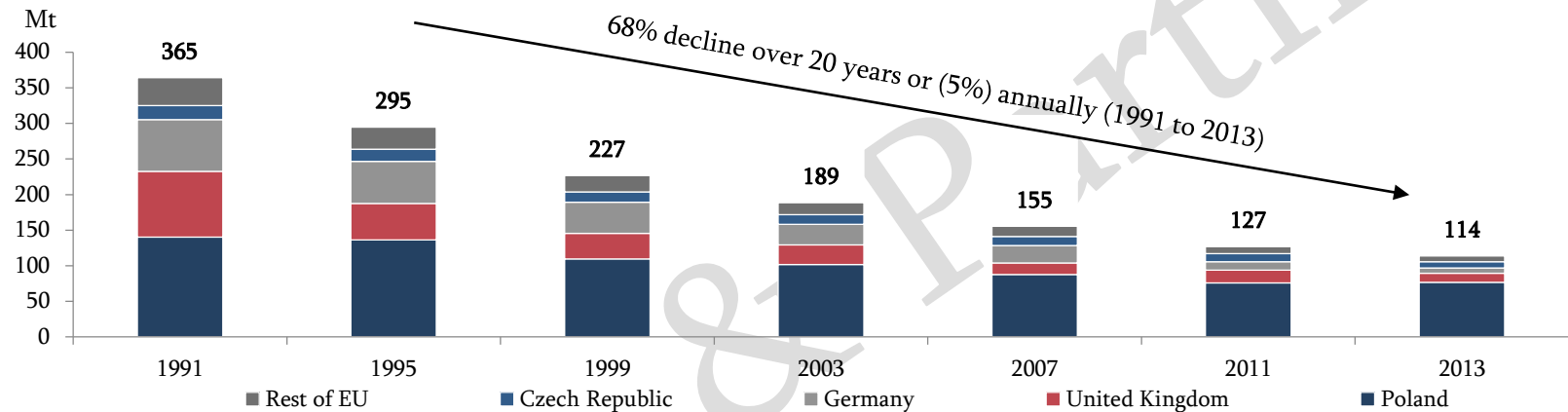
- At least 57Mt thermal and 35Mt metallurgical coal capacity has been removed since 2012
- Australian mine closures were the result of an increasing cost base
- In the US, where local prices are significantly below seaborne prices, capacity that did not find its way into export markets had to be closed
- Glencore announced in Nov 2014 that it would close 11 Australian operations for 3 weeks over Christmas to reduce output by 5Mt (TC & MC combined)
- The China National Energy Administration has also disclosed it will remove 117Mt of thermal production by the end of 2014 by closing all mines <90,000 tpa



Source: Hannam and Partners Research/ Bloomberg

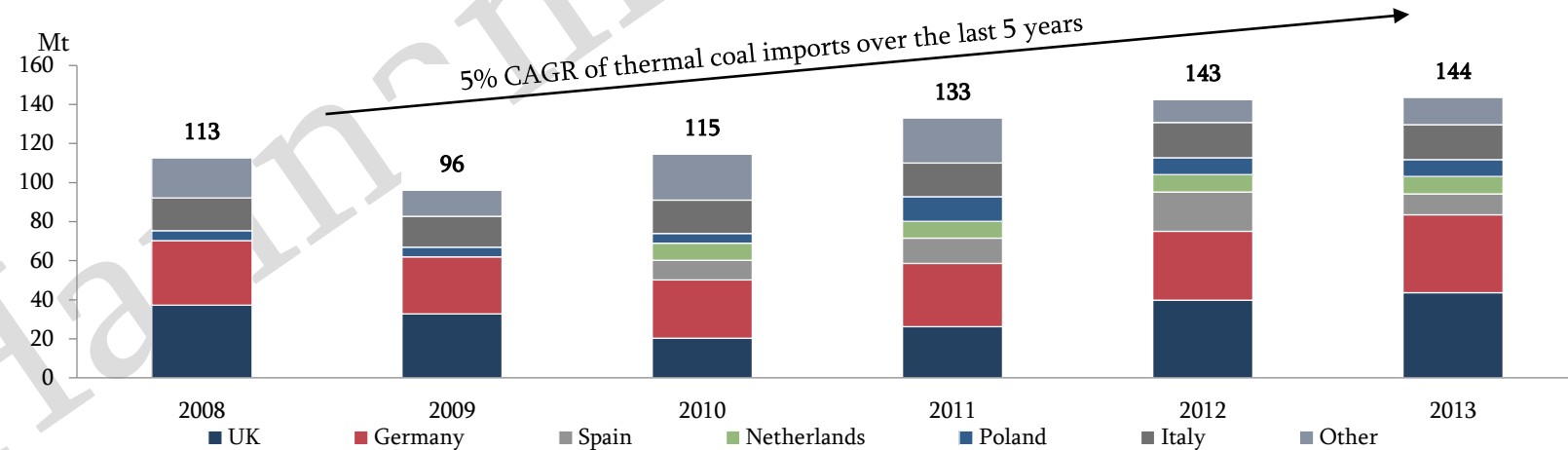
Increasingly high cost European operations with dwindling resources is leading to a change in the import/export balance

European domestic hard coal production continues to decline...



Note: Hard Coal includes thermal and metallurgical Coal

...making Europe increasingly reliant on imported coal

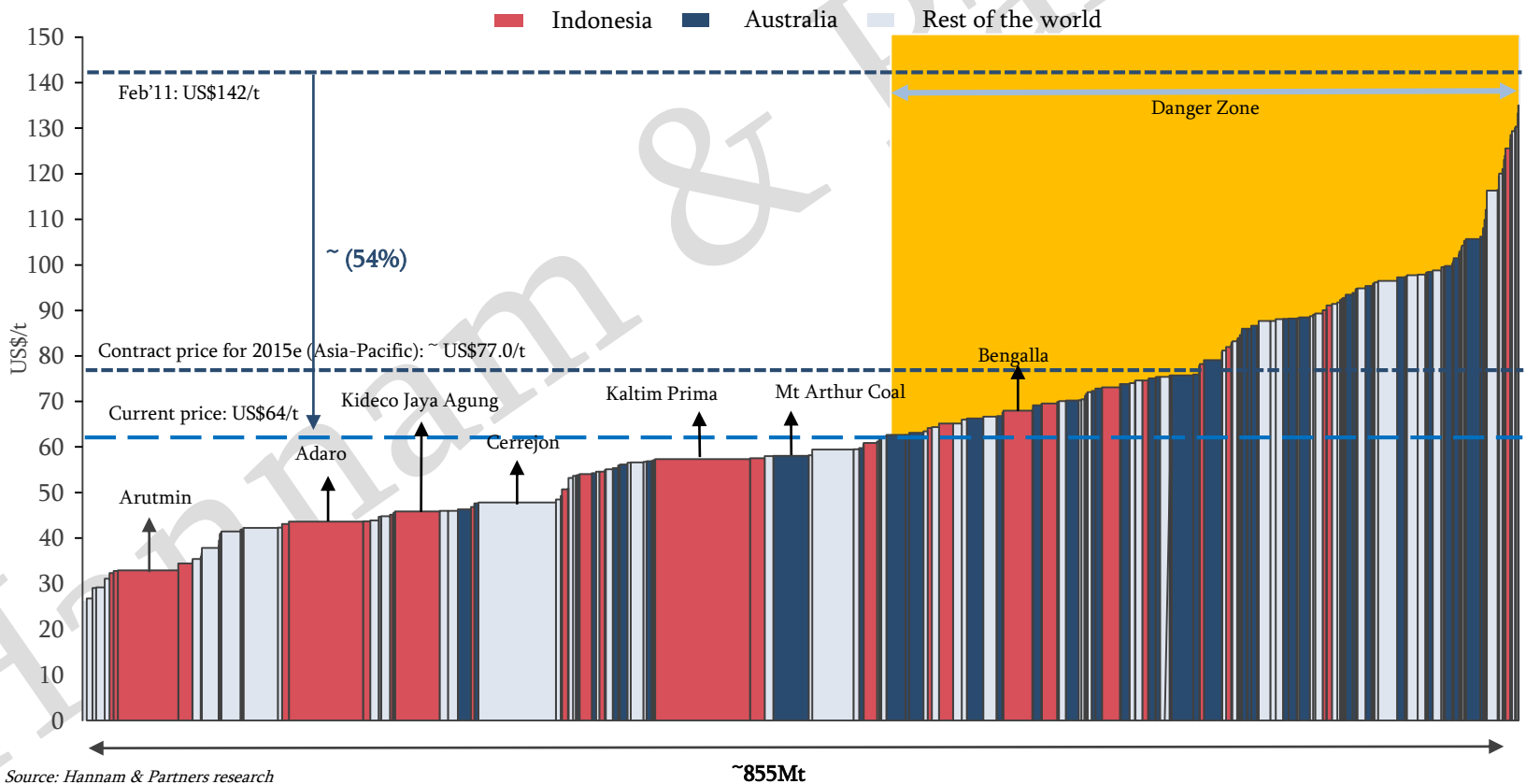


Note: Coal Import Data does not include Turkey

Even after significant shutdowns, the market is still oversupplied and further mine closures seem likely

2013 seaborne thermal coal cost curve

- Global seaborne thermal coal trading ~855Mt in 2013
- Over 40% of current global seaborne production is loss-making, translating into a closure potential of 150Mtpa
- Miners reacted to falling prices by increasing production, to lower unit costs



Source: Hannam & Partners research

~855Mt