CHINA AND COMMODITIES
FROM PRICE TAKER TO PRICE MAKER?

CITI COMMODITIES

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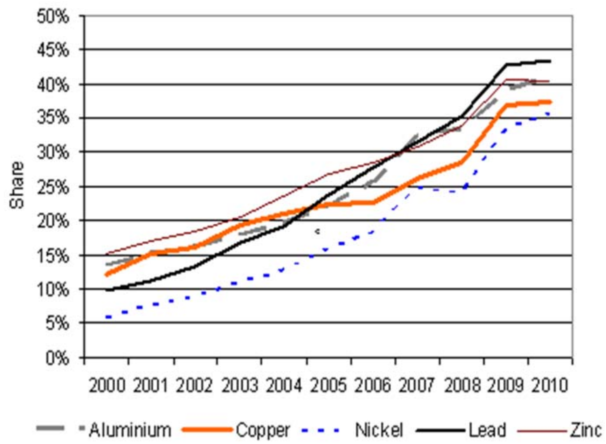
No one can doubt the rise of China in the global economy

- The country has risen to pre-eminence if not predominance in sectors of the global economy
- Sometimes the Chinese economy's influence is seen on the ***BUY*** side, with imports of some commodities dominating global trade
- Sometimes the economy's influence is seen on the ***SELL*** side, with exports in some areas playing a major international role
- And with increased frequency what China does on *BOTH THE BUY AND SELL* sides are closely linked to one another

BUY SIDE: China now the largest importer of key commodities

China dominates demand for key commodities…

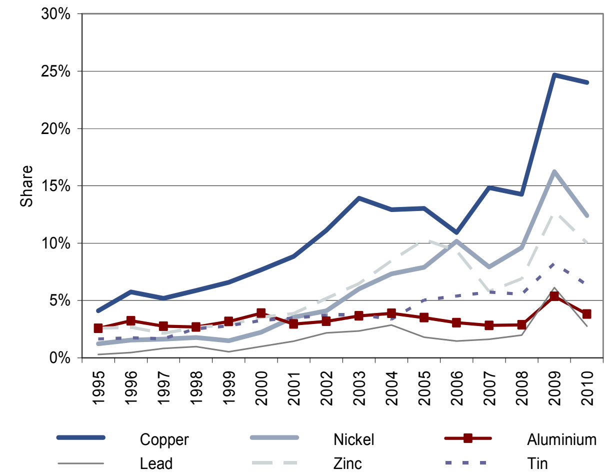
China's consumption as share of world total
Metals



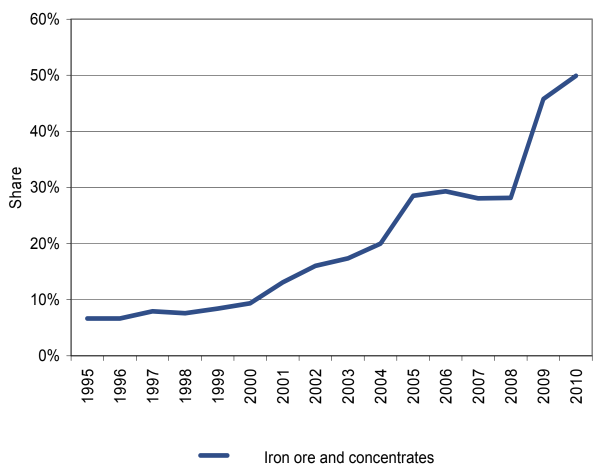
Source: Woodmac, Citi Investment Research and Analysis

…As domestic production can't satisfy demand…

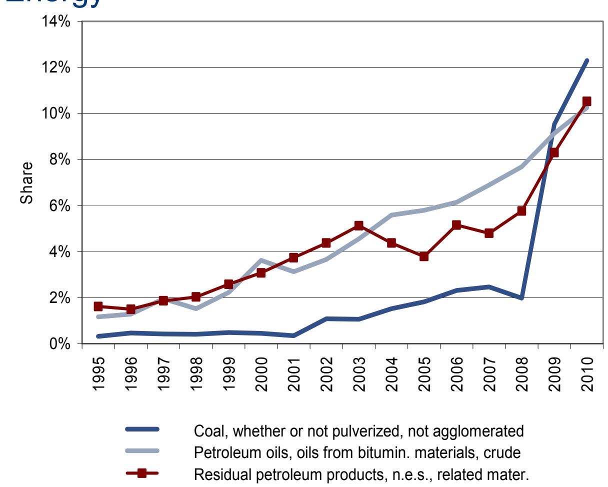
Chinese imports as share of global imports
Metals



Imports as share of global imports
Iron ore and concentrates in its own class



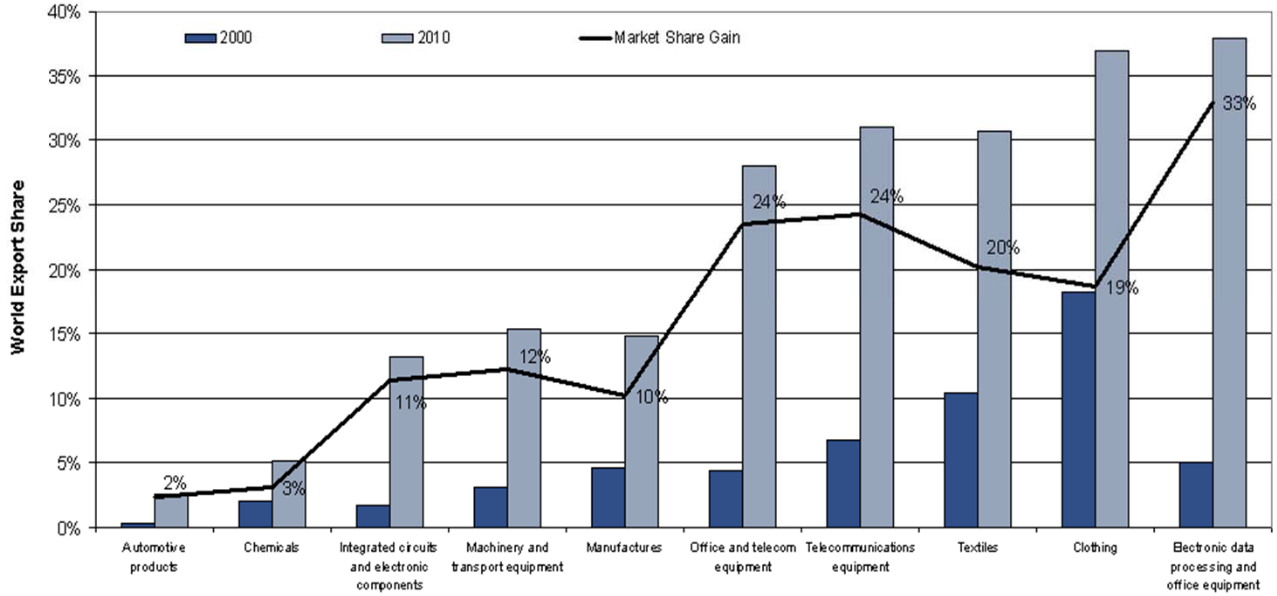
Growing share of energy, but still limited
Energy



Source: UNCTAD, Citi Investment Research and Analysis

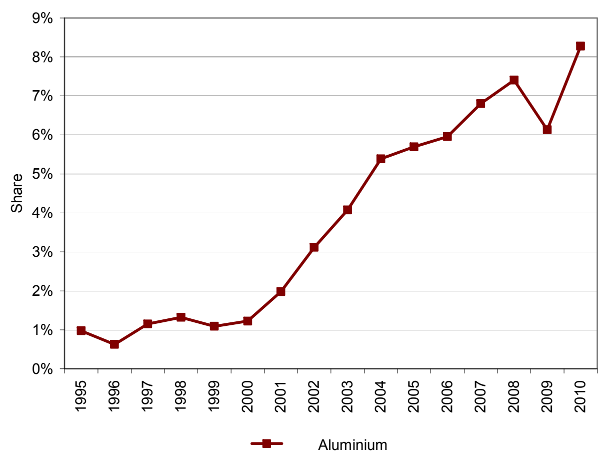
SELL SIDE: China is playing an increased role as well

Stunning growth of China's exports as share of global exports (2000 vs. 2010)…

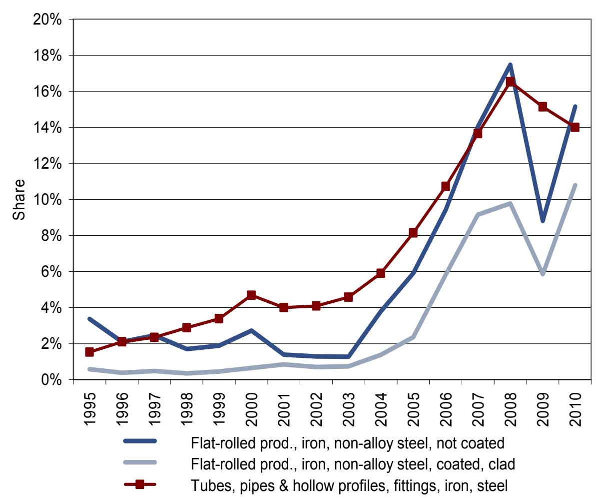


Source: WTO, Citi Investment Research and Analysis

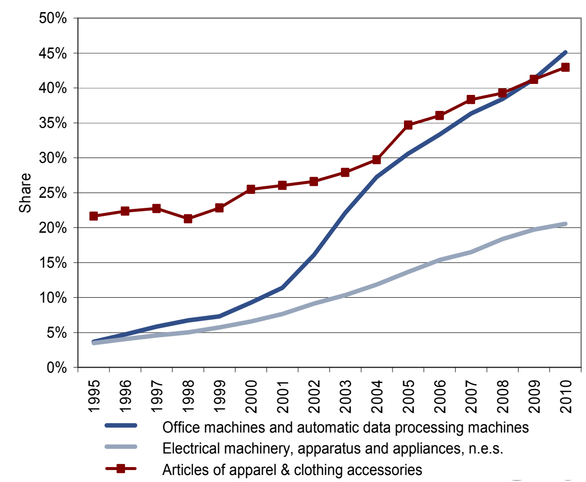
…From raw materials…



…To intermediate goods…



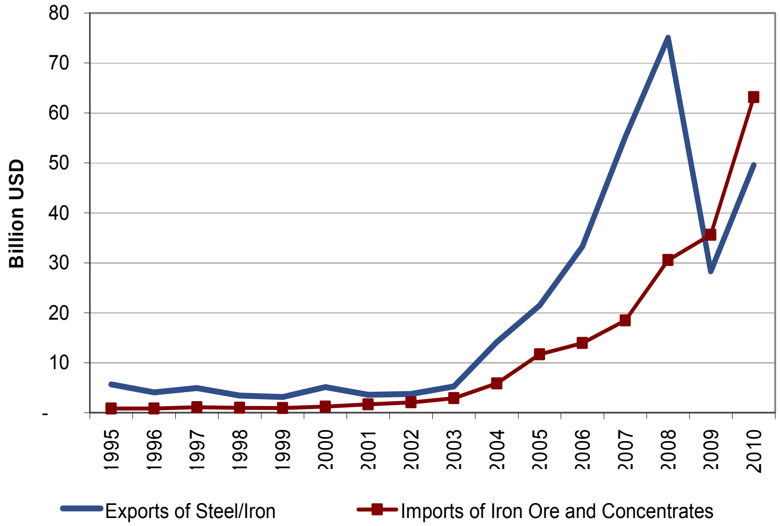
…To final goods



Source: UNCTAD, Citi Investment Research and Analysis

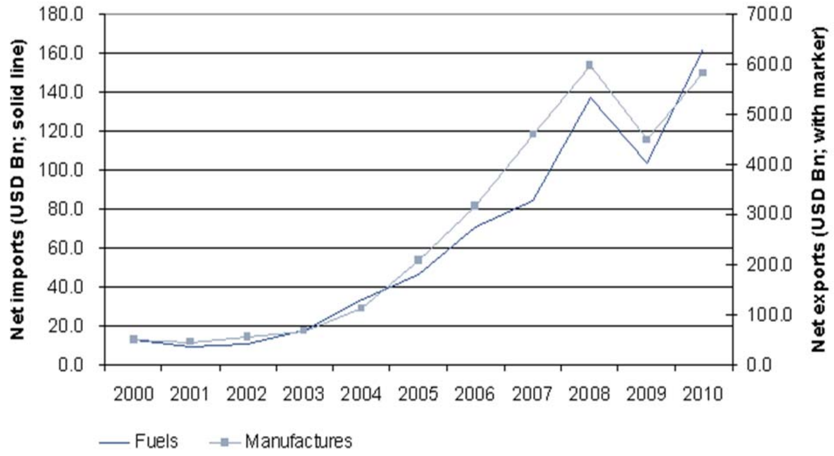
BOTH SIDES: import raw materials, sell/export processed goods

From more direct upstream-downstream movements…
Net imports of Iron Ore and exports of Steel



Source: UNCTAD, Citi Investment Research and Analysis

…To more indirect linkages down the value chain…
Net imports of Fuels and exports of manufactures



Source: WTO, China Customs, Wind (China), Citi Investment Research and Analysis

…Supported by world class transports
Leading world maritime ports by cargo weight (2007)
'000 metric tons

1	Shanghai	China	561,446
2	Singapore	Singapore	483,616
3	Ningbo-Zhoushan	China	471,630
4	Rotterdam	Netherlands	401,181
5	Guangzhou	China	341,363
6	Tianjin	China	309,465
7	Qingdao	China	265,020
8	Qinhuangdao	China	245,964
9	Hong Kong	China	245,433
10	Busan	South Korea	243,564

Source: US Bureau of Transportation Statistics

WHAT DOES THIS MEAN?

- China has in the course of less than 20 years rapidly changed from being a price taker to a price setter
- As noted, prime examples are areas where China is the largest buyer or seller, particularly in the linked bulk commodities and steel
- As is the case of protection of the renminbi and its “undervaluation” so too China’s government is often seen as a ‘manipulator’ of commodities prices
  - Huge government-mandated and some times controlled inventories, with limited transparency on size and whether building or drawing
  - China’s incremental buying can often influence prices
  - Many reports of extra ‘tough’ negotiating style, often with use of influence through generous “pre-export financing” terms, often via actions on other “playing fields” such as arms sales, construction of roads as “sweeteners,” or plain old “arm-twisting.”

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So far no international trading on any local exchange…

Global exchange trading remains dominated by financial centers of the 19th and 20th centuries in the US and the UK, with notable new entrants in Asia which are looking to emerge as major commodity hubs in the 21st century…

LME (London)

- World's largest metals exchange and LME Index considered global 'benchmark' for primary metals*
  - Copper*
  - Aluminum*
  - Nickel*
  - Lead*
  - Tin*
  - Zinc*
  - Steel

Intercontinental Exchange (ICE)

- Electronic exchange for energy and soft commodities
  - North Sea Brent contract
  - ICE gasoil
  - Refined products, natural gas, power/emissions, various soft commodities including cocoa, cotton, sugar and OJ

CME (New York and Chicago)

- World's most liquid oil contract (WTI) and 'benchmark' for agriculture/key grains market
  - Energy
    - Crude oil
    - Petroleum products (gasoline, heating oil etc)
    - Natural gas
    - Coal
    - Electricity
  - Agriculture
    - Corn
    - Wheat
    - Soybeans
    - Softs
  - Metals
    - Gold, Silver, Platinum
    - Copper

Singapore Exchange (SGX)

- Active Asian financial and physical delivery exchange point
  - Fuel Oil
  - Crude Palm Oil
  - Robusta Coffee
  - Copper
  - Aluminum
  - Zinc

Shanghai Futures Exchange (SFE)

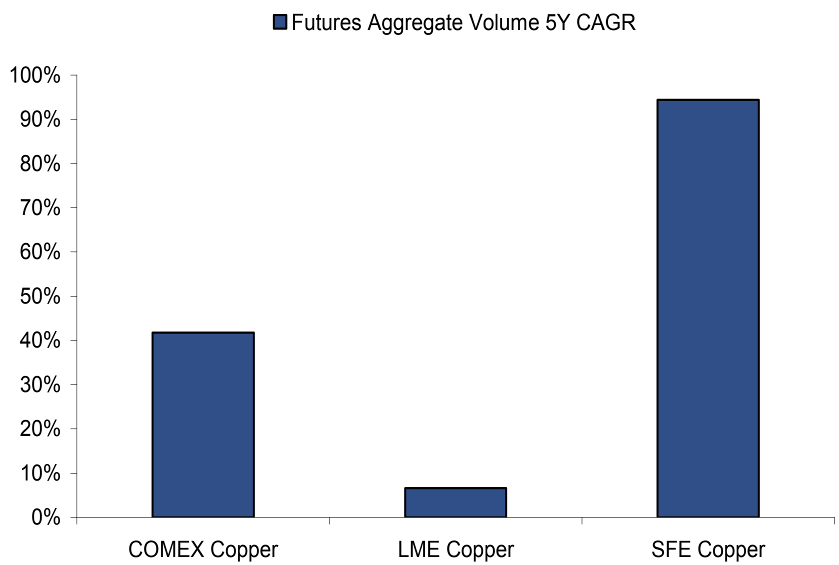
- Emerging Chinese trading hub
  - Copper
  - Aluminum
  - Zinc
  - Lead
  - Gold
  - Steel (Rebar, wire rod)
  - Fuel Oil
  - Natural Rubber

…As China's share of global paper trading on its exchanges is small

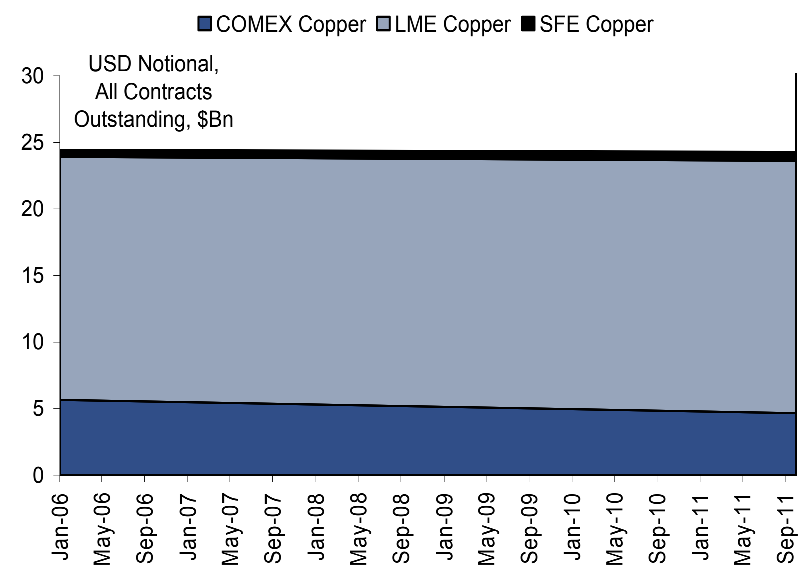
Metals Example

China represents over 40% of global consumption and more than double the amount of core Europe…

The growth has been rapid…
Aggregate volume of traded futures contracts for SFE Copper are the largest in the world…growing faster than both COMEX and LME exchange markets for the red metal…



…But the notional size is dwarfed by others
Western exchanges still dominate trading and price discovery functions
However, metals trading was more volatile this past summer during Asian trading hours

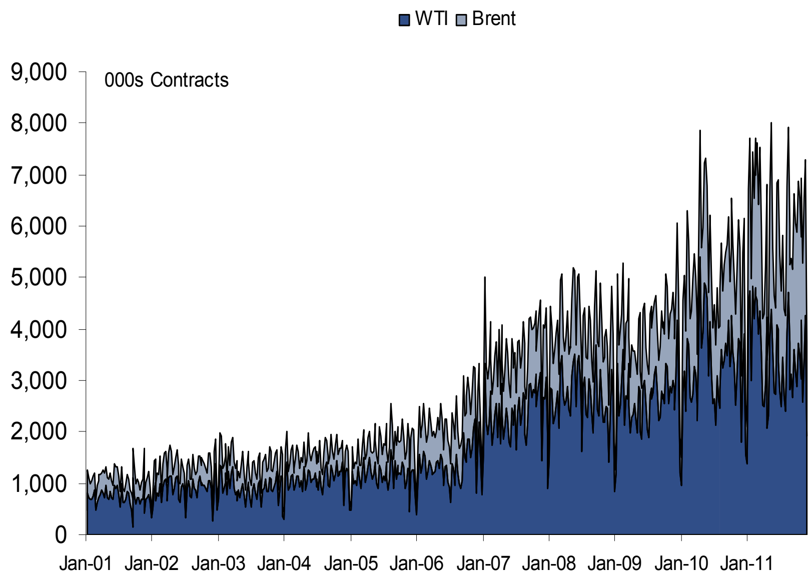


Sources: COMEX, LME, SFE, Citi Investment Research and Analysis, *assume USDCNY cross of 6.75

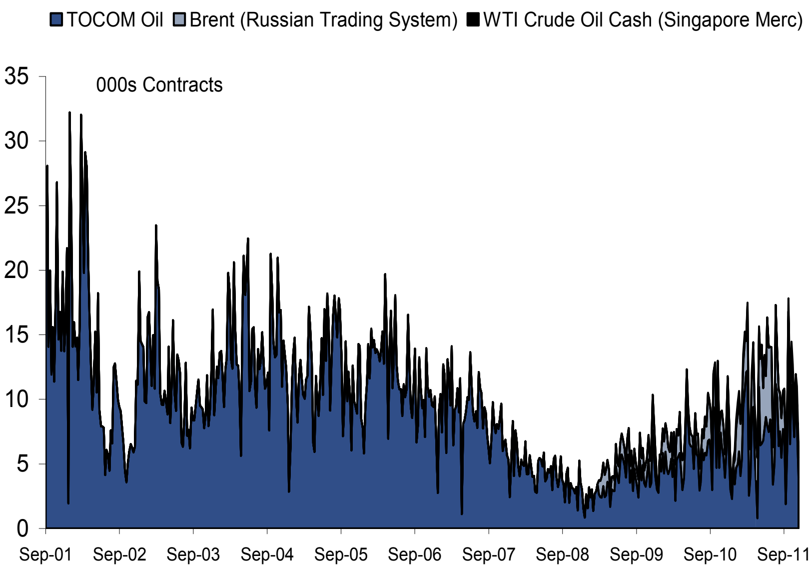
…Even as commodities trading volume has exploded elsewhere

Energy Example

But largely for Western exchange originated crudes on NYMEX and ICE which still serve as the ‘basis’ for global oil market valuations and benchmarking purposes…



…with de minimis futures activity in Tokyo*, Russia and Singapore for the key global energy and transport commodity….



Sources: Bloomberg, Citi Investment Research and Analysis, *Contracts adjusted to NYMEX and ICE sizes

Key Issues Surrounding Asian Exchanges

- Time zone far away from most active trading participants and the talent pool is still building
- Exchanges are only beginning to be more active in the Asian time zone as liquidity builds, but transparency improvements needed for potential participants to understand market depth, including more timely reporting of trading statistics
- Institutional culture that focuses on seeming core competence, having grown from state-owned companies or highly regulated utilities to private enterprises
  - TEPCO of Japan focuses on power generation, local market
  - KOGAS of Korea focuses on gas supply, though it has begun trading spot LNG
- Trading missteps also damped enthusiasm
  - USD 2.6Bn by Sumitomo of Japan in 1996 in copper futures
  - USD 1.9Bn by CITIC Pacific of China in 2008 in FX
  - USD 0.6Bn by China Aviation Oil in 2004 in oil futures and options
- SIMEX oil trading never took off
- Local regulations, particularly in China, still present restrictions (to explain later)
  - Gold and silver structured products took off in China due to targeted ease in regulation and substantial retail customer demand
- Inevitably, some users with favorable contract terms still benefit from the price difference between their contracted price vs. exchange traded prices, so they have less incentives to embrace exchanges

Even where China dominates, pricing occurs elsewhere

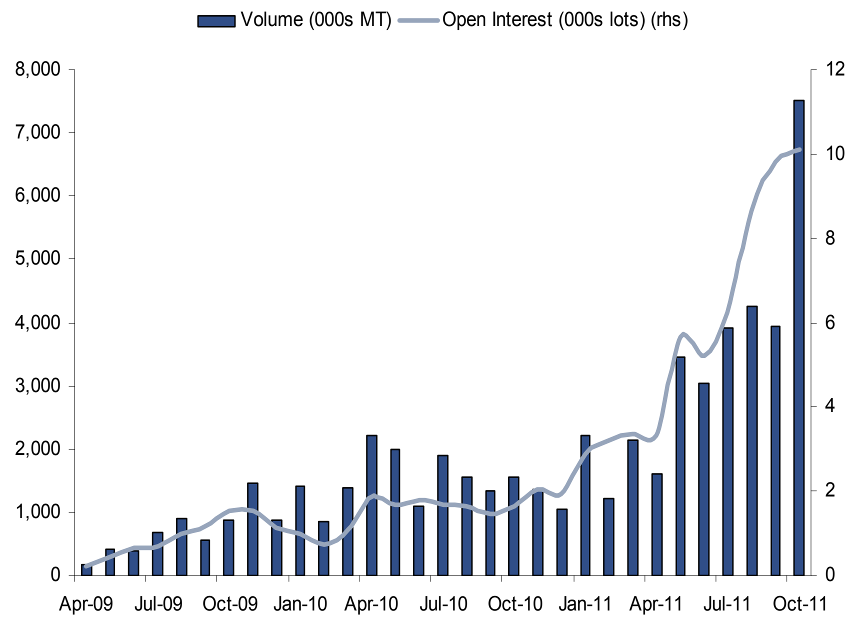
Iron Ore/Steel as Pioneering Examples

- In recognition of China's role, trading takes place on CME, LCH and SGX (Chicago, London and Singapore), but the settlement is based on Chinese trade
- Over the past year SGX has become the dominant trading center
- Settlement is
  - TSI (The Steel Index)
  - CFR (delivered ex-insurance)
  - Physical Delivery is China (a set of Chinese ports)
- BUT, while Chinese delivery sets prices, there is as yet no liquid instrument traded in China
- A similar situation exists for thermal coal, coking coal, freight, where contracts are even less liquid
  - Example: Despite nearly 50% of global imports, exchange trading of iron ore may represent less than 10% of all iron ore bought, though the resulting price-discovery does help set contract prices
    - Most transactions are still bilateral, either through long-term contracts or direct negotiations

How did this happen?

- Traditionally **iron ore** prices were set annually under long-term contracts (does this sound like LNG?)
- Market was dominated by 2 producers: Australia and Brazil and two sets of buyers (Japanese and European mills)
- As China replaced others as the major steel producer, new sources of iron ore arose (India) and raw materials needs started to be based on incremental spot sales
- By 2008, 40% of traded iron ore was sold to China; but traditional suppliers refused to acknowledge spot market (sounds like Gazprom, Qatar in global gas today?)
- In a coincidental trend, price providers started developing indices (The Steel Index, Metal Bulletin Index, Platts index), with common specifications: 62% of Fe ore fines, so now TSI CFR delivery in Chinese ports is standard
- Swaps trading began and clearing began, especially on LCH Clearport and SGX
- Spot grew, helped by dissatisfaction with highly fractious bilateral negotiations
- Bilateral quarterly contracts that subsequently developed to replace annual contracts have evolved quickly to settle based on spot price indices instead

The SGX emerges supreme

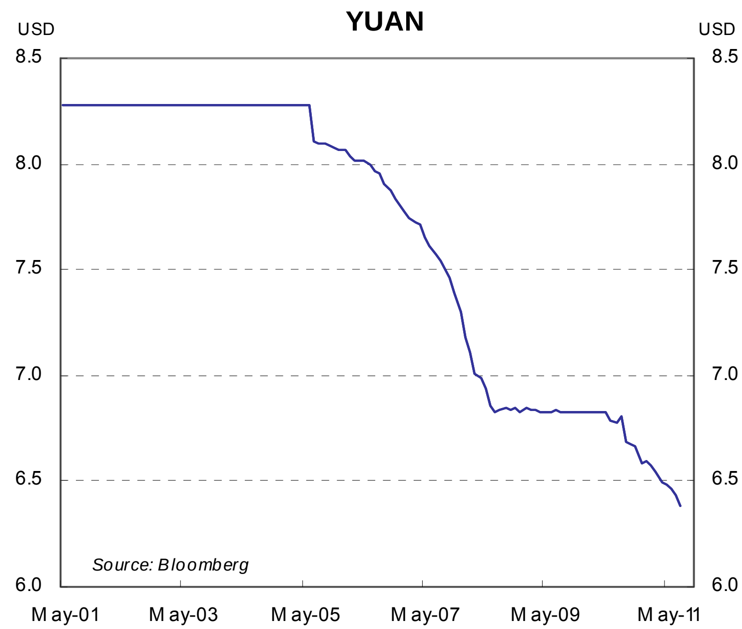


- Instead of Chinese exchanges, the SGX iron ore now reigns
- Spot transactions become meaningful in Fall 2010
- Market softened this year and Chinese demand weakened (Chinese with ½ of global demand, saw demand fall 30% in October)
- Interest in derivatives sky rocketed by producer and consumer (steel makers) hedging
- SGX becomes main exchange, but LME and CME also provide
- Still a small fraction is exchange traded (7.7-mt in October vs. global trade of 11 bn mt/yr), but liquidity is growing rapidly

Sources: SGX, Citi Investment Research and Analysis

What's missing?

- If Chinese ports are the settlement point of Iron Ore contracts, and China's economy is the main factor in pricing iron ore, why has China (e.g. Shanghai Futures Exchange) failed to become the paper trading epicenter?
- What China has?
  - Large exchanges with increasingly large volumes of trading
    - Shanghai Futures Exchange (metals, steel products, fuel oil, rubber etc)
    - Dalian Commodity Exchange (corn, coke, soybean/products, beans, palm oil, polyethylene/ products)
    - Shanghai Gold Exchange (gold, silver, platinum)
- What China lacks?
  - Relaxation of bank ownership and trading restrictions by foreign firms
  - Freely convertible currency
  - Guaranteed repatriation of profits
  - Secured property rights in financial instruments and physical holdings/deliveries
  - Legal protection for business functions
  - Clearing mechanisms that are transparent and assure counterparty confidence
  - Assurance of counterparty credit/risk sharing



Where might Chinese exchanges eventually succeed?

<u>Other factors that could lead to more liquid trading and effective price-discovery globally:</u>

Liberalized Import/Exports

- Deliverability is not restricted, enabling physical trading that also underpins financial trading

Liberalized prices wholesale/retail

- Price changes can pass through the value chain (ie, hard to do flow trading, price-risk management when government decides when to change prices – a regulatory arbitrage)

Restriction on participant size

- No single player completely dominates the market and renders the market "uninteresting"
- ie, no monopoly or very concentrated oligopoly on the supply side, or no monopsony or similarly concentrated oligopoly on the demand side

Commodities that appear to be more ready for trading

The "Iron + Coke = Steel" trinity

- Iron ore – global dominance in demand and imports comes with bargaining power globally
- Steel – many active participants/users and no price caps downstream, enabling pass through of price movements and hedging
- Coking Coal – third leg of the "iron-plus-coke-to-steel" making stool
- Freight – key to facilitating logistics (even when China dominates global trade, the Baltic Dry remains the international benchmark)
- But, with three major iron ore producers globally, but a fragmented consuming industry in China that has hundreds of firms, producers still have certain market power that could slow market liberalization efforts that are unfavorable to them

Thermal Coal

- Chinese coal demand and prices already drive the regional benchmark (Newcastle), whose movements flow through to other global coal prices such as API2 and API4

Others

- In metals, there are many participants and no price caps, but certain trade restrictions can hinder progress (eg. bauxite, zinc)

- LNG could be an interesting case…

Why could China become an international gas hub?

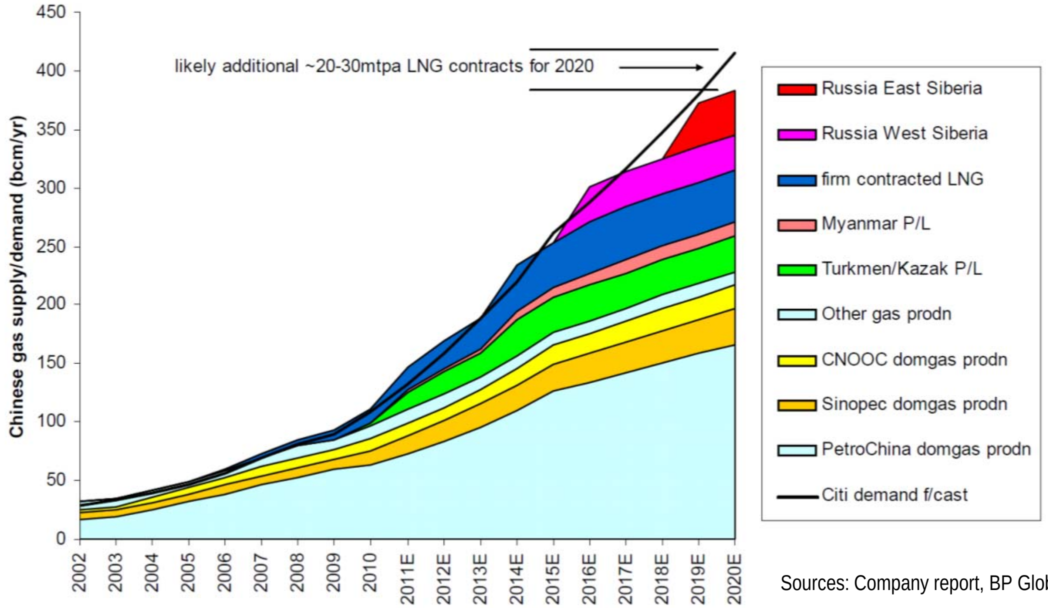
Asia growth markets are challenging oil-linked contracts

Source: Bloomberg, NASA

- Traditional oil-linked contracts come from energy deficient Japan, Korea, Taiwan
- India, China have indigenous oil/gas output, both ending controlled prices.
- Both seek burner tip nat gas prices.
- China imports from FSU countries (Turkmenistan now, Uzbekhistan soon) with effectively “stranded” gas, with floor price Russian domestic prices.
- Neither country is likely to tolerate full oil-linked contracts long term.
- 2010 summer spot LNG traded at 55% of European, Asian oil-linked contracts.
- 2011 prices surged on Fukushima disaster, tightening market, but unlikely to last
- Australia producers could challenge traditional Mid East contracts.

Chinese demand/domestic supply are soaring…from a low base

Chinese gas supply-demand balance



Sources: Company report, BP Global Energy Statistics, Citi Investment Research and Analysis

Demand

- 12th Five Year Plan calls for 260Bcm/yr of demand by 2015
- Rapid rise of residential and commercial use, with some recently constructed buildings already having gas pipes even when not having gas source
- Growth of gas-fired power generation in concert with other clean energy sources
- Displace the use of industrial crude oil with gas

Domestic Production

- Onshore relies on Sichuan basin but supported by Tarim, North China and Songliao, including associated gas from oil production
- Ordos' rise driven also by gas pipe network development (eg. the major West-East pipeline)
- CBM development has been slow due to gas quality issues
- Shale takes time due to technology, geology and infrastructure issues

Pipeline imports

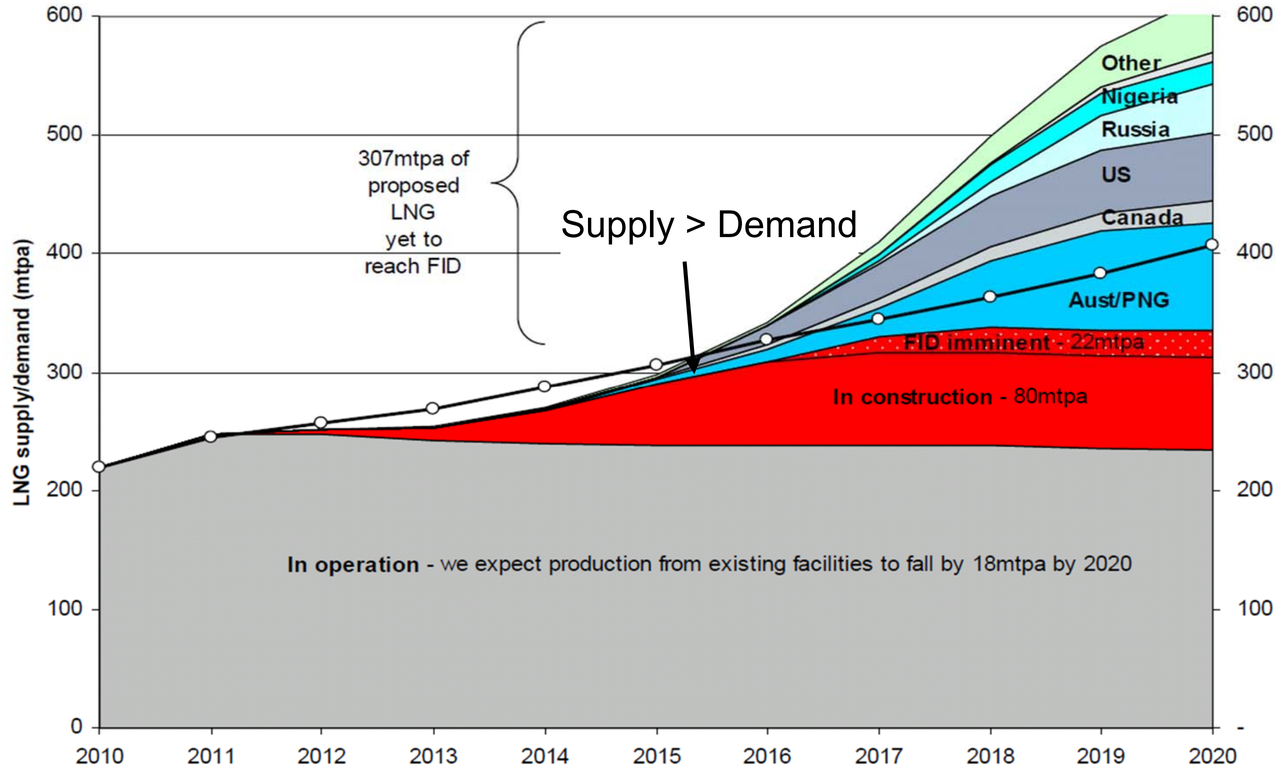
- Turkman/Kazak pipeline provides more supply in phases
- Myanmar pipeline
- Russian imports not finalized but still expected, given China's needs and Russia's stranded gas in East Siberia

LNG

- Expect 4.9Bcf/d of capacity by 2015; 12-15% of global demand should improve bargaining power

Global supply gains could rewrite LNG pricing

LNG Supply-Demand Balance



Sources: Citi Investment Research and Analysis

- By 2015, China's market power would grow, as natural gas consumption could reach 260Bcm/year, eclipsing Korea and Japan combined, if the goals of the 12th Five Year Plan are met
- Beyond 2015: global LNG balance loosens (new Australia, US, other projects reduce market power of suppliers
- Huge recent gas discoveries (e.g. East Africa) should further add to the "pipeline" of projects
- If global shale gas realizes its potential, supply could greatly increase, substantially reducing the bargaining power of key gas exporting nations, although a "gas-opec" may develop

A Chinese international gas hub?

As China rapidly becomes a major incremental producer/buyer of internationally traded natural gas, by pipeline and LNG…

- Increased competition between suppliers reduces monopolistic market power
  - Russia, Qatar individually cannot affect the market with new spot sales from companies
  - Rapidly growing domestic gas output reduces dependency on individual import source
  - New wave of LNG from Australia, multiple new sources (2015-18) should coincide with further growth of local markets
- Larger and more integrated local market should better reflect fundamentals, facilitating price-risk management
  - Rapidly growing internal pipeline system, mostly delivering to power generators distribution
  - Power sector provides alternative pricing of in thermal coal, but thus far lacks market-based pricing of coal or of power transmission.
- Government has limited interest in oil linked pricing
  - As in iron ore, China as largest importer has no interest in following Japanese style prices
- Growing calls to liberalize system and emerging
  - Retail price caps caused substantial refining/ power gen losses for both state-owned and private firms, as well as retail shortages, increasing urge to integrate retail/wholesale markets
  - Liberalization inevitably leads to the loosening of trading restrictions

Where there's a will…

Relaxation/Removal of Restrictions…

- Relaxation of foreign bank ownership and trading restrictions
- Freely convertible currency
- Guaranteed repatriation of profits
- Secured property rights in financial instruments and physical holdings/deliveries
- Legal protection for business functions
- Clearing mechanisms that are transparent and assure counterparty confidence
- Assurance of counterparty credit/risk sharing

… Would pave way for Chinese marker to become the global gas price setter

- Platts' Japan/Korea Marker (JKM) assessment already provides useful price discovery
- With global spot market emerging with multiple private company sellers, state-owned monopolies should be forced to follow, lose their role as price setters and become price takers
- A spot market and a forward market should rapidly develop for hedging and project finance purposes
- If Chinese authorities learn the right lessons, Chinese exchanges could dominate the emerging benchmarking business

Appendix A-1

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