

COMMODITY TRADING HUBS

Singapore's role and proposition

The business of commodity trading has grown dramatically over recent decades. This paper outlines the underlying reasons for this growth, the vital role commodity trading plays in the global economy and the benefits this brings to participants and the wider society. It details the nature of commodity trading activities and explains how they are typically organised to achieve greatest effectiveness. Along with the rise in Asia's share of commodity production and consumption, the paper provides further insight on the role and benefits of commodity trading hubs within the region and Singapore's prime position to support the needs of growing economies across Asia.

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Executive summary

Each year around US\$10 trillion of commodities are produced and consumed¹. However commodities are rarely produced and consumed in the same place or at the same time - a complex value chain including refining, processing, storage and shipping is usually required to get them to the right place.

Linking these value chain elements together is commodity trading. Commodity trading enables the transition of commodities from the mine or field gate to the factory door and end consumer. Commodity trading ensures the right product turns up in the right place at the right time and at the lowest cost.

Companies participate in commodity trading in different ways. Some companies may simply sell or buy their products through long term contracts. Others seek to take advantage of flexibilities in commodity flows and optimise how their assets are utilised. Commodity trading helps make markets more efficient and reduce business costs.

Commodity trading is distinct from the industrial activity of commodities firms. It has a different economic model and different risks that need managing, and therefore requires different types of skills. For that reason many companies put their commodity trading activities in a standalone unit, forming a centre of excellence that pools skills across trading, marketing, logistics and risk management. Centres of excellence are often located in commodity trading hubs.

There are a number of commodity trading hubs around the world, including Chicago, Houston, Geneva, London, New York, Singapore and Hong Kong. They offer critical access to a participant-network of companies working in the commodity sphere which allows business relationships to be built and transactions to be originated, and to the sophisticated financial and legal infrastructure required for trading. In addition, they act as a magnet for people with the specialist skills in commodity trading, and particularly the right education and global language skills that companies need.

Asia's share of global commodity production and consumption is rising and more commodities are being traded during the Asian time zone. Singapore is playing an important role as a commodity trading hub for Asia. By bringing more companies into one place and facilitating trading, Singapore is helping to improve liquidity in the Asian commodity markets. That adds value for everyone as commodity costs are reduced, supply security is increased and better risk hedging options become available.

¹ Source: UN COMTRADE, IMF Price data, USGS, Malaysian Rubber Board, MIT Economic Atlas, International Cocoa Organisation, EIA, BP Statistical Review, Oliver Wyman analysis

SECTION 1

Commodity trading plays a vital role in the global economy

The commodities industry plays a critical role in the global economy. Each year around \$10 trillion of commodities are produced and consumed, across different asset classes of energy, metals and agricultural products².

Commodities are rarely produced and consumed in the same place or at the same time. Production occurs in specific resource-rich locations that are often less accessible and far away from major consumption centres. Consumption patterns can quickly shift, as can production output in particular locations. Supporting this global model of production and consumption is a complex value chain including refining, processing, storage and shipping. This value chain ensures that the right commodity is delivered to the consumer in the right form (e.g. the right quality grade or mix), in the right place (e.g. at the 'factory-door' rather than thousands of kilometres away) and at the right time (e.g. just-in-time to match seasonal or other unexpected fluctuations in demand).

Historically many companies undertook these value chain activities in an integrated 'tram-line' business model. An example of such a 'tram-line' model would be an oil company that does everything from exploring for oil to selling the refined product to motorists at its petrol (gas) stations. Nowadays, pure 'tram-line' models are less common and there are many different companies that specialise in different aspects of the value chain. For instance, some companies process far greater volumes than they produce and buy the extra volume from other third party producers who focus on exploration and mining. Specialisation drives scale efficiencies, which drive down costs.

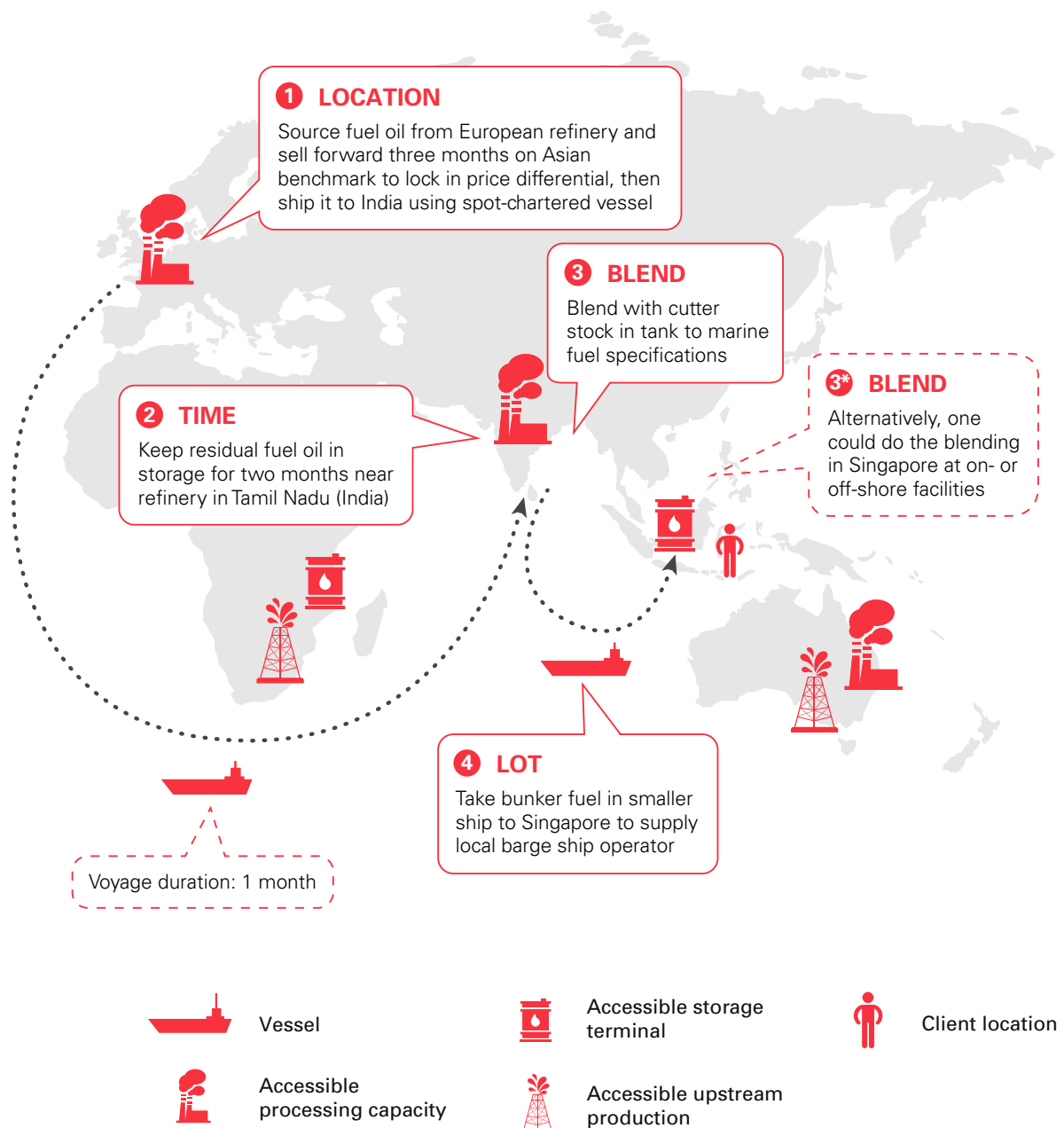
Linking these companies, and the broader value chain, is commodity trading. Companies buy and sell the commodities they need in a global market place, trading with those companies that can offer them the best terms. Amidst the complexities of global demand-supply mismatches, commodity trading enables great flexibilities to the way companies can buy (or procure) and sell (or market). If supply from one source is disrupted, consumer companies can quickly turn to other sources. If demand, and willingness to pay, suddenly rises from buyers in another location, producers can shift where they sell and maximise margins (Figure 1 provides an example of commodity trading in action). Likewise producers can diversify their sales and give themselves more demand stability.

² Source: UN COMTRADE, IMF Price data, USGS, Malaysian Rubber Board, MIT Economic Atlas, International Cocoa Organisation, EIA, BP Statistical Review, Oliver Wyman analysis

Commodity trading plays a vital role in the global economy

This flexibility benefits not just industrial companies but also end consumers and workers. In many countries, consumers may now be more assured that they have access to energy, food and a whole host of other consumer goods all year round without stoppages in supply and at relatively stable prices. This stability of demand and supply through diversity of buyers and sellers means that companies can invest with greater certainty and create more employment.

Figure 1: Example of energy commodity trading in action



SECTION 2

Different ways for industrial companies to participate in commodity trading

Industrial companies that produce or consume commodities can participate in commodity trading in different ways. At its very simplest, commodity trading is selling when the commodity is ready for sale or buying when the commodity is required for consumption. However many industrial companies are more sophisticated than this and look to both plan ahead and improve margins through commodity trading.

Companies can choose from a range of commodity trading models. The choice of model is driven by a range of factors including the companies' broader business model (including size and complexity of their product flows relative to their overall industrial activity) and their risk appetite (e.g. some companies have minimal risk appetite and use commodity trading to hedge out as many risks as they can whilst others have high risk appetite and use commodity trading to enhance expected returns).

Figure 2 shows the most common trading models, arranged by level of sophistication.

All of these trading models starting from the basic stream-based trading model involve marketing to customers and developing trusted relationships between the seller and buyer. They also all include an element of logistics management such as route-planning and coordinating real time movement of the physical commodity over road, rail and sea to ensure efficient, timely delivery.

As producers shift from stream-based marketing to marketing excellence, their offering to customers becomes more tailored and this creates more opportunity for margin improvement.

In the asset-based trading model, this marketing approach is often extended to third party volumes. The asset-based trading model also introduces the trading of optionalities or flexibilities in the industrial value chain. For instance, a commodity producer could buy delivery contracts from others in order to utilise spare capacity in its refining facilities. A commodity producer could sell its shipping capacity to others willing to pay a high price, and ship its own commodities via an alternative, slower route given flexibility it has in the delivery date.

Different ways for industrial companies to participate in commodity trading

Figure 2: Levels of commodity trading sophistication (from the perspective of a commodity producer)

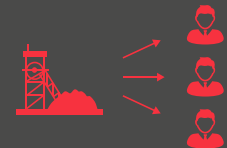
Stream-based marketing (Basic model)

- // Sell commodity production on long term contracts (to obtain premium)
- // Bulk buy and manage shipping, storage and other logistics to generate scale benefits



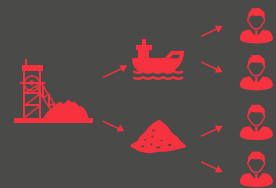
+ Marketing excellence (Customisation)

- // Create different product offerings for different customers (for which they will pay a premium)
- // Ensure security of supply through range of provider relationships



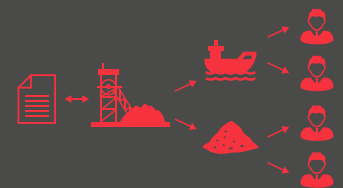
+ Asset-based trading (Trading optionalities and 3rd party volumes)

- // Actively trade option value from flexibilities in production and delivery processes
- // Access to 3rd party volumes to create additional optionality and trade other companies' production



+ Proprietary trading (Active paper trading)

- // Use derivative instruments and take paper positions for hedging and risk management
- // Active trading through physical and paper forms to express market views
- // Higher risk, to generate higher return





Different ways for
industrial companies
to participate in
commodity trading

Finally the proprietary trading model includes active risk taking on price movements. This can include trading price arbitrage opportunities between physical assets and paper derivatives.

Many companies are increasingly engaging in the full range of activities today. The more sophisticated the commodity trading model, the greater the potential revenue margin improvement, but also the greater the operational complexity and risks incurred.

It is important to note that commodity trading is not only about margin improvement, but also risk management. For instance, commodity trading can reduce volume risk (i.e. being stuck with inventory), it can be used to manage the company's inherent exposure to commodity price movements. A company with large inventory can benefit when price rises, but suffer when price falls. Trading can help companies better execute major selling (or buying) activity in the market with less price impact, e.g. via hedging tools.

Alongside producers and consumer companies in commodity trading, there are also third party traders. Examples of third party traders are Glencore, Trafigura and Noble. These third party traders act as intermediaries in the market and provide liquidity to buyers and sellers. Historically they have focused on trading volumes from third party producers. Over time, some merchants have moved upstream and acquired significant production capability. This allows them to better manage their risks and be more effective intermediaries. A number of major banks also act as important intermediaries in various commodities.

SECTION 3

Why companies organise trading activities in centralised units

Commodity trading is distinct from companies' industrial activities. Not only are different skill-sets required, but there are also major differences in the economic model and the types of risks that need to be managed. Commodity trading is often financed differently to industrial production, for instance making use of commodity trade finance to lower funding costs. The major risks in commodity trading include counterparty credit risk and other commodity price movement risks, whereas in industrial activities operational and environmental risks are much more prominent.

Commodity trading is also complex. Globally, hundreds of thousands of highly skilled individuals are employed in the activity. The required skills can be grouped into four activities as shown in Figure 3.

First, commodity trading critically involves building relationships with clients and understanding their unique needs. Second, it is important to gather intelligence on flows and to understand market demand and supply in order to structure the deals accordingly to meet the clients' needs. Third, commodity movements need to be managed to ensure timely delivery and finally, the necessary legal documentation needs to be arranged and a close eye kept on all these activities to ensure that risk levels do not exceed limits. These activities are interlinked and need to be located together to ensure the swift processing of time-sensitive commodity transactions.

Why companies
organise trading
activities in
centralised units

Figure 3: Interlinked business activities



Business & relationship management

- // Market coverage (buyer / seller)
- // Building relationships
- // Sourcing suppliers
- // Managing portfolio, ensuring diversification
- // Counterparty education and collaboration
- // Brand building



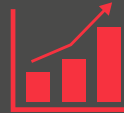
Market intelligence and deal structuring

- // Understanding flows, customer demand, supply availability
- // Identifying mismatches in supply and demand
- // Structuring transactions to meet company and counterparty needs
- // Analysing system to find efficiencies, modelling
- // Deal decision making and execution



Management of commodity movement

- // Scheduling movement of commodities (shipping, rail, road)
- // Managing stockpiles and warehousing
- // Auditing and checking commodities quality
- // Directing transformation of commodities



Transaction and risk control

- // Financing flows and stockpiles
- // Arranging legal documentation and insurance
- // Managing price, credit, operational and other risks



Why companies
organise trading
activities in
centralised units

For these reasons many companies have put their commodity trading activities into a separate and centralised unit. They may have one regional unit or, for the largest global companies, units in each major time zone. These units are centres of excellence for commodity trading activities. Typically they have their own P&L which creates transparency for the company on the value-add of commodity trading. They allow the risk exposures of commodity trading, which are distinct from the risk exposures of industrial activities, to be isolated and controlled by a dedicated trading risk management function. Trading units also tend to have specific remuneration and HR models to attract and retain staff in a global talent market.

These units do not need to be in the same location as the companies' industrial activities (and often industrial activities are spread out across many remote locations). Rather it often makes sense to locate them in a commodity trading hub due to the critical supporting ecosystem that a hub offers.

SECTION 4

Hubs provide a critical ecosystem for commodity trading

Hubs provide a critical ecosystem comprising of the necessary infrastructure and skill-sets required for commodity trading. The key attributes of a commodity trading hub are listed in Figure 4.

Most importantly, commodity trading hubs provide a participant-network, where buyers and sellers can form close business relationships and trades can happen. Access to the right participant network is often the most important factor for companies when choosing where to locate their commodity trading units³. In a participant-network, information can flow quickly between different buyers and sellers (e.g. information about demand and supply and other factors that can affect the price of commodities). This enables the network to understand where the 'fair' market price is at any one moment and that increases the fluidity, ease and volume of trading. Many commodity traders say that they cannot risk trading large or complex deals from outside a participant-network.

Linked to this is the ability to hire the necessary skilled people for commodity trading. It can be very difficult to find these people outside commodity trading hubs, and particularly in the locations of production. The most skilled people in commodity trading are globally mobile and attracted to the greater career opportunities offered in commodity trading hubs. Commodity trading hubs must also offer a strong local talent base, particularly with the right education and global language skills.

Financial and trading infrastructure provided by commodity trading hubs is critical to commodity trading. Many trades are in foreign currencies and commodity traders need rapid access to global payments and clearing infrastructure. Commodity trading units' inventory is typically most efficiently funded using commodity trade finance and commodity traders need easy access to the major providers. Country credit risk is a major factor here – inventory held in a lower rated jurisdiction will be more expensive to fund than in a higher rated country. Commodity trading hubs are typically in highly rated countries, whereas many commodities are produced in less well rated countries.

Commodity trading hubs need to provide stable legal, regulatory and tax frameworks that provide necessary protections, the ability to arbitrate disagreements and the stability to make long term business decisions. Since commodity trading is a relatively mobile activity, commodity trading hubs need to be competitive, including in their fiscal policies. Commodity trading hubs also need to offer a positive business environment that attracts global companies and their staff and provides good transport links to key markets.

³ Based on broad range of discussions with companies partaking in commodity trading

Hubs provide
a critical
ecosystem for
commodity trading

Finally, proximity to physical flows and infrastructure is important, and is the historical reason why many of the largest global commodity hubs are located where they are today (e.g. Chicago, Houston, Geneva, London, New York, Singapore and Hong Kong). Many of these hubs have existed for many decades as a meeting point for commodity trading. Different hubs may specialise in different commodity asset classes. For instance, Chicago is a major hub for agricultural products, London for metals and Houston for energy trading.

Figure 4: Key attributes of commodity trading hubs



A participant network

- // Access to major buyers, sellers and decision makers in the same place, enabling relationships to be built and business opportunities found
- // Access to a broader range of service providers to manage elements critical to structuring a trade e.g. risk, legal and financial



Human capital

- // Pools of diverse and highly-skilled human capital
- // Attractive environmental, social and educational infrastructure to attract and retain the best talent locally



Financial and trading infrastructure

- // Availability of exchange, payments, banking infrastructure that enables trading
- // Deep and liquid capital markets and funding resources
- // Critical mass of intellectual capital, supporting cutting edge risk management, bespoke structuring and pricing solutions



Legal, regulatory and tax framework

- // Internationally-recognised legal, regulatory and tax frameworks, offering market participants necessary protections and flexibility
- // Attractive fiscal policies and incentives



General business environment

- // Multicultural and multi-lingual environment, attracting a diverse range of buyers and sellers, increasing the size and resources of the participation network and boosting price optimisation
- // Good transport links, favourable time zone, close proximity to key markets to support relationships and marketing efficiencies



Physical flows and infrastructure

- // Intellectual capital generated from proximity to physical infrastructure such as ports, warehousing and terminals
- // Availability of pricing points and benchmarks

SECTION 5

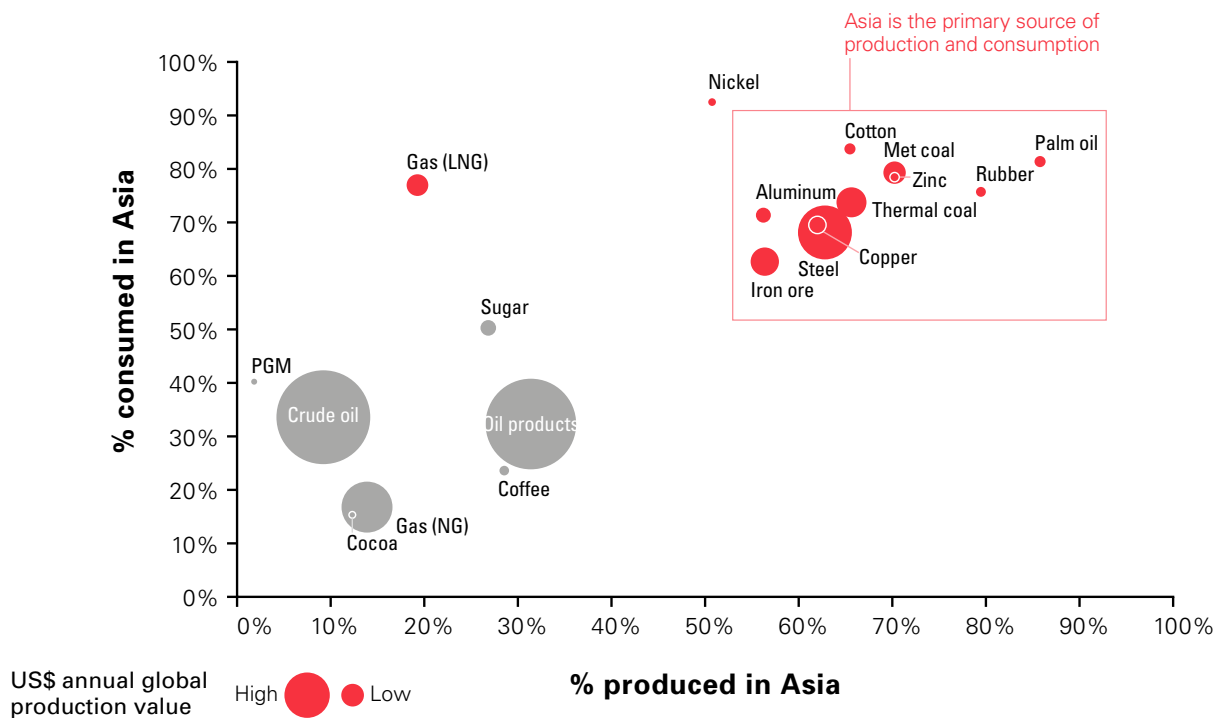
The role of commodity trading hubs in Asia

In parallel with rapid economic growth across Asia, the region's share of global commodity consumption is rising and a growing proportion of commodity trading is occurring during the Asian time zone.

Figure 5 below highlights the commodity asset classes that are now predominantly produced, consumed and traded in Asia (e.g. over two thirds of major commodities like coal and steel are now produced, consumed and traded in Asia). Even other commodities that are predominantly produced outside Asia, like crude oil and liquid natural gas (LNG), are seeing an increasing share of trading in Asia.

Commodity trading hubs in Asia have an important role to play in developing the market liquidity of these 'Asian' commodities. Figure 6 highlights where the different

Figure 5: Asia's dominance in commodity production and consumption



Source: Oliver Wyman analysis and market benchmarks

The role of the commodity trading hubs in Asia

commodity asset classes within the trading liquidity spectrum (that is, the ease of buying or selling and the size of the relative price spread in the market between where people are willing to buy or sell).

Many 'Asian' commodities tend to exhibit lower trading liquidity. By bringing traders together and making it easier to trade, Asian trading hubs can increase the volume of trading, which in turn improves liquidity and reduces the cost to trade. Beyond better prices for buyers and sellers, more liquidity allows better derivative products to be created, which producers and consumers can use to hedge commodity price fluctuations and other risks. This creates benefits all the way through to the end consumer, resulting in lower and more stable retail prices. Hubs also remain important for liquid markets, both in terms of maintaining that liquidity and developing additional products and services (e.g. exchange traded futures, OTC clearing etc.) that further enhance market efficiency. Most successful hubs can effectively manage the entire range of commodities.

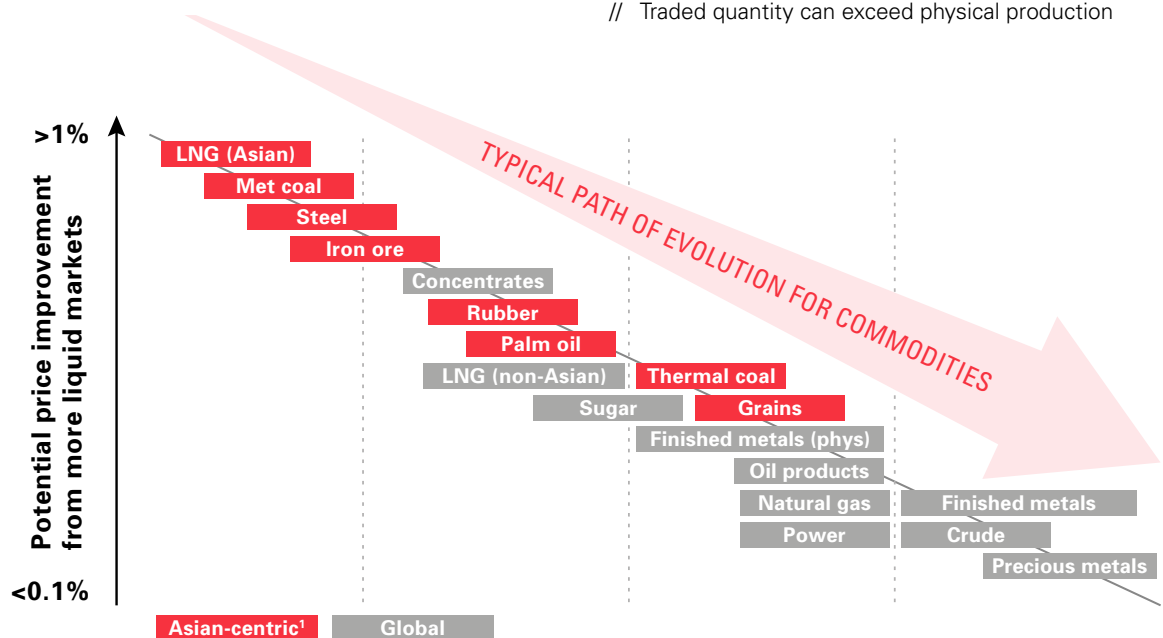
Figure 6: Value of a hub in creating liquidity

Least liquid markets

- // Difficult to enter and exit
- // Significant information asymmetry across different market players leaving potential for disruptive behaviours

Most liquid markets

- // Highly efficient price discovery with high volumes
- // Easier to enter, and typically includes diverse nature of participants, e.g. ETFs, futures, centralised clearing
- // Traded quantity can exceed physical production



Many Asian commodities (e.g. Iron, Steel, Rubber, Palm Oil, etc.) sit at this end of the liquidity spectrum, highlighting the need to increase commodity trading in Asia

Source: Oliver Wyman analysis and market benchmarks

SECTION 6

The Singapore proposition

Singapore has been involved in commodity trading for many decades. Over the years, it has expanded into one of the world's leading financial and commodity trading hubs which provides the necessary infrastructure and skill-sets required by commodity trading companies.

Its geographic location at the centre of Asian trade routes has long been a key advantage and so is the participant-network that has developed in Singapore, with the majority of the major global commodity producers, consumers and traders present. Singapore has an added advantage of a hub that offers a neutral playing field for commodity traders with no single producer or consumer who can dominate the market. Singapore brings a broad range of participants together to create new commodity trading opportunities and further deepen market liquidity. Combined with a high quality of life, and a highly international, multi-lingual local employee base (particularly in both English and Mandarin), Singapore offers a talent pool that possesses the knowledge and cultural awareness to facilitate trading with the world's largest growing markets such as China, India and ASEAN.

As a leading global financial centre, Singapore has a wide range of financial institutions with dedicated teams for the commodity sector. This is enhanced by efficient USD/RMB clearing and other risk management infrastructure, including easy access to commodity exchanges and a wide range of price discovery and hedging solutions (such as SICOM rubber futures, SGX iron ore swaps and the Platts FOB Straits benchmark). Singapore is one of the very few 'AAA' rated commodity trading hubs and offers a high level of legal, regulatory and fiscal stability. It is consistently rated as one of the best global locations to do business and is a leading centre for contract arbitration. It provides a highly convenient central location for commodity traders to manage their customer and supplier relationships across Asia and act as a gateway between East and West.

Singapore has an ever stronger role to play in the evolution of global commodity trading. By supporting the development of deeper and more liquid commodity markets in the Asian time zone with products tailored around Asian needs, Singapore is creating significant benefits not only for commodity traders but also in supporting the needs of growing economies across Asia.

Figure 7: Singapore commodity trading hub – key attributes



1 Participant network

- // 60-80% of world's top oil and gas, steel and metals, mining and agricultural commodities companies operating within a neutral jurisdiction
- // "The extensive network allows us to capture more market intelligence and optionality"
– *Asian oil marketer*
- // "Asia is the centre of consumption. We want to be closer to our customers."
– *Global leading independent trader*



2 Human capital pool

- // #1 in Asia for quality of life
- // "A trading business is all about traders. To retain them you need the "soft" factors: culture, lifestyle and quality of living"
– *Asian oil marketer*
- // Culturally adaptive workforce fluent in important business languages English and Mandarin
- // "Singapore has a global and world-class talent pool for commodity trading"
– *Major bulks producer*



3 Financial and trading infrastructure

- // #2 banking sector in the world with deep regional knowledge and dedicated commodity teams
- // "There's a concentration of service providers ... they are knowledgeable about the commodity and the local market"
– *Asian softs trader*
- // 3rd largest
 - global FX market
 - pool of RMB deposits
 - global USD daily average FX turnover



4 Legal, regulatory and tax framework

- // #4 globally for contract arbitration
- // "Singapore has a competitive edge with its stability"
– *Asian metals trader*
- // #1 in Asia for anti-corruption
- // "Singapore has a robust and transparent institutional framework"
– *Major bulks producer*



5 General business environment

- // Direct flights to 408 destinations
- // "Being in the centre of Asia benefits communication with our counterparts in Europe and Middle East"
– *Asian LPG player*
- // Over 65% of global base metals and 80% of thermal coal consumption takes place within a 6 hour flight radius



6 Physical flows and infrastructure

- // 10 million m³ of independent oil storage - the largest amount in Asia
- // "Physical infrastructure is important. We can break bulk in Singapore"
– *Asian natural gas producer*
- // 8 of 46 LME warehouses in Asia
- // "Being close to the tankage helps us manage our supply chain better"
– *Global oil & gas marketer*

INTERNATIONAL ENTERPRISE SINGAPORE

IE Singapore is the government agency that promotes international trade and partners Singapore companies to go global.

Our vision is for Singapore to be a leading global economy by:

- Building the top global trading hub
- Growing global champions
- Creating global opportunities for our people

Trade has always been the backbone of Singapore's economy. In addition to promoting the export of goods and services, we attract and anchor global commodities traders to establish their global or Asian home base in Singapore. Today, Singapore is a thriving trading hub with a complete ecosystem for the energy, agri-commodities and metals & minerals trading clusters.

Through our comprehensive assistance schemes, we partner Singapore-based companies to strengthen their competitiveness and compete on the global stage against the very best in their industries.

Our global network of overseas centres in over 35 locations provides Singapore-based companies with the necessary connections across developed and emerging markets.

Visit www.iesingapore.gov.sg for more information.

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