CHEMICAL REACTIONS

The Rise of China

With efforts to advance the Belt and Road Initiative (BRI), China is moving economic globalization forward with concrete actions. China's economy is transforming from a phase of rapid growth to one of high-development (laying down infrastructure to support its growth). The resulting middle-income population is the largest in the world and the BRI provides the chemical industry with an opportunity to service these 400 million people with their increased demand for manufacturing related to higher-quality consumption, energy-efficient buildings, smart transportation, new energy and many other green and low-carbon industries in new cities.[1] A trade war between the USA and China is breaking out following America's actions to combat the perceived loss of intellectual property to China.

INTRODUCTION

The Old Silk Road conjures up evocative romantic images of early trading as far back as 140 BCE. Goods were traded, and ideas, cultures and know-how were also exchanged. The overland Silk Road fell into decline as maritime routes developed enabling larger volumes of goods to be transported faster and at cheaper prices. Negative political situations closed land borders and overland international trade dwindled in the 20th century.

Fast-forward to the 21st century and as America focuses on making itself stronger through inward investment and Europe is sorting out its internal problems, China is outward-looking once again and is putting in the infrastructure to expand its trade networks and is looking to fill the void left by America.

President Xi Jinping's speech in Davos in 2017 and Liu He's (Vice Premier of China) in 2018 both emphasise China's role in the global economy and the importance of free trade. The New Silk Road is being born. China is investing in infrastructure projects around the world to facilitate the movement of goods and is also investing in communication projects (fibre optics) to facilitate trade. China is negotiating free trade agreements and working to overcoming differences in labour, environmental and intellectual property protection to ensure free trade along the route.

BELT AND ROAD INITIATIVE (BRI) – THE NEW SILK ROAD

The BRI infrastructure project costing $900bn will link China with Europe, Central Asia, The Middle East, Africa and South-East Asia through maritime, road and rail networks.

Figure 1. *Silk Road Routes (source: Economist.com)*

The ambitious infrastructure project is being compared to the Marshall Plan, the US economic support effort that helped rebuild Western Europe after World War 2. President Xi said about the development that it will *'unleash new economic forces for global growth, build new platforms for global development, and rebalance economic globalisation so mankind can move closer to a community of common understanding'.*[2]

The launch was attended by 29 heads of state and 100 countries were represented. 60% of the world

[1] Liu He – Davos 2018 Speech; [2] President Xi Jinping speech, BRI Summit May 2017

population will be encompassed by the BRI but notably, the USA, Japan and India have not actively engaged. Vice President Katainen of the European Commission attended the launch and set out the EU-China Connectivity Platform vision, which aims to promote cooperation on infrastructure, including financing, interoperability and logistics, by finding synergies between the EU Connectivity Initiatives and the BRI. The UK has yet to endorse the BRI.

Crucially the BRI will reduce China's dependence on the Straits of Malacca, through which the majority of its trade flows, making the country vulnerable to maritime embargos.

ENERGY SECURITY

China has an abundance of coal but has limited access to oil and gas. 80%[3] of the China's oil imports are transported through the Straits of Malacca. After the Middle East, Africa is China's largest supplier of crude oil, with Angola, South Sudan and the Republic of Congo being the main sources. China has been heavily investing in the continent to secure its energy requirements in exchange for advantageous trade deals. In 2009 China overtook America as Africa's largest trading partner.

China is strategically improving access to key energy sources by investing in infrastructure and working to gain access to major oil and gas producing countries through pipeline and ports, reducing the reliance of shipping through the Straits of Malacca.

The deep-water port of Gwadar, Pakistan, is being jointly developed by China and Pakistan as part of the China-Pakistan economic corridor. With an estimated Chinese investment of $62bn in highways, railways, pipelines, power plants, communications and industrial zones, the port will link the landlocked Western China province of Xinjiang to the sea. It will provide China with access to oil from the Middle East and provide a fast and direct link to international trade.[4]

The International Energy Agency estimate that by 2020 China will be importing 50% of Central Asia's oil and gas production, marking a shift in energy flow from West to East.[5] Kazakhstan supplies China with oil from the Caspian Sea and Aktobe oil fields through a 2,300km pipeline to Western China, whilst the Central Asia-China Gas Pipeline supplies natural gas from Turkmenistan and Uzbekistan.

Improved rail links to Russia will increase trade between the two nations including the supply of coal, oil and energy. The Sino-Russian oil pipeline can supply north-eastern China with 30mT of crude oil annually[6]. The Power of Siberia natural gas pipeline is expected to supply China from December 2019.

An oil and gas pipeline linking South East China to Myanmar's Kyaukpyu port will reduce China's reliance on shipping through the disputed South China Sea.

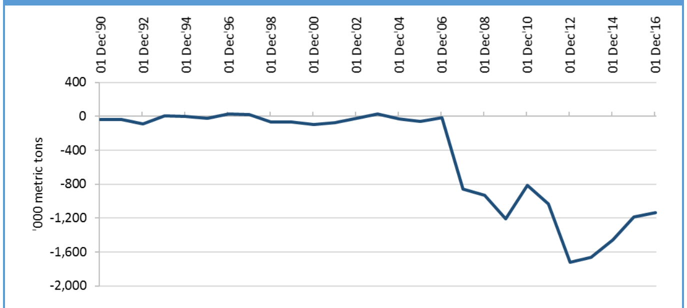
Through building the BRI China is achieving energy security.

CHEMICAL INDUSTRY

China's chemical industry is undergoing a period of change. China is focusing on self-sufficiency, cleaning up the environment and securing technology to grow. The local chemical industry is being rationalised through consolidation and heavily polluting factories are being closed. There are plans to migrate low-value chemical manufacturing operations away from urbanised areas to the BRI route, reduce chemical imports and become a net-exporter of petrochemicals.

Historically, China's limited access to oil and gas and lack of infrastructure has made it a net importer of base chemicals, including ethylene and propylene.

Figure 2. *Ethylene Exports minus Imports*[7]



Over the last 10 years, China, using its abundance of coal, has been developing its coal-to-olefins process; a process criticised for pollution and high-water consumption (often in dry areas). Increasing pressure to reduce environmental pollution, a lower oil price making the coal-to-olefins process economics less favourable, and the increased access to oil and gas from the BRI is seeing China investing in naphtha crackers. 16 new ethylene crackers are being built across the country. The feedstock is mainly naphtha-based, but ethane and LPG are also used. Seven crackers are integrated to refineries. China is opening up the market to private companies as well as the state-owned Sinopec and PetroChina.[8]

It is expected that as China continues to develop its chemical industry, capacity will be added downstream from the crackers to support higher value products.

Hengyi Group is taking advantage of the BRI reach and

[3] Chen, S. (2010) "China's Self-Extrication from the "Malacca Dilemma" and Implications." *International Journal of China Studies*, Vol 1:1, p.2; [4] www.cpec.gov.pk (Mar'18); [5] www.thediplomat.com (18 Aug'16); [6] Reuters (23 Feb'18); [7] Nexant, Bloomberg (Mar'18); [8] ICIS Asian Chemical Connections (18 Sep'17)

is investing in refining and petrochemicals in Brunei. It is expected to produce 1.5mT per year of ethylene and 2mT per year of paraxylene. The chemicals will be exported to China for use in the manufacturing chain producing polyester fibre.[9]

The BRI linking Rotterdam to China facilitates exports. Rotterdam has five refineries and more than 45 chemical companies and has the largest renewable cluster in the world (biofuels, bioenergy and biochemicals). The port, along with the ARRRAR cluster (Antwerp-Rotterdam-Rhine-Ruhr Area), accounts for 40% of chemical production in the European Union.[10]

By increasing the access to imported oil and gas, China can increase its production of key petrochemicals for use in the manufacturing industry. Technology know-how is also critical for development and China uses M&A, amongst other tools, in its drive to self-sufficiency and a greener environment.

M&A SUPPORTING CHINA'S GROWTH

To fuel its growing economy, China has used offshore M&A to secure raw materials to support growth. The initial focus was on securing hard commodities such as iron ore and bauxite used for making steel and aluminium with acquisitions in developed regions such as North America, Western Europe and Australia.

As the economy develops, China is producing more higher value-added products, which require complex technology to process as well as higher value raw materials. In 2016, China Molybdenum acquired the Tenke mine in DRC for $2.7bn. It is the world's largest known deposit of copper and cobalt.[11] Cobalt is a key raw material used in the manufacture of lithium batteries that power electric vehicles. China has stated that it wants five million electric vehicles on the road by 2020[12] as it seeks to improve air quality.

ChemChina has been active in acquiring technology with its acquisition of Pirelli in 2015 and KraussMaffei Technologies in 2016.[11] More recently, China has been focusing on agricultural deals to support its drive towards food security. The largest chemical-sector acquisition by China was ChemChina's $43bn purchase of Syngenta in 2017[11] giving it new technology in advanced agrochemicals and seeds.

Although Chinese Regulators are increasingly scrutinising major capital outflows, we expect M&A to continue in areas that are strategic, such as energy security, food security and a cleaner environment.

[9] Reuters (5 Mar'18); [10] www.portofrotterdam.com; [11] MergerMarket; [12] Reuters (11 Jan'17); [13] China Free Trade Agreements: Maldives, Georgia, Australia, Korea, Switzerland, Iceland, Costa Rica, Peru, Singapore, New Zealand, Chile, Pakistan, ASEAN

FREE TRADE AGREEMENTS

Since the rise of China as a major manufacturing centre, it has been active in eliminating tariffs and taxes to stimulate trade. Free trade agreements have been made with ASEAN, Australia, Singapore, South Korea, and New Zealand, among others[13] and China is in the process of negotiating free trade agreements with countries along the BRI to facilitate the free movement of goods and services.

Notable exceptions to the free trade agreements with China include Japan, India, USA and the EU. There are ongoing political tensions with Japan, particularly related to territorial disputes. Many Japanese businesses are wary of China, and are keen to keep innovative manufacturing technologies, such as advanced robotics, out of China's reach. India is expanding its manufacturing base to be a low-cost producer and doesn't want China to flood its internal market with an alternative source of low cost goods (however, the RCEP, if signed will put in place a free trade agreement which includes China, Japan and India). The EU and USA have concerns over IP protection and China meeting its obligation as a member of the WTO, as well as the level of tariffs.

Comprehensive and Progressive Agreement for Trans-Pacific Partnership (CPTPP)

In response to the BRI, the Pacific Rim countries formed the Trans-Pacific Partnership (TPP) to reduce their reliance on trading with China and to move closer to the USA. The deal would have covered 40% of global GDP (and critically exclude China). The 12 nations: Australia, Brunei, Canada, Chile, Japan, Malaysia, Mexico, New Zealand, Peru, Singapore, Vietnam and the USA signed on 4 February 2016 but in January 2017 the USA pulled out making it almost impossible for the agreement to be ratified. The remaining 11 nations renegotiated and the CPTPP known as the TPP-11 was signed in March 2018, but without the USA only covers 14% of global GDP. The CPTPP covers goods, services and investment and contains common rules for labour and environmental standards, as well as reducing the cost of trading, through reducing tariffs. Provisions over intellectual property rights were suspended during the renegotiation, making it harder for the USA to sign up.

Regional Comprehensive Economic Partnership (RCEP)

The RCEP was formed to deepen the engagement and economic development in the Asian region and to build on some of the existing free trade agreements between parties. The RCEP is formed of 16 countries (Brunei, Cambodia, Indonesia, Laos, Malaysia, Myanmar, Philippines, Singapore, Thailand, Vietnam, Australia, China, India, Japan, South Korea and New Zealand) and is due to be signed in November 2018. Critically it includes China, Japan and India and covers 39% of global GDP.

The RCEP will cover trade in goods, trade in services, investment, economic and technical co-operation, intellectual property, competition, dispute settlement and other issues.

The main difference between the RCEP and CPTPP is that in the RCEP there is no agreement on labour, human rights and the environment.

EU-China Investment Agreement

As part of the EU-China 2020 Strategy Agenda For Cooperation which was signed by China and the EU in 2013, the EU and China began negotiations for an EU-China Investment Agreement which covers investment protection and market access. The agreement should replace the existing bilateral investment treaties between China and EU member states with one single comprehensive agreement covering all EU member states, and potentially lead to an EU-China Free Trade Agreement. The latest talks were in December 2017, but as yet no Investment Agreement has been signed.

China and BREXIT

Following BREXIT, the UK may be able to negotiate directly with China over trade deals. However, once it has left the EU, the UK will no longer offer seamless access to the European markets, so may be less attractive to China. The UK should also note that China usually succeeds in excluding IP protection from its trade deals.

INTELLECTUAL PROTECTION, ENVIRONMENTAL AND LABOUR LAW ALIGNMENT

The main sticking points in discussion with free trade agreements are in aligning intellectual property, labour laws and environmental protection. China is taking steps to clean up its environment, but issues over IP protection remain key. In 2017, the USA initiated an investigation led by Robert Lighthizer to probe allegations that China violates US intellectual property, under section 301 of the Trade Act of 1974. Following the investigation, President Trump announced $50bn worth of trade tariffs on China and China has retaliated by proposing similar tariffs on USA imported goods.

DIGITAL FREEDOM?

Whilst China is laying down miles of optic fibres to improve communications in its economic corridors, mainland China's use of digital communications continues to be monitored and restricted. China has developed its own programmes such as Weixin (WeChat) as other communications tools are restricted. The power of digital communications facilitates free trade by reducing barriers to entry. Access to markets and information is on a real-time basis, transactions speeds are faster, face to face negotiations are facilitated without the need for travel, costs are reduced, and cryptocurrencies prevent third party interruptions on payments. Whilst the free trade agreements and infrastructure projects facilitate free trade, will China be able to fully execute its strategy without liberating international digital communications?

CONCLUSION

With China National People's Congress voting to remove the consecutive two-term-limit on the tenure of President and Vice-President, for the foreseeable future China can continue to pursue its growth strategy set out by President Xi Jinping. Economic globalisation has powered global growth and facilitated movement of goods and capital, advances in science, technology and civilization, and interactions among peoples. Just as traders on the Old Silk Road took the opportunity to fill the caravans on the return journey, supplying China with furs, woollen goods and precious metals, so should the West take advantage of the improved global infrastructure to access the growing Eastern markets. How the New Silk Road will ultimately be used remains an open question, but it is likely to be an important factor for the chemical industry.

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