Mining Investment Analysis
Risks & Opportunities

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Santander

Risk # 1: Increasing Royalties and Taxation

- It is not a trend anymore, it's a global reality:
  - Australia – supertax of 30% from 2012 onwards
  - Chile – in process to approve new royalties of up to 9% from 4%
  - Brazil – new mining code and comparison with oil royalties
    - Main president candidates support increase in royalties
    - Disconnection between foreign and local investors on magnitude
    - Potential benefit to minerals to be processed in the country

Vale – Iron Ore Royalties Scenarios, Effects on TP

Iron Ore Royalty	Vale 2011YE Target Price	Amount to be paid in 2012	% of 2012 EBITDA
2.0%	US$37.00	US$0.75 billion	2.31%
5.0%	US$35.50	US$1.88 billion	5.76%
7.5%	US$34.30	US$2.82 billion	8.64%
10.0%	US$33.00	US$3.76 billion	11.53%
15.0%	US$30.70	US$5.65 billion	17.29%

Source: Santander estimates

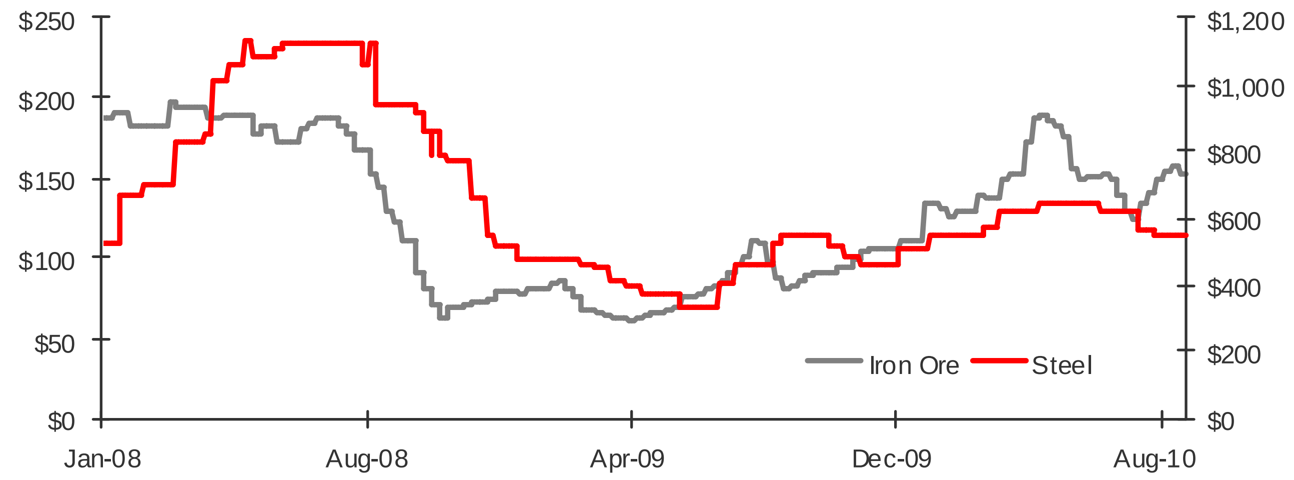
Risk # 2: Non Accretive M&A Actions

- **Excess cash generation may lead to:**
  - **M&A in detriment of organic growth and dividends**
  - **Consolidation towards 2nd tier companies/assets at high prices**
  - **Becoming bigger for the sake of being bigger, not value creation**
  - **Risk for leaders, opportunity for juniors**

Risk # 3: Lower Profitability of Clients

- Downstream sectors are usually not consolidated as the mining industry
  - Main examples: steel, automotive
  - Margin compression can imply in lower utilization rates (steel @ 75%)

Iron Ore and Steel Prices US$ per Ton, 2008 to Sep-10

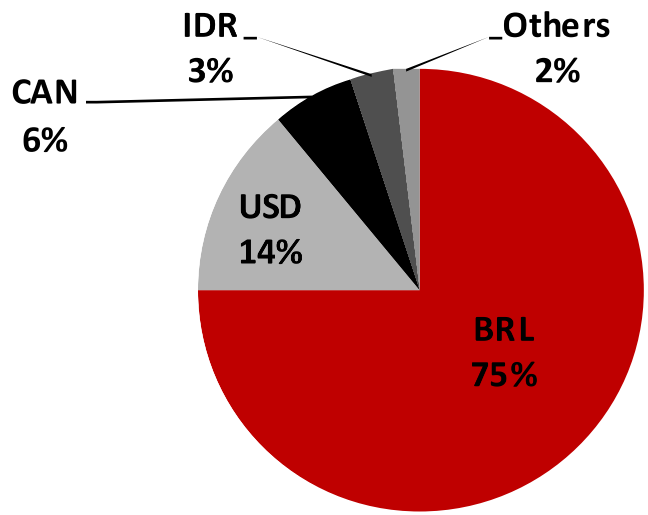


Sources: Santander estimates and Bloomberg.

Risk # 4: Weaker US$

- BRL, AUD, CAN may remain stronger for longer versus USD
  - Most of capex/opex is in local currencies
  - Margin compression in ST
  - Lower IRR in new projects in LT

Vale COGS Breakdown By Currency



Source: Company reports

Risk # 5: Lower Grades / Product Quality

- Higher product prices in ST implying in:
  - Faster depletion
  - Lower grades and higher costs with concentration
  - Development of more complex reserves in complex regions
  - Higher capex per ton due to extra processing facilities/logistics
  - Predominance of greenfield projects

Risk # 6: Organic Growth Execution

- Delays will happen mainly due to:
  - Stricter environmental licenses/permits
  - Infrastructure bottlenecks
  - Management challenge
  - Mining equipment suppliers may not be able to attend demand

Iron Ore Expansion Projects (Million Tons)

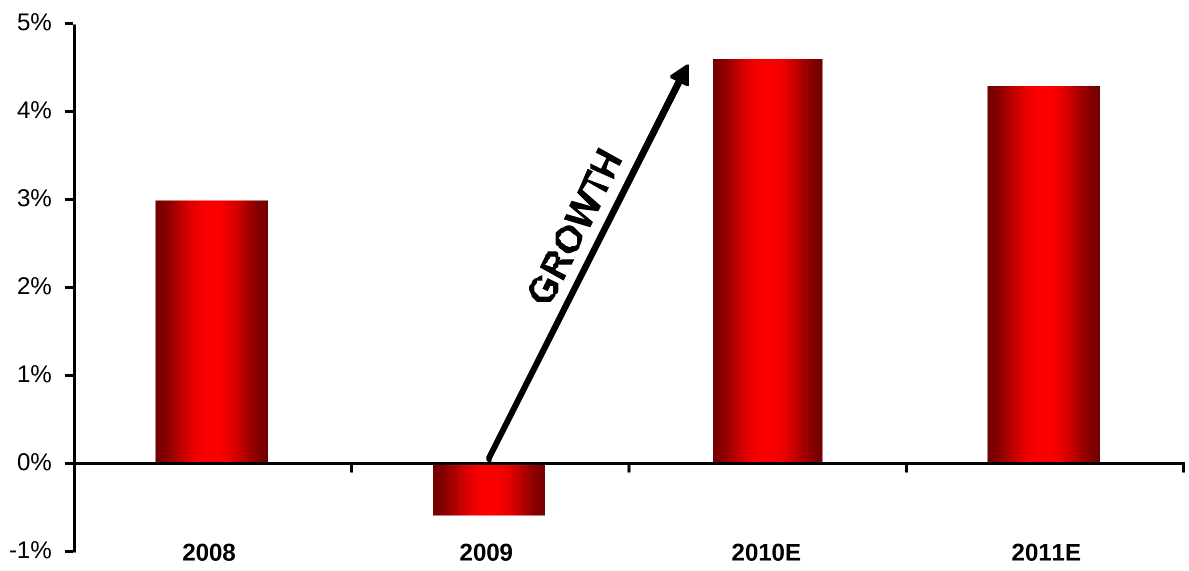
Company / Year End	2009	2013	2015	3 Yr CAGR	6 Yr CAGR
VALE	300	380	450	4.3%	7.0%
Rio Tinto	220	259	309	3.5%	5.8%
BHP	129	245	305	23.8%	15.4%
Anglo American	4	31	84	0.0%	66.1%
Anglo American - Kumba	43	55	55	8.3%	4.1%
CSN	22	50	65	22.1%	19.8%
Total	**718**	**1,019**	**1,268**	**8.9%**	**9.9%**
% World Iron Ore Consumption	51.8%	55.1%	63.0%		
% Chinese Iron Consumption	79.0%	84.4%	93.5%		

Source: Company reports and Santander estimates

Opportunities: Short Term

- **Emerging Markets Economic Growth**
  - **China is expected to remain leading the developing world leap**
  - **Brazil, India and Russia also growing**
  - **Developed world: downside seems limited**

World GDP



Source: IMF.

Opportunities: Medium Term

- **Tight supply will prevail until 2013 at least**
  - **Execution risk is also an opportunity for market leaders**
  - **Iron ore and cooper are consolidated markets**

Iron ore and copper supply demand scenario

Millions of Tons	2010E	2011E	2012E
Increase in Global Demand	178.6	96.1	89.7
increase in Top Producers Supply	57.6	62.0	90.0
China increase in Production	119.7	20.0	-20.0
Iron Ore Spot Price (US$/ton) - Avg:	**US$146**	**US$150**	**US$127**

Sources: Santander estimates and Bloomberg.

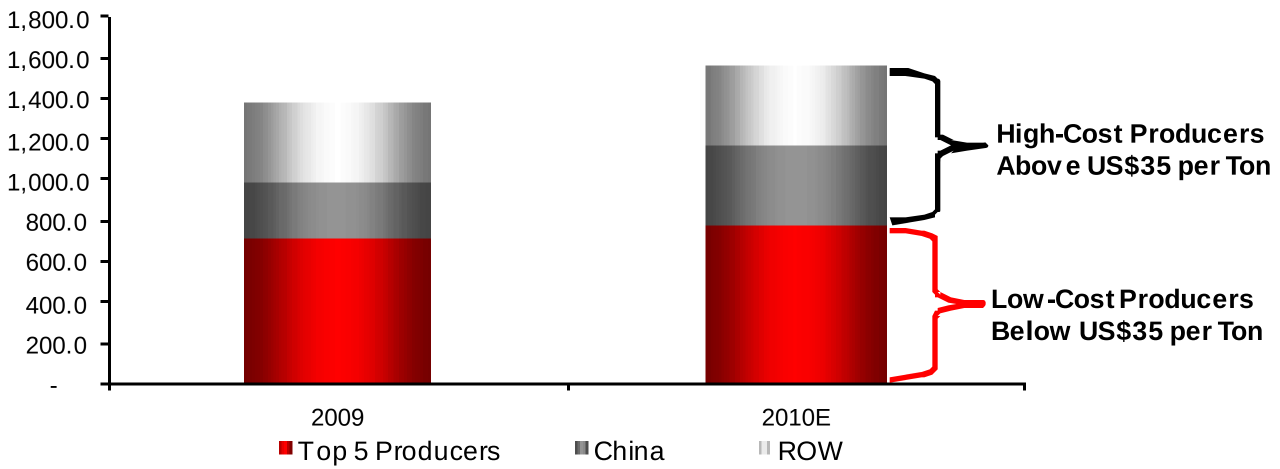
Millions of Tons	2010E	2011E	2012E
Mining Production	15.9	16.6	17.3
Global Demand	19.5	20.3	21.1
Deficit / Scrap Supply	-3.6	-3.7	-3.7
Copper price (US$/lb)- Avg:	**US$3.33**	**US$3.65**	**US$3.65**

Sources: Santander estimates and Bloomberg.

Opportunities: Long Term

- **Substitution of High Cost Competitors**
  - **Riders of ST market tightness will gradually disappear**
  - **Clear example in the iron ore industry**

High-Cost Producers/Low-Cost Producers



Sources: Bloomberg, IISI, Metal Bulletin, and Santander estimates.

- **Consolidation Towards New Segments**
  - **Fertilizers on the spot now; consolidation will take place in next years**
  - **Opportunity to diversify from infrastructure boom to human development process: increasing demand for food and improving diet**

Conclusions

- **Investment returns are at risk in the long run**
  - **Mining is still a cyclical sector: market downturns and extra supply will arrive**
  - **Higher taxation and project delays are a reality**

- **World class assets (first quartile in costs) are key to generate decent returns**

- **Newcomers / Junior companies have a challenging mission**
  - **Lower financial strength to face downturns**
  - **Less access to world class assets and efficient logistics**
  - **Investment community increasingly critical about it: more difficult to raise equity**

- **China was, has been, and will continue to be the engine of demand**

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