INDUSTRY STUDY MISSION CHINA

4-14 August 2015

Shanghai | Lianyungang | Rizhao | Qingdao

SMU
SINGAPORE MANAGEMENT UNIVERSITY

International Trading Institute

China has more than a billion people residing within its borders and an economy with a GDP that is second largest in the world. Therefore, it was a clear decision selecting China for our Industry Study Mission in 2015.

Industry Study Missions (ISM) provide invaluable opportunities for our students to connect the dots linking classroom sessions with real-life learning opportunities. In an increasingly dynamic and challenging global trading environment, innovation and deep knowledge are essential for trading nations such as Singapore to maintain her competitive edge. As ITI@SMU continues to develop the next generation of competent human capital for the trading sector, it is clear that a wide spectrum of knowledge and skills are needed if trading professionals are to compete and thrive in the trading sector.

The ISM to China would not have been possible without our friends and partners who have travelled tirelessly with us on this journey. We would like to extend a special thank you to all of you for opening the doors to companies, exchanges, government officials and university partners for our students. In particular, we would like to thank Trafigura Investment China, Wilmar International, Shanghai Eagle Metal Co. Ltd, BTG Pactual China, Shanghai Futures Exchange, JinMai Resources and Yangshan Shengang International Oil Logistics and Singapore Chinese Chamber and Industry of Singapore who hosted our students during their visit.

Your belief in ITI@SMU is a clear illustration of the strong partnership that has developed in the last ten years between the Singapore government, IE Singapore, our ITI industry partners and SMU.

ANNIE KOH

PROFESSOR OF FINANCE
ACADEMIC DIRECTOR, INTERNATIONAL TRADING INSTITUTE@SMU
VICE PRESIDENT, OFFICE OF BUSINESS DEVELOPMENT

For a group of students studying commodity markets and trade flows, there is no better learning ground globally than China, the world's largest importer and consumer of almost all mainstream commodities traded today.

A group of International Trading Institute@Singapore Management University (ITI@SMU) students had the privilege to visit various organisations to study their structures, operations, and how each of them navigated the unarguably tricky Chinese market to capitalise on the plethora of opportunity that China has offered over the last decade – opportunity which has been widely acknowledged largely as a commodity super-cycle.

Our Study Mission to China could not have been more interesting. With the volatility in Chinese Equities sending shockwaves through global financial markets, we had the opportunity to spend time at the epicenter (so to speak) of a global and Asian growth story that has captivated investors over the last decade.

Volatile financial markets aside, we were able to visit companies with strong operational and strategic positions, linked to more than just a speculative position in the financial markets. We had the opportunity to look into what made each company different, and how they chose to create and monetise a competitive advantage.

Our report is a summary of our ten-day trip to China, where we spent five days in Shanghai, and the other five days between Lianyungang, Rizhao and Qingdao. Each place we visited was unique, and offered not only an insight into industries and businesses, but also the wealth of China's distinctive culture. We left China with different perspectives, broadened horizons, and a better idea of what really constituted the 'Asian growth story'.

CONTENTS

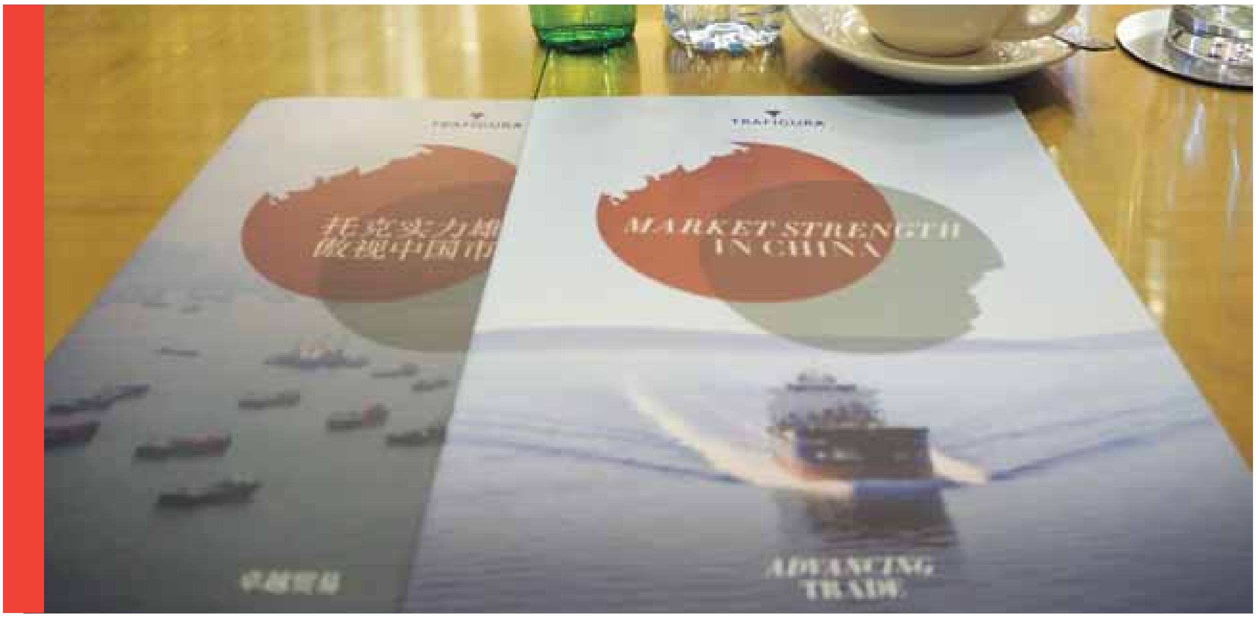
1. Trafigura Investment China

Trafigura is one of the world's leading independent commodity trading and logistics houses.

The Dutch company was founded in 1993 and trades in base metals and energy, including oil. It is the world's third largest private oil and metals trader. Trafigura considers physical trading and its logistics services among its core business areas.

Like all trading companies, Trafigura moves physical commodities from places where they are abundant to places where they are needed most, and prides itself on doing so reliably, efficiently, and responsibly. The company's competitive advantage lies in the mid-to-downstream sector of the business - its superior marketing and distribution capabilities as well as its significant infrastructure investments create immense value by connecting producers and end-users.

Our visit to Trafigura Investment China (TIC)'s office started an introductory presentation by Country Manager Shirley Zhu, allowing us to acquaint ourselves with the company's mission and vision, as well as its roles and responsibilities in relation to the parent Trafigura Group. Subsequently, the managers from each of the two major trading departments - Metals & Minerals as well as Oil & Petrol - spoke about the methodologies used in their lines of business. To top it off, members from our delegation fielded questions to the presenters to enhance their understanding of the business of the company. Our team was very thankful for time and effort these busy managers spent sharing with us more about what Trafigura does.



TRAFIGURA INVESTMENT CHINA

Trafigura has ten regional offices in China. Trafigura Investment China, located in Shanghai, is one of the fastest growing trading companies in China and is a major regional hub for Trafigura's operations in Asia. With 20 years of experience in China, TIC has built a strong record for performance and delivery in the country.

OPERATIONS IN CHINA

Established in 2005, the precursor to TIC was established with a specific focus on the domestic China market, with a registered capital of USD 100 million. Similar to its parent corporation's strength in the global market, TIC is one of the largest independent commodity trading companies in China, purchasing commodities as principal and selling to industrial companies.

TIC's customers are supported by services that extend beyond the company's core business of supplying commodities, including logistical transport, warehousing storage, as well as trade finance and risk management. The company's market-leading experience of over two decades in China spans diverse products and services. As a result, TIC has a solid understanding of all aspects of the market and is able to offer flexible, tailor-made solutions for customers of all sizes and scope. The company and its activities have the full support of the Trafigura Group's worldwide trading teams and technical expertise, working together with the Group's global network of offices and subsidiaries to advance international trade.

PRODUCT OFFERING

TIC trades in non-ferrous concentrates, refined metals, non-ferrous scrap, oil and petroleum products and bulk commodities such as coal and iron ore. The company is also active in buying and selling crude oil and bitumen. The Trafigura Group is one of the largest trading companies importing into China by volume of copper, lead and zinc concentrates.

TIC's longstanding and global relationships with mining partners, refineries and local trading houses enables them to add value for its customers. The company also strives to apply its worldwide logistics and market knowledge to increase trading productivity.

STRATEGIC ADVANTAGES

As we found out during our visit, TIC has several competitive advantages has over its competitors in trading similar commodities in the Chinese domestic market. These initiatives are all aligned with and hinge upon the four core guiding principles in Trafigura's business model - to Source, Store, Blend, and Deliver their major product offerings, creating value for their customers in the process.

SERVICES THAT BRIDGE THE GAP BETWEEN PRODUCERS AND END-USERS

Trans-Coal, a leading coal trading company, is a wholly owned Trafigura Group subsidiary that procures coal from both worldwide and domestic sources. Engagement with subsidiary companies such as Trans-Coal allows TIC to tailor its services according to the precise needs of its customers by sourcing commodities from a wide range of options.

LOGISTICS AND INFRASTRUCTURE INVESTMENTS

TIC takes a long-term approach to its commitment to the commodities that it trades by wholly owning its key assets - these include terminals, storage facilities, as well as other logistical operations. This is evident in the company's status as one of the only few in China to own warehousing facilities in the Shanghai Free Trade Zone, opening up unprecedented opportunities for its customers. The Yangshan warehouse is owned and operated by a Trafigura subsidiary, Impala, and is located strategically on-site at one of the world's largest bulk container and freight ports. This warehouse is built to state-of-the-art standards and primarily handles copper, zinc and nickel.

TIC's ability to make trade flow smoother is further enhanced by its various partnerships that serve to develop new distribution routes and product categories. For example, Impala struck a joint venture partnership with SIPG Logistics, one of the largest logistics companies in China, creating an integrated, specialist transportation network operating an established network of terminals along the Yangtze River, providing customers priority access to local industries.

RISK MANAGEMENT

TIC's managers also took the time to explain the company's conservative approach to risk management. Coupled with its stable business model, these factors make TIC a reliable trading partner. Also, price risks such as commodity price risk and currency exchange rate price risk relating to its physical business is constantly hedged. The scale and depth of Trafigura's global presence allows for balanced exposure to all the major commodity markets, while the company's trading platform also complies with all legal and compliance regulations in China.

TIC also has excellent relationships with over 30 Chinese and foreign banks in China, allowing the company access to a variety of financial institutions, covering more than RMB 11 billion of credit facilities, including bilateral trade finance facilities and syndicated revolving credit lines. Five leading banks also provide syndicated borrowing-base loans.

2. Wilmar International

Wilmar International Limited was founded in 1991, and is Asia's leading agribusiness group.

Wilmar International's business activities include oil palm cultivation, edible oil refining, oilseed crushing, edible oil consumer pack processing and merchandising, specialty fats, oleochemicals, biodiesel manufacturing, and grains processing and merchandising. It has over 450 manufacturing plants and an extensive distribution network covering China, India, Indonesia and some 50 other countries. During this trip, we had the opportunity to visit its operating premises in Shanghai and Lianyungang under Yihai Kerry, where we gained a better understanding of the company's agri-commodity business as well as the synergies between its various operating premises.

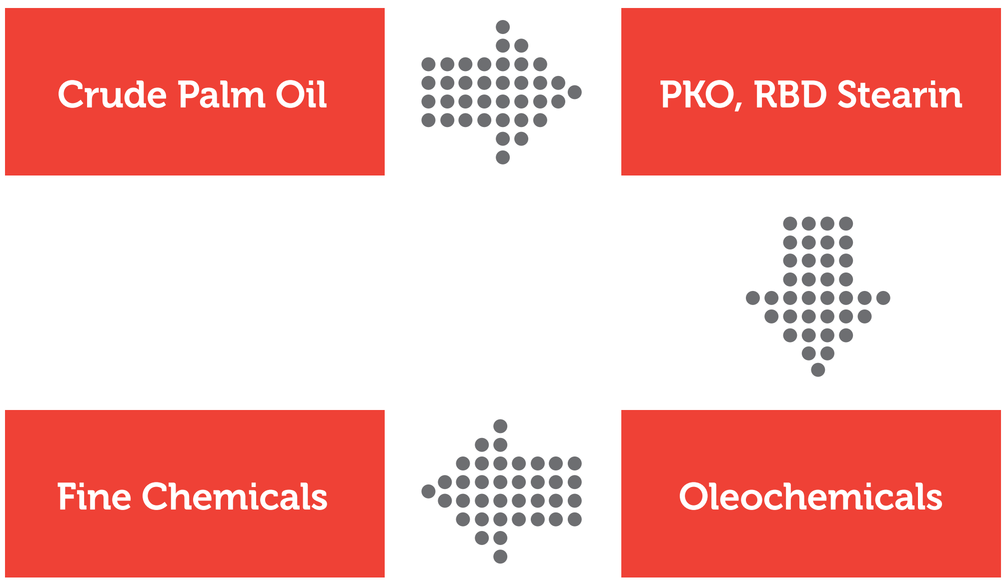


Figure: Wilmar's involvement in the value chain for Crude Palm Oil

Wilmar International Limited is an investor in Yihai Kerry Group, a diversified enterprise with business areas comprising oils and grains processing/trading, oleochemicals, storage and logistics. We had the opportunity to visit Yihai Kerry's premises in Shanghai and Lianyungang, where we had the chance to study their edible oil packaging as well as oleochemical and specialty fats refining processes. The Yihai Kerry Group headquarters are located in Shanghai's Lujiazui Finance and Trade Zone. Yihai Kerry has achieved successful downstream integration into branded products, with the successful establishment of the Chinese market's number 1 edible oil brand "Arawana", as well as other successful brands such as "Orchid", "Wonder Farm", "Koufu", "Olivoila" and "Fengyuan". The "Arawana" brand is now famous in consumer package oil, rice, flour and other series products, and has maintained its number 1 brand status in consumer package edible oil for 18 consecutive years. Famous Yihai Kerry specialty fats brands include "Golden Delicious", "Golden Oriole", "Huaqi" and "Sania". Yihai Kerry's oleochemical industry segment was launched in 2004, with the production of soap noodle, fatty acids, fatty alcohols, etc. The company's famous oleochemical brands include "Reyland" and "Longqi".

OLEOCHEMICALS

The raw materials commonly used in the production of oleochemicals include RBD palm oil, RBD palm stearin, crude palm kernel oil / coconut oil and tallow. Oleochemicals are produced by splitting oils or fats through a hydrolysis (using water) or alcoholysis / trans-esterification (using alcohol) process. Hydrolysis produces fatty acids and glycerin while alcoholysis produces fatty acid esters and glycerin. The other processes involved to further transform fatty acid or fatty acid esters include hydrogenation (conversion of unsaturated fatty acids into saturated fatty acids), distillation (purification) and fractionation (separation of fatty acid by degree of saturation).

Oleochemical products of this kind are used in surface active agents, food and feed additive, cosmetics, medicine, oil additives, spinning products, polymeric additives, rubber product additive, paper making additive, agrochemicals, fuel dope and lubricants, etc.

OPERATIONS IN CHINA

SHANGHAI COMPLEX

The Shanghai Complex is a comprehensive R&D, oils & fats processing plant, undertaking edible oil refining, packaging of oils in consumer packs, processing of specialty fats and oleochemicals and as well as storage facilities. Employing approx. 1450 staff, the Shanghai Complex encompasses Wilmar Biotechnology R&D Centre, Shanghai Kerry Food Industries, Shanghai Kerry Oils and Grains Industrial, Kerry Specialty Fats (Shanghai), Wilmar Oleochemical (Shanghai), Wilmar Specialty Chemical (Shanghai) and Wilmar Fine Chemical (Shanghai).

We had the opportunity to witness their packaging processes for edible oils and soap noodles as well as visit their warehouse storage facilities. Wilmar has many complementary assets along the value chain such as plantations, processing plants and distributor centres that promote synergy amongst different product stage divisions. Their shipping arm, Raffles Shipping, helps facilitate the transfer of products across different geographical premises from one production stage to the other, maintaining cost advantage against their industry competitors as opposed to chartering vessels to transport their products.

LIANYUNGANG COMPLEX

The site in Banqiao has completed Phase I of development and further development phases II & III are now underway. The Wilmar (LYG) Saline Technology Park is currently one of the few sites in China that has attained approval to house an Alkyl Ketene Dimer (AKD) Plant. This achievement is attributed to the stringent security measures put in place by Wilmar in their set-up proposal to the Chinese military/government, as well as their strict compliance with the high safety and security measures. Being one of the few approved local producers of AKD thus sets them apart from their Chinese competitors, with AKD currently being a major revenue contributor.

The Banqiao site is within half an hour's travel from the port. The site also enjoys lower operating cost due to the relatively lower cost of living in the area. The Lianyungang complex derives its cost advantage from Wilmar's various subsidiaries, which provide it with the required stable supply of raw material, which is the key to success in this industry. This is all due to the extensive value chain integration of Wilmar and its subsidiaries. Profit margins can be improved further through further downstream expansion of branded products, the continued development of which the company intends to focus on in the near future.

3. Shanghai Eagle Metal Co., Ltd.

With a strong focus on non-ferrous metals such as copper and zinc, Shanghai Eagle Metal is one of the largest metals trading firms in China

Despite only having a single trading office in Shanghai, the firm covers up to approximately 20% of all non-ferrous metal trades in China.

Dedicated sales teams are designated for each and every metal they trade in, with team members handling every aspect of the trade from risk management to hedging via paper trading. As physical traders, every segment of the value chain is a profit-making opportunity to them whether it is storing physical stock in a warehouse in anticipation of a Contango market or making a profit off the premium portion of an international trade.

OPERATIONS IN CHINA

With multiple Instant Messenger windows on screen, the traders conduct their business with text-based negotiation and information search. As the deal goes through, the trader passes it on to the trading assistant for mid and back-office continuation. Their row-style seating arrangement not only facilitates this streamlined process but with procurement and sales sitting just opposite each other, value chain profit identification is improved.

In line with a prudent operating strategy, trading profit comes from playing the spreads through long and short positions between the Shanghai Futures Exchange (SHFE) and the London Metal Exchange (LME). Sales targets are routinely set on a weekly basis, and strategies engaged mainly revolve around the use of spot trading. With differing volatility for each type of metal as a result of price and volume traded, limits are discussed and set for each team based on the financial situation of the firm and the product situation of the commodity. However, the trading department requires cooperation with the other departments in order to make trades possible, such as financial matters with the accounts department to keep track of team-specific balances and the freight department for logistics invoices. The treasury team also ensures verification of receipts as a trade finance function before releasing the goods to the customers.

Lastly, business is done not only with upstream smelters, but with other traders, such as the trading arms of banks like Morgan Stanley, and counterparties consist largely of state-owned enterprises. This constitutes up to 20% of all copper trades in China and 40% of all zinc and lead trades in China, effectively making these their biggest markets and thus, making the company one of the most prominent metal trading firms in China.

MARKET OUTLOOK AND COMPANY ADVANTAGES

As a physical trading firm, trade profits are largely dependent on freight and free-on-board (FOB) prices, as metals such as copper are not only domestically sourced in China, but offshore as well. This translates into an advantage for the company, as the largest consumer in the world is China itself, giving the business a lead over international trading companies from outside of China. For example, Chile and Peru in South America are home to some of the largest exporters of copper products.

4. BTG Pactual

BTG Pactual is a financial institution based in Sao Paulo, Brazil with its main operations in investment banking, asset management and wealth management.

Almost three years back, when banks were pulling back from the commodities market, BTG Pactual was the exception, founding and launching BTG Pactual Commodities, and this trading arm has since seen tremendous growth, accounting for almost one third of the group's revenue. Taking into account Asian trade alone, deals are booked in BTG Pactual Commodities' entity offices in four strategic geographical locations, namely: the world's most vibrant agricultural trading hub, Switzerland; the Asian financial centre with a proven track record of prudent governance and ease of doing business, Singapore; the largest Asian market, key growth driver, and huge metals trading hub, Shanghai; and last but not least, the United States.

BUSINESS MODEL

Unlike other private trading houses which are moving aggressively towards vertical and horizontal integration of its physical business, BTG Pactual Commodities has a vastly different business model – one that is assetlight, one which avoids being the sole operator of physical assets – making BTG Pactual Commodities nimble, agile, and less susceptible to the vicissitudes of market volatility. Operating in both propriety trading and physical trading as its core trading business also means the creation of great synergy, where knowledge and expertise from the physical market give the firm a clearer view of market fundamentals, thereby allowing the proprietary trading segment to be done in a more informed manner.

With a clear strategic business model, BTG Pactual Commodities, though young, is led by a team of experienced managers and traders who have seen the commodities industry go through its business cycles. This means that an amalgamation of strong business vision with a capable management team acts as the driver of the business. BTG Pactual Commodities places great focus on many aspects of the trading business. The two key areas are firstly, in risk management – protecting gains and profits from unexpected shocks, and secondly, in operational efficiency – bringing up profitability by bringing down unnecessary costs pegged with inefficiencies.

Above all else, BTG Pactual Commodities has a strong corporate culture with a community of capable, dedicated, and exceptionally down-to-earth teams – evident from the positive and welcoming vibe we all received from the corporate visit. The BTG team was approachable, and very willing to share their experience, leading us to the conclusion that a strong relationship with its counterparties is one key strength that differentiates BTG Pactual Commodities.

Collectively, a clear business model, strong interests in risk management and operational efficiency, close relationships with its counterparties and a strong balance-sheet are the key areas we identified as BTG Pactual Commodities' areas of value creation that make it one of the fastest-growing independent commodities trader of the twenty-first century.

COMPANY VISIT

The company visit to BTG Pactual Commodities Shanghai was a unique one. As aforementioned, BTG Pactual Commodities has opted for an asset-light model, and therefore has no physical assets such as plants and ports to visit - totally unlike most of our other hosts in the study mission. Instead, we visited their Shanghai office, where Mr Ronen Arielly – Managing Director Asia – gave us a welcome speech and introduction to how BTG Pactual Commodities came about, followed by a comprehensive talk on commodities trading with his team of traders from the Shanghai office, who focus on metals trading.

We were introduced to the London Metal Exchange (LME) and Shanghai Futures Exchange (SHFE), where we gained insights into the importance of understanding the exchange in the commodities business – how issues can arise should we not be able to close positions by selling or making physical delivery. Following that, we were introduced to the different types of trading – both physical and proprietary trading. This gave us a step-by-step guide to physical trading:

1) contracting of supplier to goods purchase | 2) drafting of contract

3) payment against contract terms | 4) goods delivery and settlement

In the area of propriety trading, we saw the four key areas of consideration:

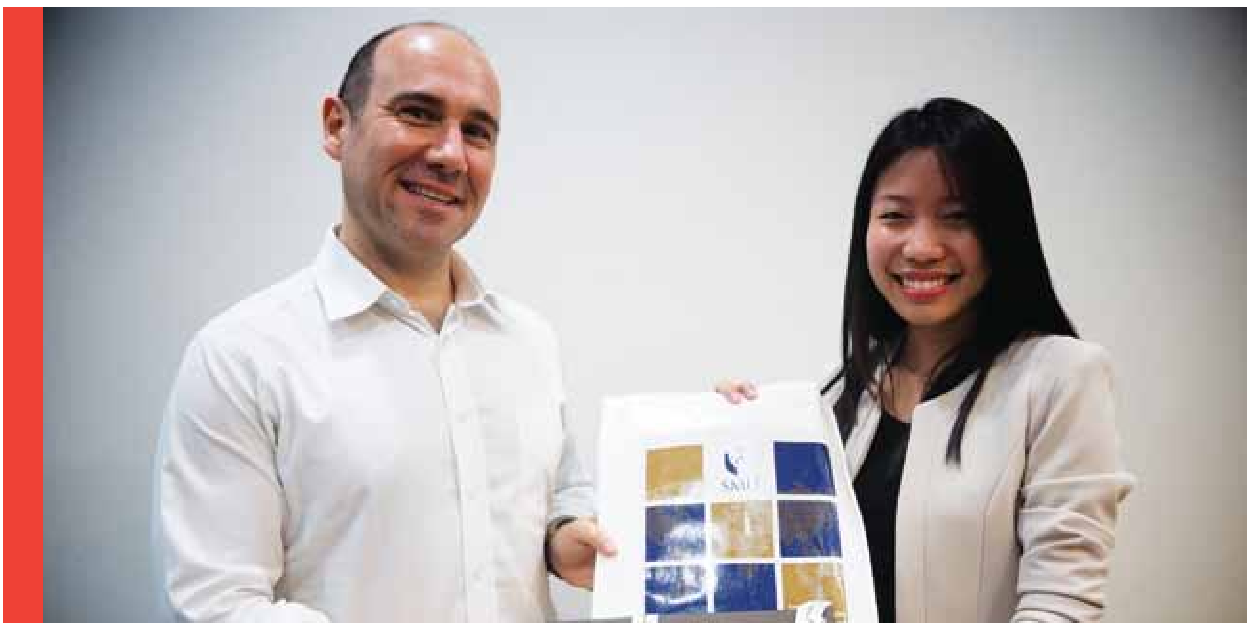
1) macroeconomics | 2) fundamental analysis

3) technical trading | 4) market position

Indeed, the session provided us juniors and seniors alike with a good basis point for understanding commodities trading and for strengthening our foundation on this topic. In addition, we were also given brief insights into pricing and how money is made out of the business. This widened our perspective from classroom learning and we were able to see the creative aspect of the commodities business.

After the session at the Shanghai office, the second half of the session was a generous dinner hosted by BTG, where we had the opportunity to interact with Ronen and his team and to gain greater understanding of the commodities business in an informal setting. Some of us had the opportunity to hear more about the supporting roles within a trading house from the finance department, while some gained deeper insights in the metals trading space, and others heard management views on various markets ranging from China and India to Myanmar.

The bottom line is – the trading role is not the sole activity within a trading house. Departments work together like cogs in a watch. To get things moving, everyone has a role to play. Risk management, finance, human resources, operations and legal – employment opportunities within a trading house can cater to undergraduates of various specific interests and skills. The company visit to BTG Pactual Commodities Shanghai was an extremely rewarding one, and we are all grateful for the time, effort, and hospitality given by Ronen and his team.



5. Shanghai Futures Exchange

The Shanghai Futures Exchange (SHFE) is an amalgamation of the Shanghai Metal Exchange, Shanghai Foodstuffs Commodity Exchange, and Shanghai Commodity Exchange.

The SHFE is a self–regulated entity operating under uniform China Regulatory Commission regulations. The exchange boasts of a membership of more than 200 members, amongst which 80% are future firm members. The SHFE serves as a platform where people can trade standardised futures contracts, i.e. contracts to buy specific quantities of a commodity or financial instruments at a specified price with delivery set at a specified time in the future.

Currently, 12 future contracts are available for trading: gold, silver, copper, aluminium, zinc, lead, steel rebar, steel wire rods, fuel oil, natural rubber, bitumen, and hot rolled coil.

China status as the world's largest exporter and its second largest economy makes the positioning of the SHFE all the more important globally. The SHFE dedicates itself to ensure China's growth in the commodity market with an open policy while at the same time strengthening its self-regulatory capabilities so as to ensure its complete credibility.

SHFES STRATEGIC OUTLOOK

SHFE's strategic plan can be summarised in a 5-pronged priority focus: Trading, Clearing, Information, Technology and Research and Development (R&D). SHFE aims to build on its eight foundations of risk surveillance, investor education, market services, organisational structure, human resources, financial growth, public relations and cultural development. To do this, the Exchange is engaged in the continuous improvement of systems such as IT and risk management, and it even has an entire division dedicated to this. The Exchange also recently got involved with night-trading under the continuous trading programme for gold, silver and non-ferrous metals futures.

CHANGING ROLE OF THE TRADING FLOOR

In keeping with modern trading methods, the stock exchange has largely discarded floor trading, typically using the open outcry method, for electronic trading, also commonly known as 'e-trading'. During the visit – on a weekday during the 9am - 3pm trading, the floor was unusually quiet with only a small group of people wearing red jackets – the traders present in the exchange. This change occurred back in 2006 where the Exchange became fully automated, reducing the need for traditional brokers on the trading floor. This is also part of the Exchange's strategic plan to keep up with the times, upgrading its trading through electronic automation and greater information symmetry.

ROLE OF THE REGULATORS

Part of the tactic that the Chinese government has adopted to ensure China's competitiveness in the market is more effective regulation of speculation and the provision of accurate timely information. This includes online monitoring of the daily trades going on in the market, as "abnormal" transactions can potentially lead to a slowdown or freeze in cross-border fund transfers. These new measures aim to curb currency arbitrage and capital outflows, which can potentially destabilise the market.

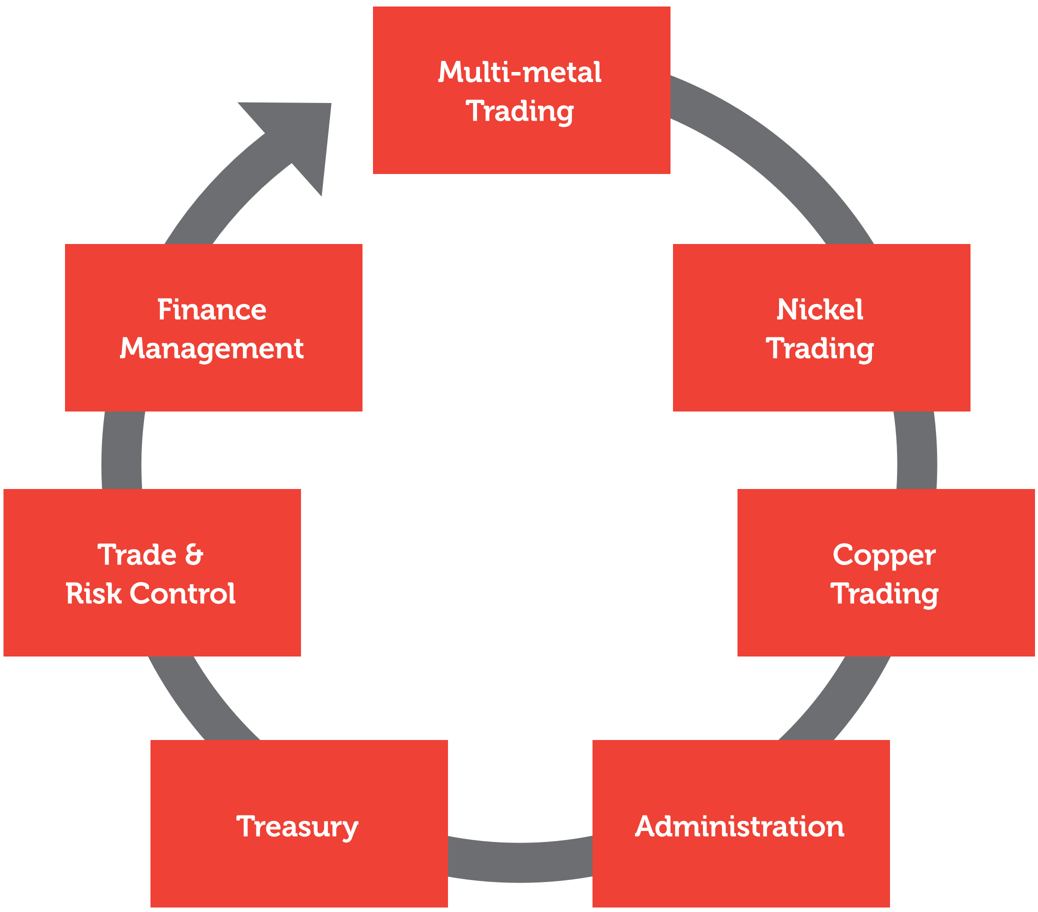
6. JinMai Resources

JinMai Resources is an integrated commodity trading company that focuses on commodity trading, warehousing and logistics, mineral resources and commodity financial services.

It was founded in March 2013 in Yangshan Bonded Port of China (Shanghai) Pilot Free Trade Zone with registered capital of RMB 1 billion. It is the product of a joint venture between Jin Chuan (70%) and Maike (30%). Jin Chuan is a leading global non-ferrous metallurgical and chemical conglomerate with a full set of mining, dressing and smelting capabilities, and it is the no. 1 producer of nickel, cobalt and platinum group metals, and top 3 copper producer in China. Maike is a conglomerate engaged in commodity trading and logistics chain management, as well as investments in metals, mineral products processing, futures brokerage, asset management and logistics, etc.

With a vision to create a globally leading integrated service provider of commodities as well as a world-renowned public company in 3-5 years' time, the company currently has 7 departments and 2 overseas offices, in Singapore and Hong Kong, with volume of trade of non-ferrous metals of 1.5 million tonnes annually.

The company is strategically divided into the following departments:



THE NICKEL TRADING DEPARTMENT

trades in nickel raw materials, cobalt raw materials, nickel, cobalt, refined ferronickel, domestic nickel pig iron and chemicals. The department is divided into domestic and international trading teams that work hand-in-hand to explore various opportunities, including arbitrage between domestic and international prices. They largely operate in the Asian market and offer various services to clients including financing solutions. They also operate 11 warehouses outside of urban areas to store their inventory of raw materials - daily inventory reports are sent to the trading team for monitoring purposes.

THE COPPER TRADING DEPARTMENT

is JinMai's core business division which focuses on domestic and foreign trade of copper cathodes and copper raw materials as well as other related resources, logistics, finance and other integrated services.

The copper department has a young and energetic team whose members have extensive industry experience and an in-depth understanding of the copper cathodes market. They draw on information from both the demand and supply levels in the physical market as well as the price levels from LME and SHFE derivatives to form a daily view of the market. This allows them to employ flexible operational approaches and use various tools to create bespoke solutions for clients, enabling the Company's stable growth.

THE ADMINISTRATION CENTER

is responsible for admin & personnel management, strategic planning, legal coordination and management of overseas subsidiaries.

THE MULTI-METAL DEPARTMENT

is a team within the firm which conducts domestic and foreign trading of non-ferrous metals other than copper and nickel, rare and precious metals and minor metals.

Thanks to its flexible and diversified operation approaches and timely and accurate access to market information, the Multi-metal Department has achieved breakthrough business models, ensuring sustainable and stable development on the back of a core business philosophy of innovation.

THE TRADE & RISK CONTROL DEPARTMENT

assists each business department to achieve their hedging targets, as well as draw up and implement hedging strategies.

THE TREASURY OPERATION CENTER

aims to meet the firm's funding needs with its operations and serve as a liaison with the banks to secure financing lines for the various trading teams in their daily work.

THE FINANCE MANAGEMENT CENTER

is responsible for financial accounting, financial management, financial analysis, and tax planning for the entire company.

7. Yangshan Shengang International Oil Logistics

Yangshan Shengang International Oil Logistics Co. Ltd. is a storage terminal located at one of the busiest hubs in the world.

Storage of crude oil and its derivatives is crucial in oil trading, and is often used by traders to take advantage of a contango market, or even reduce performance and other risks within a complicated supply chain. China is a major importer of crude, and maintains a two-tiered reserve system – a strategic government reserve, and a mandated commercial reserve.

Yangshan Shengang International Oil Logistics Co. Ltd. was formed in 2005 as a joint venture between Shanghai Shengsang (40%), Titan Petrochemicals Group (25%), PetroChina (13%), Shengshi Haixin (9%), Shanghai PetroChina-Tongsheng (5%) and other partners (the remaining 8%). It provides fuel storage in Eastern China, with over one million cubic meters of capacity. This capacity include storage for crude, jet fuel, gasoline and fuel oil – and the facility is the biggest in the region for crude oil products.

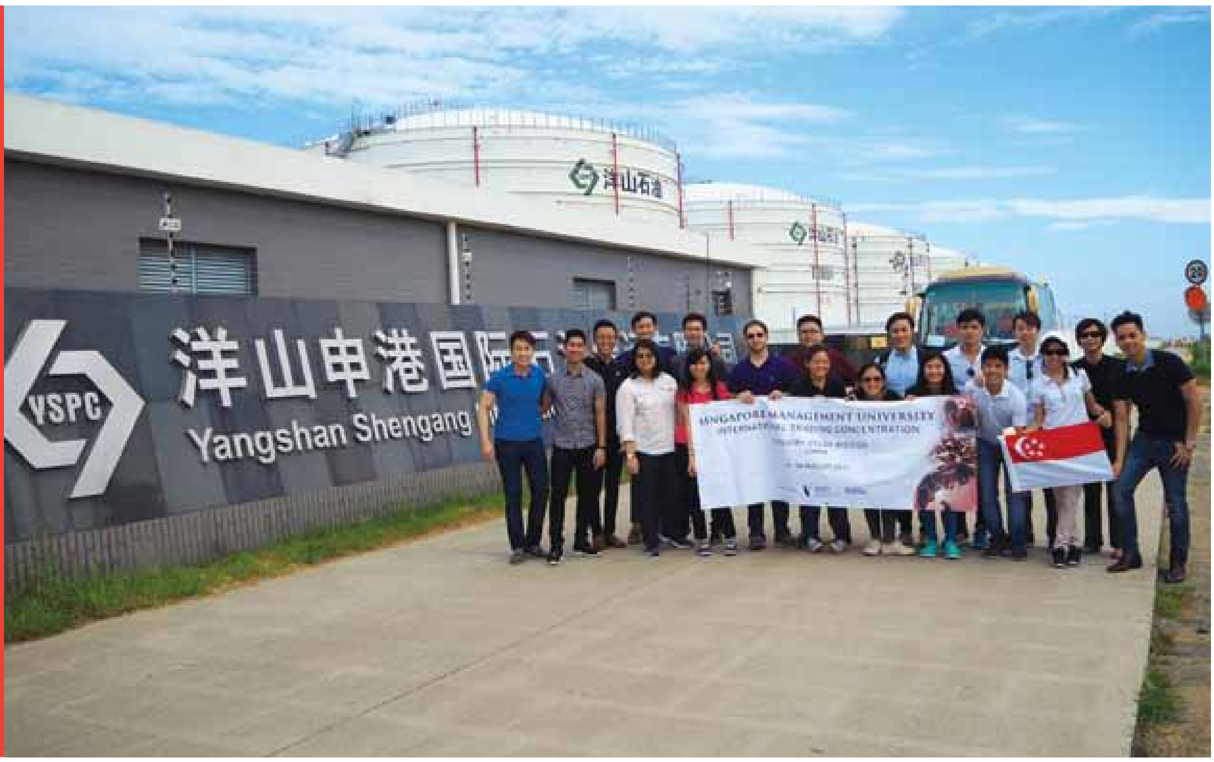
OVERVIEW OF THE TERMINAL OPERATIONS

We had the privilege of visiting the terminal, which was about two hours' drive from Rizhao, and had a chance to see the workings of the storage and transport facilities.

We were informed that this was a dedicated storage terminal with no blending capabilities, and the terminal operators themselves did not take positions in the market – the trading was done purely on behalf of their clients, which include major corporations like China Aviation Oil and SPC.

Storage for light and heavy products (measured in terms of API) was separate, with heavy products generally being more expensive to store. We received a rough quotation for storage charges of approx. RMB 40 per tonne per month, which would be a significant figure for any trader looking to take advantage of a contango in the fuel markets.

The terminal offered two types of contracts – the standard long-term contract, as well as a medium-term 90 days contract that was less frequently used. Interestingly, 80% of the storage capacity is tax-free, as the terminal operates on similar principles to a Free Trade Zone.



YANGSHAN SHENGANG INTERNATIONAL OIL LOGISTICS

PORT CAPACITY AND TERMINAL SYSTEMS

The terminal is close to a port fully owned by the operators and can handle between 40 and 50 tankers in a single month. A network of pipelines pumps the fuel out of the tankers and into the storage facilities. Interestingly, the entire process is automated and controlled from a single Central Controlling Room, which we were fortunately able to see.

The pumping of fuel is done with a +/- 5% tolerance, which implies that there can be a gain or loss on the amount of fuel, with strict quality standards the terminal had to adhere to, including periodic cleaning of the pipelines using air pressure. Third-party inspectors such as SGS-CSTC Standards Technical Services Co., Ltd (SGS), China Certification & Inspection Group (CCIC) and China Inspection and Quarantine (CIQ) are frequently involved to ensure compliance with quality and quantity norms.

OUR OBSERVATIONS

We observed that the relatively large terminal had a relatively small number of staff at work. The operations seemed to be highly automated and thinly staffed, in complete contrast to the labour intensity which stereotypes Chinese industry.

The entire terminal had a 140 strong staff working round the clock in two morning shifts and two night shifts. The central control room we visited was a good example of how almost all the processes in the terminal have been automated, with humans performing a largely supervisory role.

We also saw that the terminal was very stringent on safety standards, which have now come under scrutiny in several of China's industries. We underwent a thorough check at the entrance, and were first shown the fire station, which was fully equipped, with ten firemen and two fire engines on standby.

STRATEGIC OUTLOOK

We saw this terminal as strategically very significant to China's position in crude oil and derivatives in the region, and were able to get an insight into its highly efficient and automated operations. Data from large oil terminals such as Yangshan Shengang is critical to traders when examining the different strategies being used in the market, and to preempt the impact of these strategies regional pricing.

8. Rizhao Iron and Steel

Rizhao Iron and Steel Group has an integrated complex located at Lanshan District, Rizhao City.

It was ranked no. 28 among "Top 500 Chinese Private Enterprises" and no. 20 among "Top 500 Chinese Private Manufacturing Enterprises" in 2012. In 2014, it was the 32nd largest steel producing company in the world with 11.4 million tonnes of crude steel produced.

Rizhao Steel was established on 31 March 2003, and started production on 28 September of the same year. It took Rizhao steel only 181 days from the start of construction on a stretch of seashore to the successful start-up of its first molten iron furnace, a feat which has been praised industry-wide as a metallurgical miracle.

A decade later, Rizhao Steel has now evolved into an integrated enterprise group with across-the-board capabilities in sintering, pellet making, steel making, rolling, oxygen making, power generation and other well equipped facilities.

With total steel production of 15 million tonnes of steel in 2014, Rizhao Steel's core products include HR coil, plates, wire rod, rebar, H-beam, I-beam and channels, welding pipes, GBFS, GGBS, cement, and much more.

Rizhao Steel has an annual output of 5 million tonnes cement, 1.2 million tonnes steel slag powder, 4.8 million tonnes grain slag powder, 9.5 million tonnes HR coil, 2.25 million tonnes wire rod, 1.95 million tonnes rebar, 1.3 million tonnes beam products and 3.2 billion tonnes KWH power generation.

The power generation plant is responsible for fulfilling the daily power needs of the entire complex, and the facility also includes outdoor warehouses for raw material inputs such as coke and iron ore, efficient infrastructure that includes railway lines for transporting materials in and out of the complex as well as access to a seaport. It also has separate indoor and outdoor warehouses for stockholding of its steel products from semi-finished steel products such as steel plates, slabs and billets to finished steel products including wire rods, re-bars, beams and seamless pipes. It also has integrated steelmaking facilities ranging from a furnace for molten iron to continuous casting of semi-finished products to packing of finished products and loading onto trucks for delivery. The production process is automated as much as possible to increase efficiency and reduce manpower costs.

With its integrated production facilities, Rizhao Steel is able to take advantage of economies of scale to maximise production output, allowing it to tap into the international demand for steel in recent years.

9. R&R: Singapore Chinese Chamber of Commerce and Industry

On the last day of the trip, we were invited to the Majulah China-Singapura Dinner event hosted by the Singapore Chamber of Commerce and Industry in China (Shanghai Chapter).

The aim of this event was to celebrate Singapore's milestone 50th year of independence as well as the 25th year of diplomatic relations between China and Singapore. The event was held at the Shangri-La Hotel in Qingdao. The students were undoubtedly highly impressed by the whole event and the amount of detail put in. Although the students were slightly disappointed to miss the national celebrations back home in Singapore, they were pleasantly surprised to be invited to a prestigious event like this that allowed them to share in the celebrations of Singapore's success thus far.

The event showcased various cultural performances along with sumptuous food which was a delectable mix of Singaporean and Chinese fare. Performances included martial arts, flute, fan dance, peacock dance, and a face-off performance which was a crowd favorite before ending with a medley of folk songs. The students also had a chance to meet various Singaporean business leaders who willingly engaged the students and imparted their knowledge and advice at the event. We also had the opportunity to meet the Guest of Honour, Mr Teo Ser Luck, then Minister of State, Ministry of Trade & Industry.

This was a truly enjoyable end to this Industry Study Mission to Shanghai and Shandong. This event also highlighted to us the importance of continued strong economic ties between Singapore and China where Singapore can utilise its strong capabilities in technology and information to tap into potential opportunities in China, with the assistance of the Singapore Chamber of Commerce and Industry.

10. R&R: Tsingtao Brewery (Qingdao)

One of the highlights of our visit to Qingdao was the famous Tsingtao Brewery, founded in 1903 by the Anglo-German Brewing Co., Ltd. Now owned largely by the Tsingtao Brewery Group and Asahi Breweries Ltd., Tsingtao Brewery has a revenue of over USD 4 billion.

Our visit included two aspects – a visit to the Qingdao Beer Museum, and a walk through a mock-up of a Brewery. Both were within the same complex, and complemented each other to give us a holistic view of how Tsingtao Beer has grown over the last century.

The museum has several interesting facts and items, including a wall of famous beers from around the world. It gave us an insight into how Tsingtao has grown, both organically and inorganically – expanding from the original facilities and production processes.

We also visited a brewing facility, where we were shown how the ingredients were assembled from different parts of the world – barley malt from Australia and Canada, yeast from Germany, hops and rice from Western China and water from China's Laoshan Mountain. We learnt how the brewing processes, which have been heavily mechanised, work to meet the rapid growing demand for beer.

Our visit ended with a fresh beer tasting session at the Brewery, where we got to sample the end-products. The visit to Tsingtao Brewery served as the perfect celebratory end to our travels in China!

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