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# Prospects for the 2020 iron ore market

## Quantitative analysis of market dynamics and risk mitigation strategies for demand-side players

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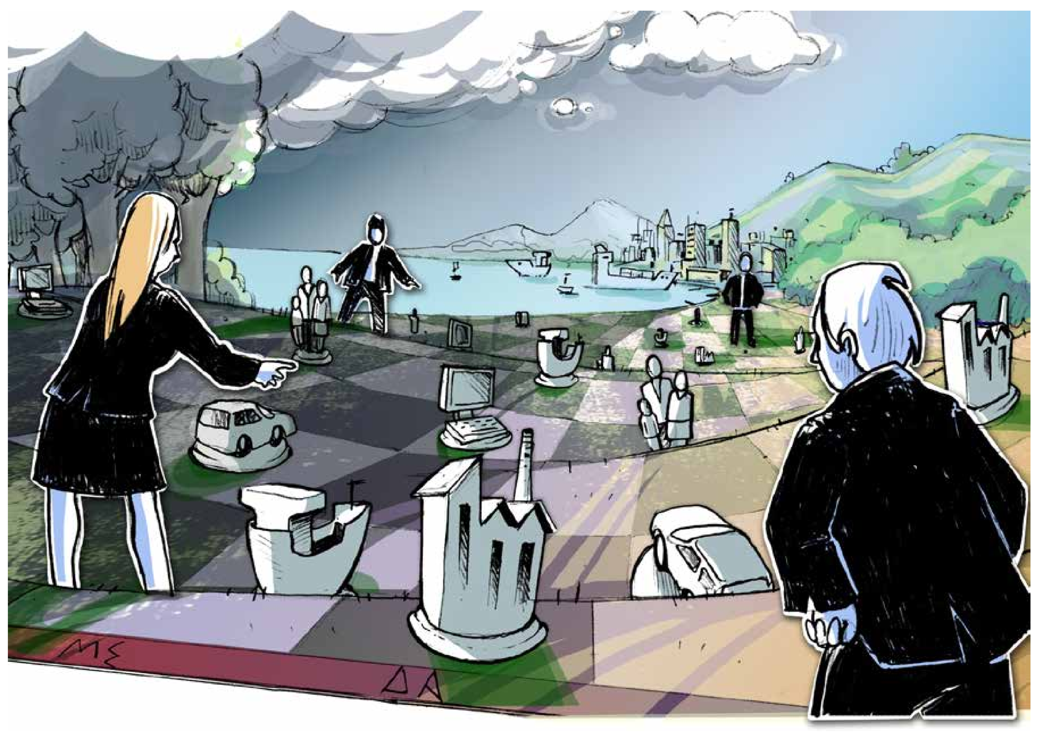
In cooperation with the

**Center for Strategic Business Wargaming**



**Goals:** Quantitative analysis of the effect of recent market developments (e.g., Chinese demand boom, disruptive change of pricing mechanism) and possible exogenous shocks on iron ore trade flows, market prices, steelmakers‘ procurement costs and miners‘ payoffs in 2020.

Quantitative evaluation of captivity of iron ore mines and introduction of iron ore export taxes as risk mitigation strategies for steelmakers and iron ore consuming economies.

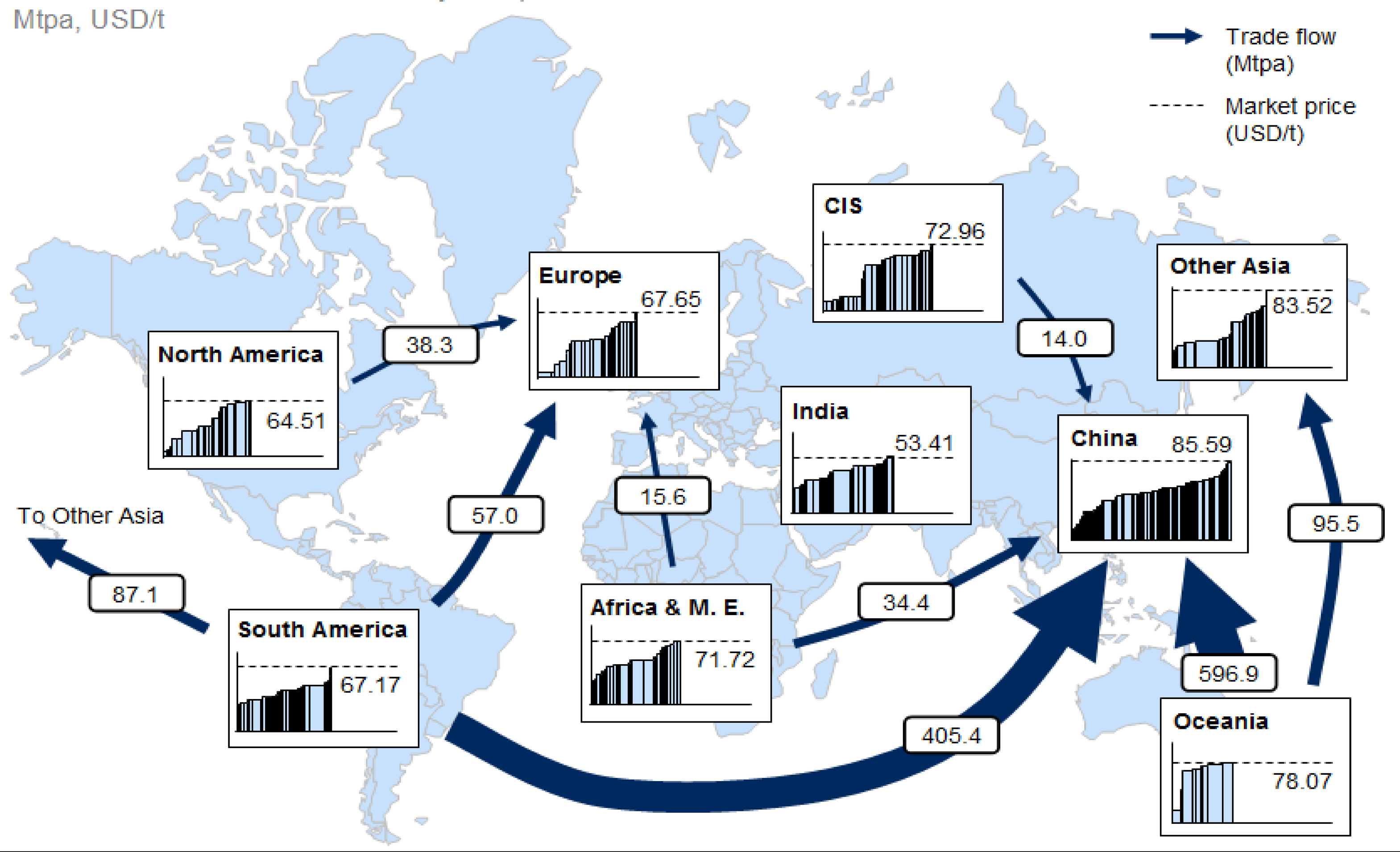
**Approach:** Development of a deterministic nine-region spatial equilibrium model of the global iron ore market with interregional trade flows simulated using a linear optimization approach and regional markets cleared by merit order. Bottom-up modeling of supply volumes and costs for 640 individual mines and brown-/greenfield expansion projects.

**Results:** 2020 market prices can be expected to be higher than in 2009. Freight rate volatility represents a considerable risk for iron ore miners, though not so much for consumers of iron ore. Captivity of mines proves to effectively reduce steelmakers’ iron ore procurement costs as well as their exposure to price volatility. The introduction of iron ore export taxes results in market distortions leading to increased market prices in import-oriented regions.

**The global iron ore market is modeled as a nine-region spatial equilibrium model with trade flows simulated using a linear optimization approach**

Iron ore trade flows and market prices, 2020 base case

Mtpa, USD/t




**The Chinese iron ore cost curve resulting from the simulated trade flows leads to an expected regional market price of USD 85.59 in 2020**

Iron ore cost curve CFR China, 2020 base case