International Finance Corporation
World Bank Group

Shared Mining Infrastructure: Too Good to be True?

Trends, Challenges and Opportunities for Private Financing of Mining-Associated Transport Infrastructure in SSA

Pierre Pozzo di Borgo, Principal Investment Officer,
International Finance Corporation

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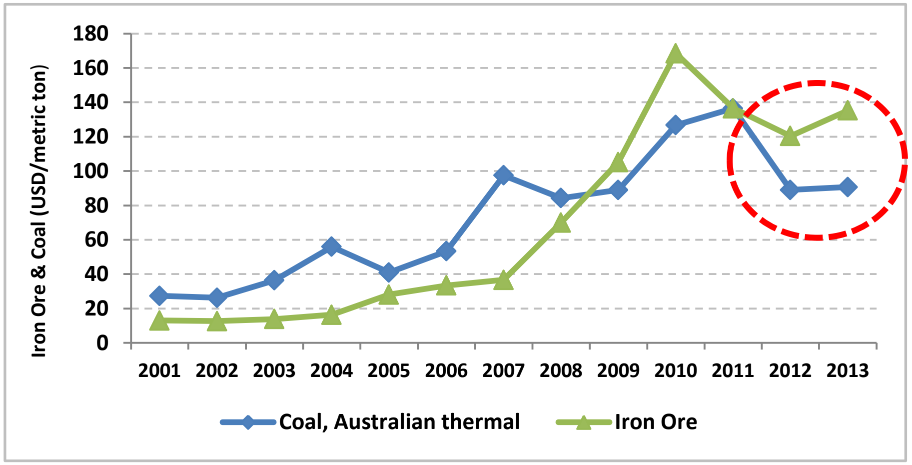
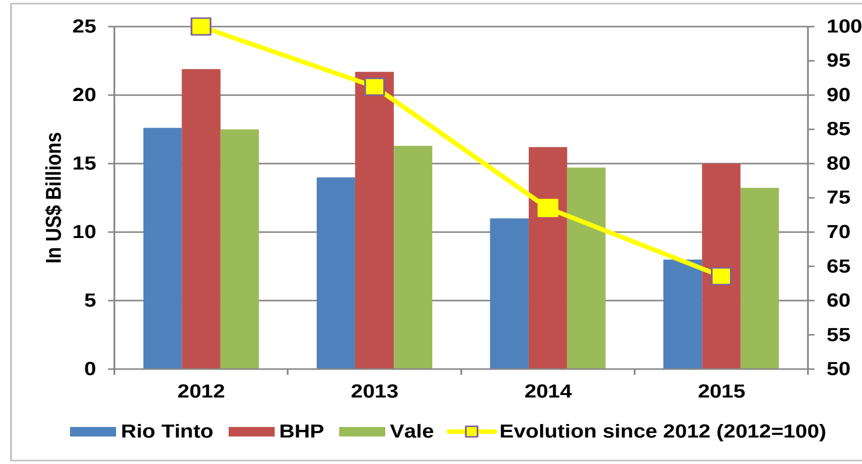
1. Market Trends: Re-focusing on OECD markets & Concentration of Supply & Demand

The mineral "super-cycle" has tapered off with Majors taking the lead on investment scale-backs

Commodity prices remain high, but have stabilized at a lower level

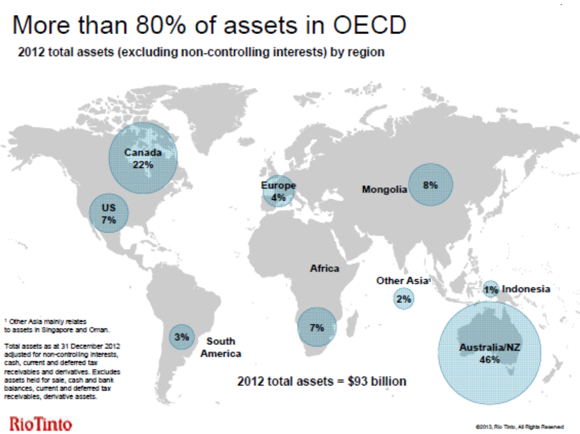


… resulting in a sharp scale-back of Majors' CAPEX plans…



… and a refocussing on OECD countries

Rio Tinto's asset base:



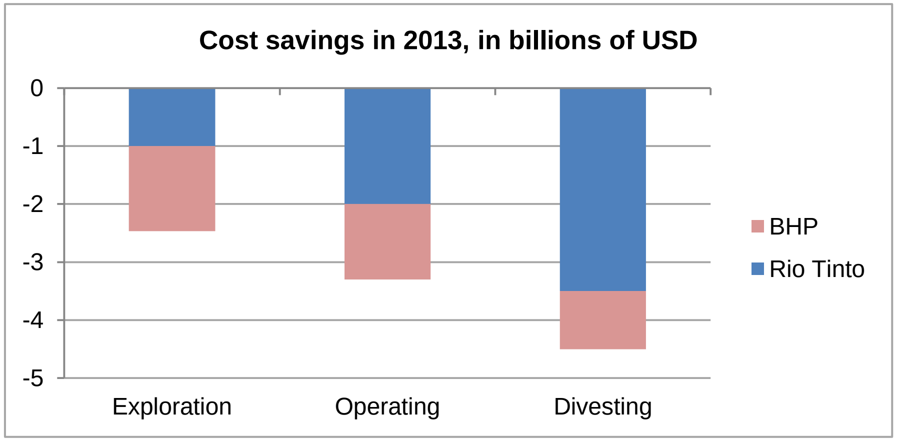
- The Majors plan further CAPEX scale-backs (>-35% between 2012 and 2014).
- The Majors have a renewed focus on (a) low-risk investment environments and (b) existing, brownfield projects, deemed less risky and less capital-intensive than greenfield endeavors (e.g. Pilbara region in Australia).
- High volumes of un-contracted production (Rio: >15% of 2014 iron ore) are likely to increase price volatility (downward).

⇒ **This rapid reversal, driven primarily by decreases in commodity prices, will likely delay large mining projects in SSA (i.e. greenfield and greenfield/brownfield projects).**

1. Market Trends: Re-focusing on OECD markets & Concentration of Supply & Demand

Majors are now fully focused on cost-cutting and increasing productivity from existing mines

Cost-cutting is at the forefront of miners' minds



Free cash flows are improving
- Reducing costs
- Increasing volumes
- Cash proceeds from divestments

Lowering capex

Annual capex expected to **reduce by >20%** in each of the **next three years** (2013-2015)

Strengthening the balance sheet

Focus over the next 12 months on **debt reduction**

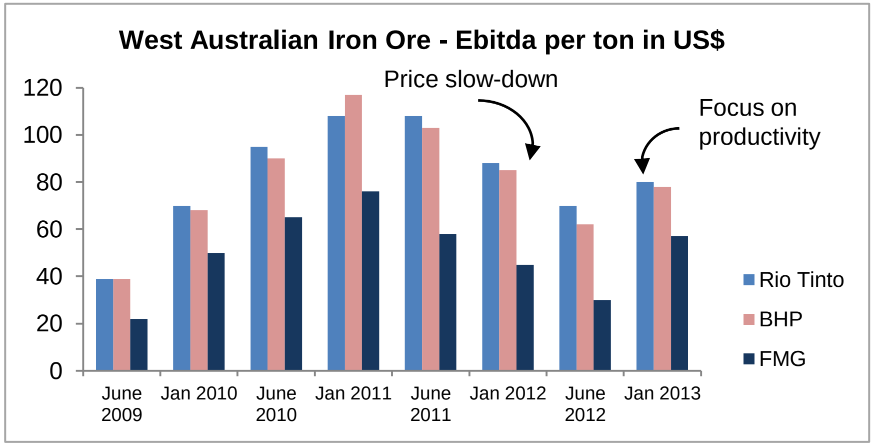
Increasing the progressive dividend

2011: **+34%**

2012: **+15%**

Source: Rio Tinto

As is profit maximization from Brownfield mining investments



Source: Rio Tinto

Whereas a year ago, companies were looking at expanding their mining asset base through developing greenfield projects, the focus is now on:

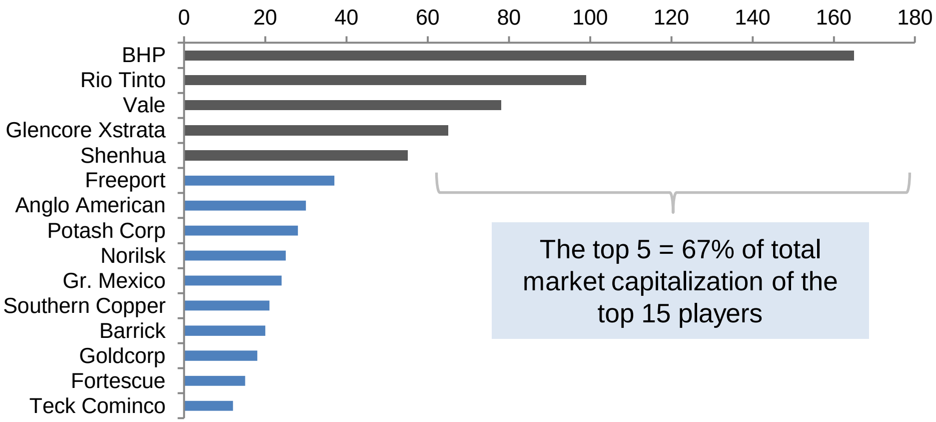
- Reductions in operating costs;
- Reducing exploration and production costs;
- Divesting of non core assets;
- Reducing CAPEX; and,
- Deferring greenfield developments.

1. Market Trends: Re-focusing on OECD markets & Concentration of Supply & Demand

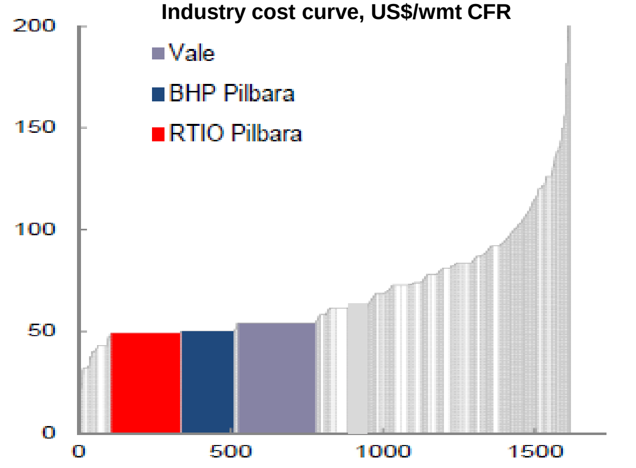
The market has become hyper-dependent on very few key suppliers and one large consumer

Three Majors represent 50% of market capitalization…

Market capitalization at December 2013, top 15 companies (US$ billions)



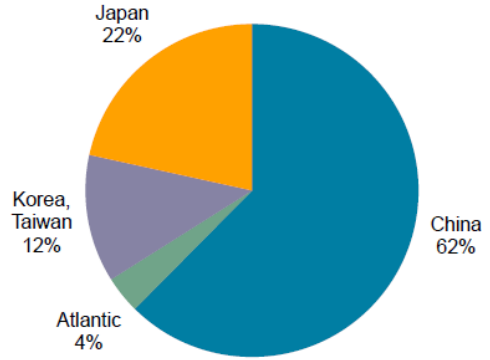
…and are the best positioned players on the cost curve



Source: Rio Tinto

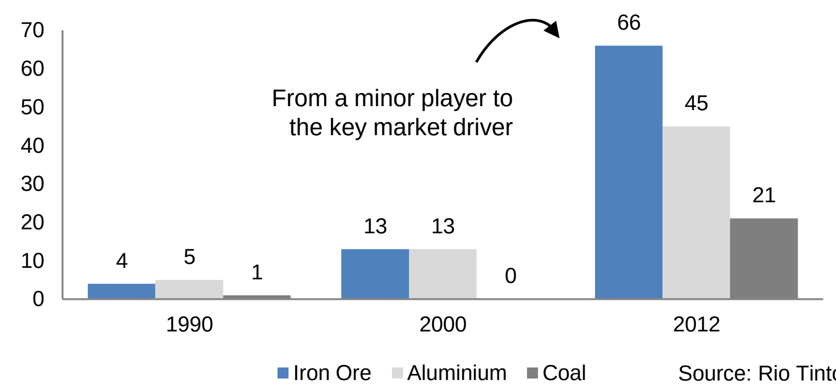
China is fuelling demand growth more than ever, which begs the question of the likely effect of a Chinese economy's prolonged slowdown

Rio Tinto's iron ore shipments by market, June 2012-June 2013



Source: Rio Tinto

China's share of total demand for different commodities



Source: Rio Tinto

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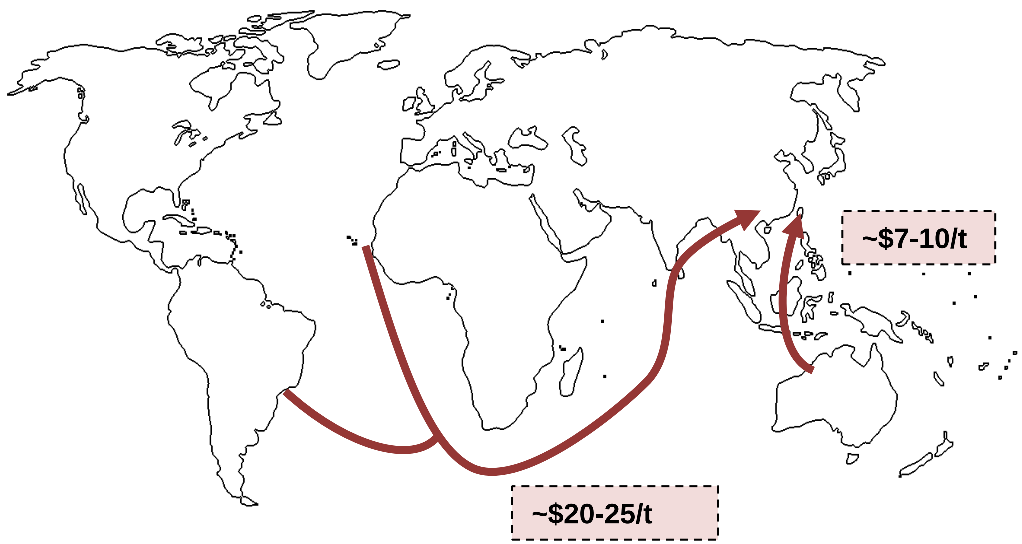
2. What does this mean for shared mining transport infrastructure in Sub-Saharan Africa?

The refocusing on OECD countries (production) and Asia (consumption) makes Sub-Saharan Africa less attractive for now

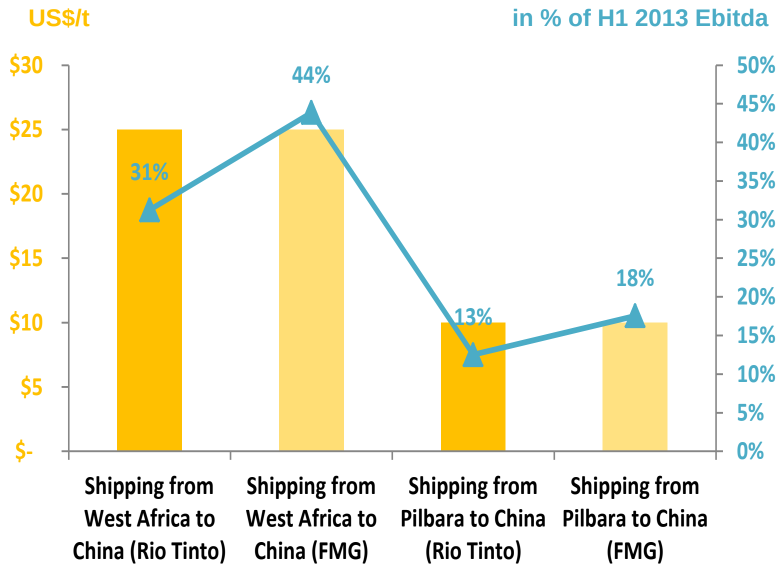
Sub-Saharan Africa is less competitive in terms of transport costs

Transport costs for one ton of C3-C5 iron ore to China



Which has an especially adverse impact in an environment where "every dollar counts"

Transport costs for one ton of C3-C5 iron ore to China



- The differential for transport costs only for a ton of 55% grade iron ore shipped from West Africa or from Pilbara to China is approximately **$14-15/t** (all things being equal).
- In an increasingly competitive environment where every dollar counts, **this has a huge impact on profitability** – transport costs to China equate to anywhere from 13 to 44% of Ebitda depending on where the ore is produced.

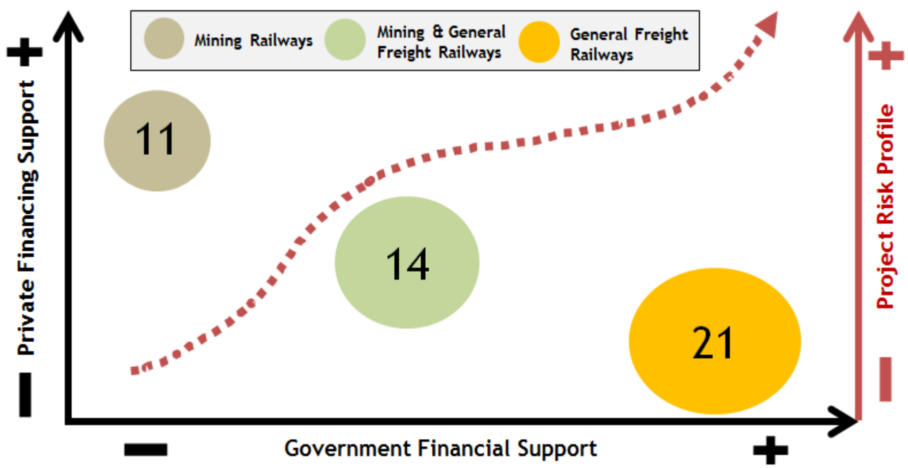
⇒ **Are there still options for non recourse financing of mining infrastructure in sub-Saharan Africa in this context?**

2. What does this mean for shared mining transport infrastructure in Sub-Saharan Africa?

Current trend of favoring brownfield transactions in SSA, whether single or shared-use

Railway Operations	Project Financing Profile (above /below rail investment)	Number of Existing Projects in SSA (excl. SA)	Traffic Thresholds to Reach Bankability (mpta/km of track)	Number of Bankable Projects Using Purely Private Financing	
Dedicated Mining Railways (single or multiple mining users)	Brownfield	4	> 5 mpta	4	**7/11 (63%)**
	Brownfield/Greenfield (50/50)	2	> 15 mpta	2	
	Greenfield	5	> 25 mpta of track	1	
Shared Mining and General Freight Railways	Brownfield	8	Freight >50%; > 3 mpta Freight <50%; > 5 mpta	4	**7/14 (50%)**
	Brownfield/Greenfield (50/50)	6	Freight >50%; > 5 mpta Freight <50%; > 7 mpta	3	
	Greenfield	n.a.	Freight >50%; > 10 mpta Freight <50%; > 15 mpta	n.a.	

Source: IFC



Source: IFC

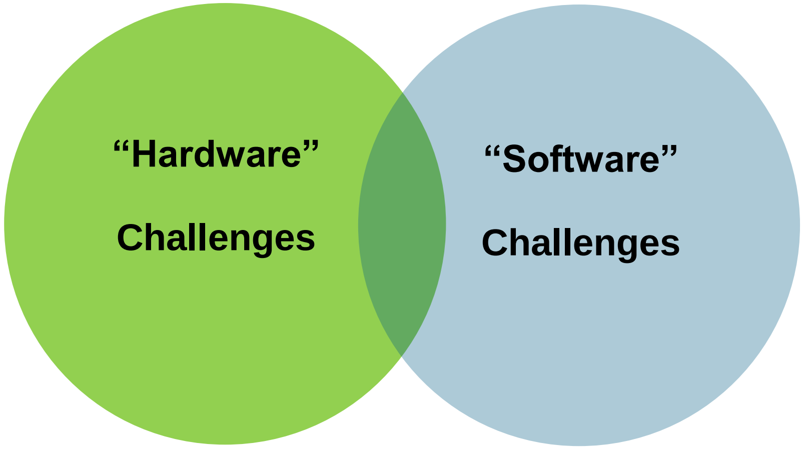
- IFC estimates that in today's market, there are few bankable mining-associated railway projects in Sub-Saharan Africa, of which only 1 is a Greenfield project which will be financed initially using a single anchor client while being designed to accommodate multiple users and usages:
  - ✓ About 11 dedicated mining infrastructure projects (including projects with multiple mining clients), of which 7 are bankable on a pure private financing basis.
  - ✓ About 14 shared mining / freight infrastructure projects, of which only half are financeable on a purely private basis.

⇒ **Is there still a way to harness these bankable opportunities, and in particular the ones based on shared-use concepts?**

2. What does this mean for shared mining transport infrastructure in Sub-Saharan Africa?

Investors furthermore continue to face a number of risks & challenges likned to SSA overall challending investment climate

Investors face both "hard" and "soft" challenges



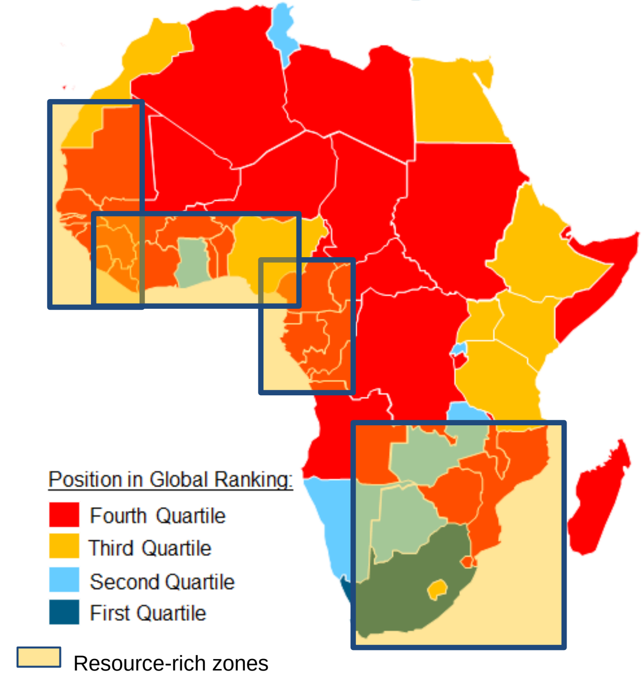
Lack of core infrastructure:

- Power
- Rail
- Roads
- Ports

- Political risk
- Bureaucracy / government capacity
- Underdeveloped legal / regulatory environment
- Corruption
- Lack of skilled labor force
- Social / community issues

As evidenced by IFC's Doing Business report

2012 IFC Ease of Doing Business



⇒ **The combination of (i) a decrease in the risk appetite of the Majors; (ii) the limited number of bankable mining infrastructure projects in sub-Saharan Africa; and (c) the risks linked to the investment environment in the continent make both Greenfield investments and shared use investments extremely challenging.**

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3. IFC's experience: Practical takeaways from the past year

A – Financing: Appetite for mega-projects is finite, leading to large equity needs which only Majors can meet

IFC is involved in a number of relevant mining infrastructure projects underway in SSA, and is seeing a trend of commercial financing maxing out in most cases at around US$1 billion per project

- IFC is engaged on a number of Greenfield and Brownfield mining-associated transport infrastructure projects across SSA.
- In general, IFC is seeing that commercial banks appetite seems to be limited at the ~US$1 billion debt mark, even with good project fundamentals (strong Sponsor, quality off-take, etc.).

⇒ A key consideration for commercial banks is the Termination risk.

⇒ When directly covered by the Government, lenders will often want to mitigate sovereign risk through the use of a Political Risk Insurance (PRI) instrument.

⇒ Most PRI providers are unable to provide, in combination, a cover for >US$1 billion of debt.

⇒ This results in low levels of gearing for the key Greenfield and Greenfield/Brownfield projects (>US$2 billion in equity)

⇒ **Only the Majors can meet such huge investment requirements (US$1-3 billion).**

3. IFC's experience: Practical takeaways from the past year

B – Structuring: Splitting the infrastructure from the mine as a potential bankable solution?

	Idea	Challenges faced
1 **Sources of Capital**	▪ Splitting the transport infrastructure out from the mine would crowd in new investors and additional sources of capital.	✓ From a credit perspective, any investor will above all be considering **the value of the underlying assets** upon which traffic is entirely dependent. ✓ As such, the risk profile is no different: the **quality of the mine** will always be the key credit consideration, along with the quality and creditworthiness of the Developer / Sponsor.
2 **Cost of capital**	▪ Separating the transport piece from the mine would lower the average cost of capital based on the difference in expected returns from the transport investor vs. the miner.	✓ In theory, and particularly in the case of a single-use project underpinned by a strong anchor client, the infrastructure service provider should indeed be content with lower and more predictable returns, given it would get paid before the mining company from cash generated by the mine (higher position in the cash flow waterfall). This theory has yet to be put to the test, however. ✓ Transport provider is conscious of the illiquidity of its assets and limited ability to sell it to other users (market for mining assets is far more liquid vs. constrained for transport companies). ⇒ On a case by case basis this approach could apply, depending on the financial structure of the deal (greenfield vs. brownfield, single use vs. shared use).
3 **Political risk**	▪ Resource nationalism and political frustration can be limited through a shared-use transport piece.	✓ For public & private sectors to reach a compromise under a shared-use access regime pre-financial close (especially if it proposed to be multi-purpose) can be extremely time-consuming and a **deterrent to both mining and transport investors.** ✓ 'Transport infrastructure nationalism' is also a challenge (e.g., multi-usage with passenger & mining lines) which an integrated project has more leverage to realistically address.
4 **Shared-use among miners**	▪ A split transport infrastructure is likely to result in multi-user rail / ports than with a single anchor mine.	✓ Multi-user designs, even when the multiple users are known at the time of Financial Close, are **complex to structure**. Investors would typically have to assess: • The credit quality of several mining companies (+ quantity and quality considerations), as well as the transport service provider; • The level of Increased CAPEX reflecting multi-client or multi use aspects and the associated increased operating risk. • Cross-default provisions between the mines and the transport provider in the documentation, as well as provisions for further mines developed at a later stage.

3. IFC's experience: Practical takeaways from the past year

C – Shared-use can still be a solution, but the presence of an anchor client is an unavoidable starting point for greenfield projects

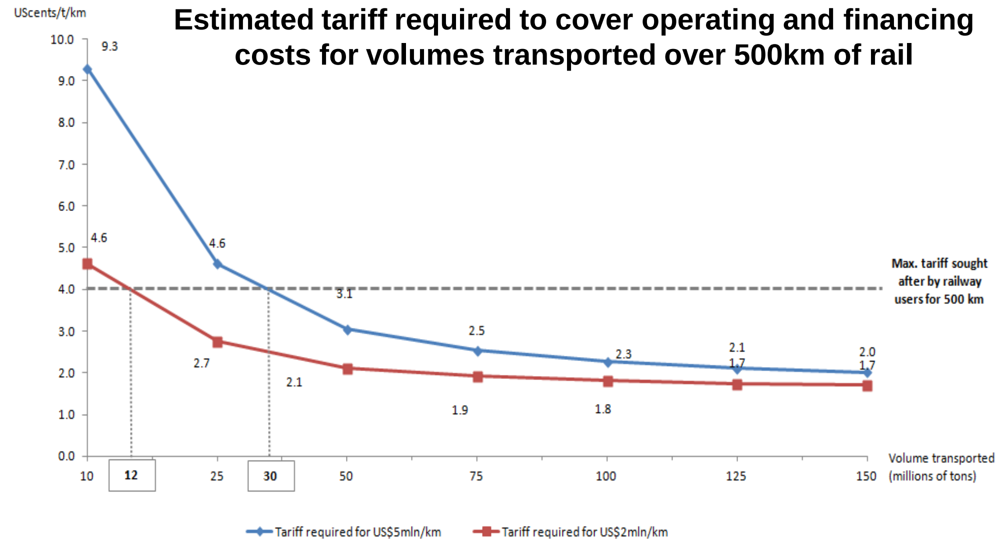
The conclusions regarding the feasibility of financing shared-use transport infrastructure remain the same, despite the change in environment making the possibility of this successfully occurring more remote.

<u>Reminder of key conclusions:</u>

- The **presence of a large mine upon which the entire infrastructure project can be underwritten** remains a *sine qua non* condition to successfully project financing greenfield mining infrastructure-related PPPs.It can then become the transport backbone for the rest of the country/region.
- In practice and when considering the different risk appetites of mining and transport companies, **it still appears that the key investor is much more likely to be a mining co than a private transport company**.
- As such, **shared-use needs to be addressed with the anchor investor in a contractual access agreement and regulatory framework.**
- Key elements of this framework are outlined below:

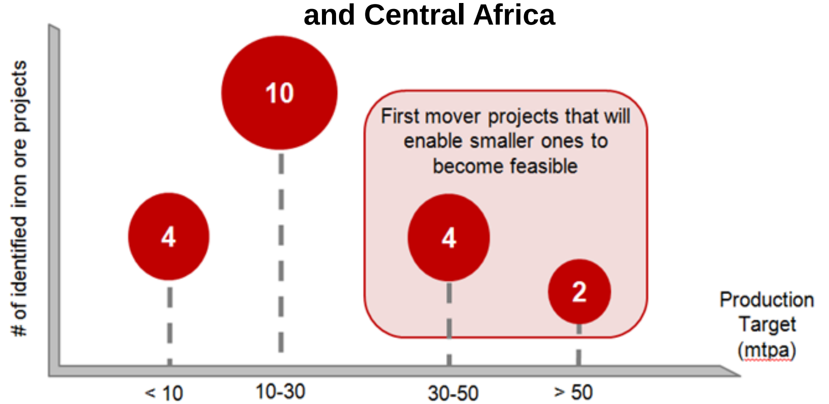
Tariff-setting flexibility + **Long term take or pay contracts** + **Managing capacity expansion** + **Regulation and dispute resolution**

Estimated tariff required to cover operating and financing costs for volumes transported over 500km of rail



*Assumes 70/30 debt/equity, opex of 1.5cent/t/km, and an equity IRR of 15%

Number and size of identified iron ore projects in West and Central Africa



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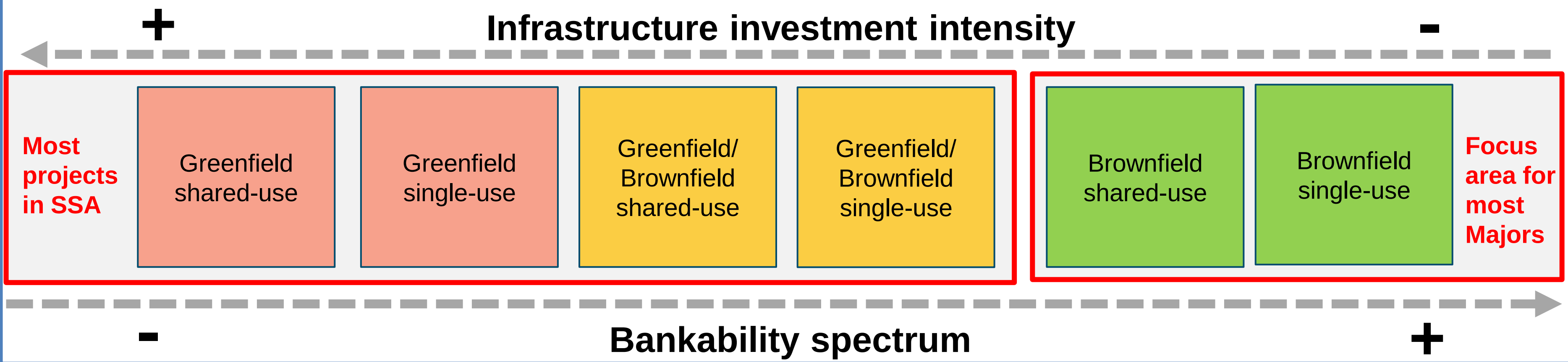
4. Concluding remarks

Greenfield and mixed Green/Brownfield mining projects in Sub-Saharan Africa are currently not well-placed in the market

- Whereas a year ago mining companies were looking at expanding their balance sheets through greenfield investments**, the focus is now on cost reduction and increases in productivity and profitability.** The Majors are accordingly looking to expand in priority brownfield mining investments in well-known, lower-risk, environments in OECD countries.

- **The market has become hyper-dependent, both in terms of supply and demand**:
  - ➢ Supply is concentrated in the hands of a few mining major players, well positioned on industry cost curves and representing a large proportion of the market; whereas
  - ➢ Demand is more than ever dependent on China.

- **This trend exposes some critical issues in the financial structuring of mining-associated greenfield and brownfield projects. It will have an adverse impact on investment potential in Sub-Saharan Africa over the next couple of years**, particularly for greenfield investments as well as for shared-use investments from a project finance perspective.



4. Concluding remarks

Greenfield projects in Sub-Saharan Africa are currently not well-placed in the market

- **At the same time, the Majors remain the only players really capable of developing such infrastructure** – the most realistic option remains an anchor mine underpinning an integrated transport and mining operation developed by a Major.

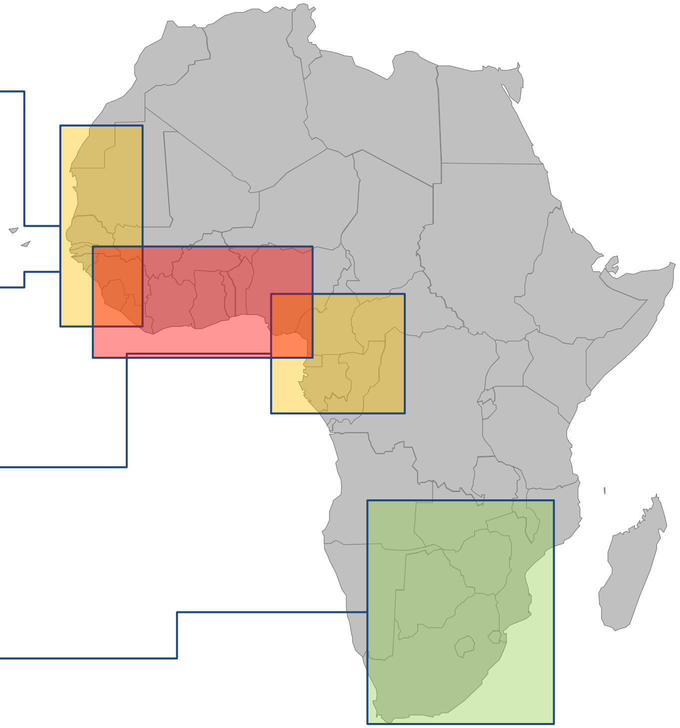
- In a context of divestments and increased differential in transport costs, opportunities in SSA must now generate higher returns to attract private capital.

Iron ore in Mauritania, Guinea, Liberia , Senegal, Cote d'Ivoire

Bauxite in Guinea, Ghana, Nigeria, Cameroon, Sierra Leone

Iron ore in R. of Congo, Gabon, CAR, Cameroon

Coal in Mozambique, Zimbabwe, South Africa, Botswana, Namibia



⇒ The high margin opportunities, and also the most likely to be developed on a shared-use basis, are **regional ones** in specific resource rich areas across the continent.

⇒ The next key steps are: i) to encourage investors and Governments to accommodate **regional networks for essential transport backbones to be built under a regime allowing for future access** by smaller or more remote mines, and ii) **to seize upon existing opportunities to developed less risky medium sized mining projects that can rely on existing brownfield transport infrastructure** that reduces overall project's risk profile.

Thank you for your attention!