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China's Mineral Sector and the Belt & Road Initiative

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STRADE is an EU-funded research project focusing on the development of dialogue-based, innovative policy recommendations for a European strategy on future raw materials supplies. In a series of policy briefs and reports, the project will offer critical analysis and recommendations on EU raw materials policy.

This policy brief is part of a series of research articles and reports produced under STRADE. This brief is based on discussions from the STRADE workshop held in Beijing (September 2017) with Chinese stakeholders from the government, state owned enterprises, mining companies and other stakeholders. It presents an overview of the Chinese mining sector and possible impact of the Belt and Road Initiative on raw material engagements.

1. Introduction

China's consumption, over the past decade, has accounted for an increasing share of global demand for iron ore, copper, nickel and zinc (Table 1). In 2018, China's mineral consumption remains the major indicator to forecast global demand for a range of minerals – from gold to lithium, and from copper to iron ore. The country is also a major mineral producer (Table 2), however for key minerals such as iron ore, copper and nickel, domestic production is not sufficient to meet national demand. Therefore, China continues to rely on international markets to meet its consumption needs.

A detailed review of Chinese policy towards international raw material engagements is discussed in STRADE's Report [01/2018](#). In 2003, the whitepaper on 'China's Policy on Mineral Resources', outlined China's 'going out policy' in minerals, and was accompanied by an increased presence and equity share in foreign mineral assets. In 2013, the Belt and Road Initiative (BRI) became the leading vision directing its international engagements.

These engagements have not been without controversy. Incidents have included human rights abuse, such as the shooting of Zambian miners at the [Collum coal mine in 2010](#), and [violations in the DRC](#) mining sector. Environmental damage, such as the coastal dumping of waste associated with the [Ramu nickel mine in Papua New Guinea](#), as well as pollution linked to activities of [illegal Chinese gold miners in Ghana](#).

Disputes also arose in industrial countries, with threats to national security used as grounds for governments to block Chinese acquisition of assets. For example, [Minmetals' takeover of Oz Minerals was blocked](#) by the Australian government in 2009 as one asset (Prominent Hill) was considered to be located in a sensitive military area. Australia's Foreign Investment Review Board also blocked China Non-Ferrous Metal Mining Group's offer for a stake in Lynas

Table 1: Chinese share of global metals demand

	2005	2010	2015	2017
Crude Steel Production*	31%	45%	49%	49%
Copper	23%	37%	45%	46%
Zinc	29%	43%	43%	45%
Nickel	15%	34%	51%	53%

Sources: S&P Global Market Intelligence, WBMS.
*Proxy for iron ore demand

Table 2: Chinese share of global metals supply (2016)

Commodity	Rank	China (Mt)	Global (Mt)	Share (%)
Coal	1 st	3,360	7,310	46.0
Iron Ore	3 rd	224	2,082	10.8
Copper	3 rd	1.85	19.92	9.3
Gold (Moz)	1 st	14.6	96.3	15.2
Zinc	1 st	4.71	12.05	39.1
Nickel (kt)	7 th	100	1,986	5.0

Sources: S&P Global Market Intelligence & CNIA

Corp (developer of the Mount Weld rare earth mine) in 2009, on the grounds that it would threaten supply to non-Chinese buyers.

Controversies were not limited to Chinese overseas engagements; with the country's domestic mineral sector also facing numerous challenges. The Chinese coal sector has had one of the worst global records for fatalities. Small scale mining activity, including lead-zinc and rare earth production, have been linked to adverse social and environmental impacts. Recently, the government has taken steps to close down inefficient, polluting iron ore mines, with nearly 1,000 mining licenses cancelled in 2017. In the provinces around Beijing, Henan, Shanxi and Shandong, potentially 30% of the country's alumina production could be shut down in 2017, to combat pollution. The associated [STRADE policy brief 03/2018](#) on China, discusses some of the measures taken rapidly to improve environmental protection.

The Chinese government, learning from its experiences in the 2000-2010 period, both in the domestic and international mining sector, has moved to refining and evolving its approach to raw materials. This policy brief focuses on the economic and investment drivers of the approach, while an associated [policy brief 03/2018](#) focuses on environmental issues.

The next section starts with a description of the 'new normal' and Chinese mineral demand. This is followed by a brief overview of the financial valuation of Chinese mining companies. The fourth section looks at China's approach to raw materials under its Belt and Road Initiative (BRI), while the final section summarises the impact of these trends on the future of China's raw material engagements.

Before we progress further, it is important first to define one key term – 'China'. The agencies of the Chinese, through its various branches (National People's Congress, State Council and the President, Supreme People's Court and People's Liberation Army) adheres to the principles and guidelines laid out by the Communist Party. When the State Council/President set out a vision, a number of different government departments and agencies, state-owned and private enterprises work together to achieve the same objectives. Therefore, in the subsequent discussion, China refers to the collective actions undertaken by a number of ministries, institutions and enterprises¹. These include important industry organisations such as the China Iron and Steel Association (CISA) and China Non-ferrous Metals Industry Association (CNIA). Chinese government organisations related to the mining industry include²:

- The People's Republic of China National Development and Reform Commission
- Ministry of Science and Technology of the People's Republic of China
- Ministry of Industry and Information Technology of the People's Republic of China
- Ministry of Land and Resources of the People's Republic of China
- Ministry of Environmental Protection
- Ministry of Commerce of the People's Republic of China
- State-owned Assets Supervision and Administration Commission
- General Administration of Quality Supervision, Inspection and Quarantine of People's Republic of China
- National Energy Administration
- State Administration of Work Safety

2. China's demand and the 'new normal'

The five-year period before the global financial crisis of 2008 was characterised by optimism, despite growing imbalances in the global economy. China's average annual GDP growth of over 10% in the 1980s and 1990s was internationally embraced as the "Chinese miracle". Its positive impact, both on domestic and international economies, was expected to continue for decades. However, the 2008 financial crash brought home a number of realities for international markets. For China, it made clear that the economy was overly dependent on investment fuelled by debt and was heavily dependent on infrastructure and construction spending as well as exports of manufactured goods.

As the global and China's economies recovered, the importance of shifting growth from infrastructure investments to consumer consumption and technological innovation became apparent. This would also entail a lower growth rate; around 6% per annum. The new normal, put simplistically, would thus rebalance the economy and focus on better managing the debt holdings of Chinese banks. Given Chinese mineral consumption was heavily linked with its infrastructure and construction spending, mineral consumption would reflect the new normal.

¹ A full list of enterprises can be found [here](#).

² <https://www.rvo.nl/sites/default/files/2016/06/Mining-industry-in-China%202016.pdf>

Figure 1: China's expected consumption* of minerals (2000-2030)

The Chinese Academy of Land and Resource Economics, in its analysis of mining trends under the new normal status presents the following picture:³

2.1. Mineral consumption entering a 'stable' period

Aggregate supply and demand for minerals (coal, iron ore and copper) is now stable and the consumption levels of these traditional resources may be at, or near, peak levels already (Figure 1). Chinese contribution to generating further mineral demand (from its current level) will now be limited.

This does not imply that China will no longer be the core force for supporting mineral markets. It only indicates that the country has reached stable consumption levels and a major increase in demand is not expected. Since 2009, China's share of global consumption of major minerals has remained relatively stable around the following levels⁴:

- Refine Tin 55-62%
- Refined Zinc 43-48%
- Primary Aluminium 40-55%
- Refined Nickel 35-54%
- Refined Copper 40-46%
- Refined Lead 39-45%
- Pig iron yield about 60%.

China infrastructure and construction spending is not expected to continue at the same levels as in the past. Therefore, the rate of increase in mineral consumption will slow down. (Note that this does not mean there will be an absolute decline in total mineral consumption).

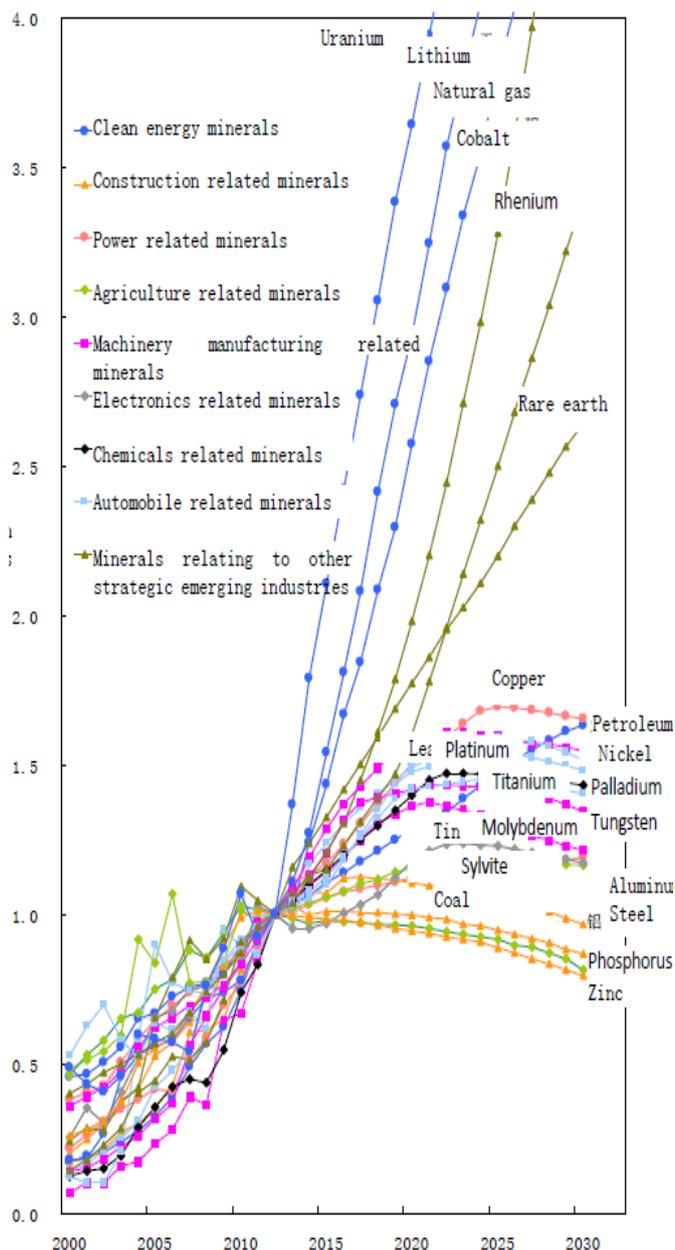
Additionally, the 'Made in China' brand is becoming less competitive (wages have increased, and other countries are now offering similar manufacturing facilities) in the export markets. Therefore, the scale of consumption of minerals in manufacturing and industrial sectors will also not see large increases.

Finally, urban residents with household debt are not likely to increase their consumption spending to compensate for the lack of mineral demand from other sectors.

Combined, these factors will dampen further substantial increases in demand for the 'traditional' minerals.

2.2. Consumption of new minerals

With the changing nature of industrialization (especially related to developments in 'new' energy, electric vehicles, the electronic industry, computers, marine engineering and the space industry), the demand for rare and geographically dispersed minerals will continue to increase. Therefore, the new normal requires a shift to improve resource availability for materials used in these emerging sectors.



Source: Chinese Academy of Land and Resource Economics
*consumption reflected as index, with 2013 = 1

³ Presentation at STRADE workshop in Beijing (September, 2017).

⁴ Figures provided by Antaika (China)

At the end of China's 13th five-year plan, and during the 14th five-year plan, consumption of 'traditional' minerals is expected to be at, or near peak, consumption, while that of clean energy and new material minerals is expected to not reach peak levels until 2030 (Figure 1).

The Chinese Academy of Land and Resource Economics expects China to be the largest global consumer of energy and mineral resources over the next 5 to 10 years. This consumption will result from the industrial transformation the country is currently going through.

2.3. External dependence will remain

The future consumption patterns will only have a limited impact on China's external dependence for minerals. Rare earths, tungsten and molybdenum, and a few other minor minerals will have limited external dependency (Figure 2) as domestic production will be able to meet most of the country's demand.

However, China's import dependency is expected to continue for iron ore, copper, aluminium, lead and zinc. Therefore, for both traditional and emerging minerals, China will rely on external sources to meet its consumption needs.

Increasing concerns for 'quality' of minerals.

The Chinese domestic initiatives around green mining and environmental standards are discussed in more detail in the accompanying policy brief on China. In this Brief, it is important to acknowledge that Chinese stakeholders are becoming increasingly aware of the 'quality' of minerals they consume. Chan (2017)⁵ expects the understanding between the extraction of minerals and the constraints it places on the ecological environment to gradually deepen within the Chinese mineral sector. Therefore, the balance in decision-making between the production of minerals and protection of the environment is likely to weigh more in favour of the latter. This could lead to lower domestic mineral production.

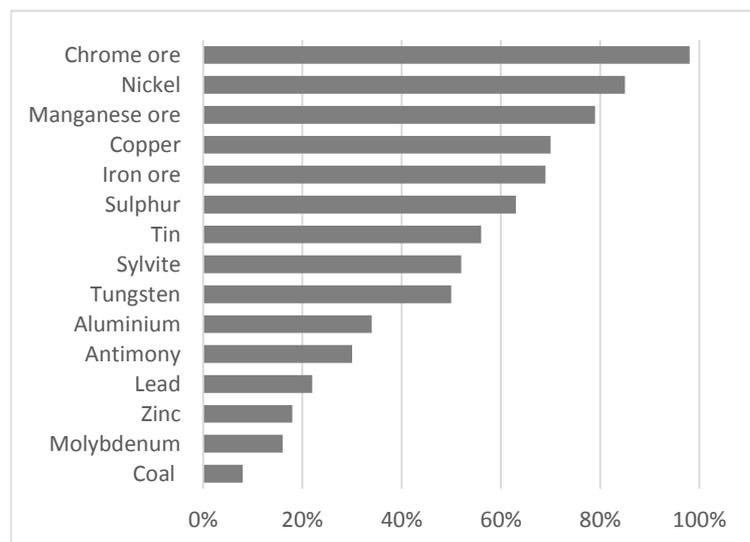
2.4. Chinese companies and profit margins

Domestic mining companies have benefited from the rebound in metals prices over 2016 and 2017. However, this has not been accompanied by an increase in exploration and investment spending. In the January to August 2017 period, corporate gross profits increased over the previous period. However, apart from non-ferrous metals, investment by both the public and private sector has decreased (Table 3). Investment confidence has not returned to the sector.

While the data shows investments in the domestic mining sector, it is likely to be reflected in sentiments for international investments. As shown later in this Brief, Chinese mineral investments under the Belt and Road Initiative have also been low.

Mineral consumption under the 'new normal' is expected to be different from the trend in the period 2000-2010. First, as the economy shifts from infrastructure-investment driven growth to consumption-driven growth, the rate

Figure 2: Chinese external dependency for minerals (2016)



Source: Chinese Academy of Land and Resource Economics & Antaika

Table 3: Chinese domestic investment: Jan – Aug 2017 (YoY change)

	Gross profit (%)	Total investment in fixed assets (%)	Investment by private sector (%)
Ferrous metals*	36.6	-18.8	-20.9%
Non-ferrous metals	47.1	6.8	9.2%
Non-metal minerals	8.5	-5.8	-3.5%

Source: Chinese Academy of Land and Resource Economics
*reflect January-July 2017 data

⁵ Presentation at STRADE conference 'Cooperation on Sustainable Raw Materials for China and Europe', Beijing 2017.

of growth of mineral consumption will slow down. The consumption of traditional minerals (iron ore, nickel, zinc, copper etc) will not see similar increments as experienced in the previous decade.

As noted, greater investments in clean energy, electric vehicles and new materials will be accompanied by a shift in demand for new minerals (lithium, cobalt, rare earths etc). The new and traditional demand for minerals will gradually see more consideration for environmental impacts.

Domestic mining activity has not seen a resurgence in investment, and confidence levels have not returned to previous peaks. Increase in mining investment may not occur until such confidence returns. While China is a major producer of many minerals, it will remain dependent on external sources to meet its domestic demand. China is expected to remain the major global consumer of these metals, and a significant decrease in this consumption is not expected.

China's general approach to (policy on) raw materials has been very pragmatic over the past two decades. The country imported raw materials from countries where the import costs were lower than domestic production. Part of the domestic growth of China's mining sector, and tolerance towards its pollution, reflected the fact that global markets could not provide China with the materials it needed to sustain its industrialisation. Now that growth is lower and global raw material availability more abundant, China can afford to see its domestic mining sector wound back and regularised.

This new normal therefore has three implications for China's raw material engagement strategy. First, as China enters a more stable consumption period, its drive to secure external sources for traditional minerals has lost some impetus. Second, as part of the new normal, the consumption patterns will shift to emerging minerals, and environmental considerations will become more important. Third, as long as minerals are available in global markets, at costs lower than domestic production, China's enthusiasm to acquire overseas assets will wane. Given these trajectories, China's external raw material engagements will change.

3. Finance and China's mining companies

So, how large are China's mining companies, and how are they financed? STRADE report [01/2018](#) discusses the number of mining projects (whether exploration or extraction) from a number of non-EU countries, and found that most of Chinese overseas mining activity is located in the Asia-Pacific region. The report notes that data on Chinese companies is often difficult to identify, and is largely restricted to those companies listed on international stock exchanges. Based on data from S&P Global Market Intelligence, Figure 5 shows the Total Enterprise Value (TEV) of mining companies from Australia, Canada, China, EU, Japan and the United States of America (USA).

TEV is a common valuation within the investment community for the 'worth' of a company. TEV is defined as market capitalization (share price x number of out-standing shares), plus the value of other equity, debt and mezzanine financing (at book value) less cash and cash equivalent (as these are already reflected in the share price for the company).

With limited data, the TEV is used to estimate, in relationship to other countries, how large China's mining companies are, and whether they have increased in size over the 2010 and 2016 period.

In general, the value of listed mining companies declined between 2010 and 2016; which is a reflection of the global mining sector as a whole. Canadian companies retain the largest enterprise value, followed by Japanese companies. This is a reflection of the integrated nature of most Japanese companies; where they own mining operations as well as supply a number of high value manufactured

Figure 5: Total Enterprise Value of Mining Companies (2010 -2016)*



**Only includes companies listed on major stock exchanges
Source: S&P Global Market Intelligence; as of January 2018*

products (such as Mitsubishi). This data also includes the steel sector, where Japan is the second largest producer in the world.

China's valuations are comparable to those of Australian companies. Chinese mining company valuations also include the energy and steel sector; the vertical integration is similar to Japan. Australian companies tend to be less vertically integrated. Companies from the EU are comparable to the USA – however both are at the lowest end of valuations in Figure 5.

3.1. Share of global mining industry

In terms of the value of the global mining industry, coal production still accounts for the largest share of the industry. The second largest mining company in the world (by value of production) is a coal producer – China Shenhua Energy Co. Ltd.

Based on the country of corporate headquarters, Chinese companies accounted for 7.7% of global mining value in 2016, followed by EU-based companies and then Australia (Figure 6). A large share of China's mining value does come from the coal sector.

The top five non-coal mining Chinese mining company are:

Zijin Mining Group: Listed on the Hong Kong stock exchange, the company has an extensive portfolio of gold, copper, lead and zinc, tungsten, iron ore projects across 24 provinces in China and nine foreign countries.

Jiangxi Copper: Focuses on copper, the company integrates mining and refining operations and is one of the largest copper cathode producers in China. Most of its operations are based in China, although the company has part ownership in the Escondida copper project in Chile.

China Molybdenum: Copper, cobalt, niobium and phosphates producer, the company has operations in Australia, Brazil and the DRC, as well as a few projects in China.

Shandong Gold Mining: Major gold producer, with most of its operations being located in China.

Chinalco Mining Corp: CMC is a resource development company acting as the core platform for the future acquisition, investment, development and operation of non-ferrous and non-aluminium mineral resources and projects overseas for parent company, the state-controlled Aluminium Corp of China Ltd (Chinalco)

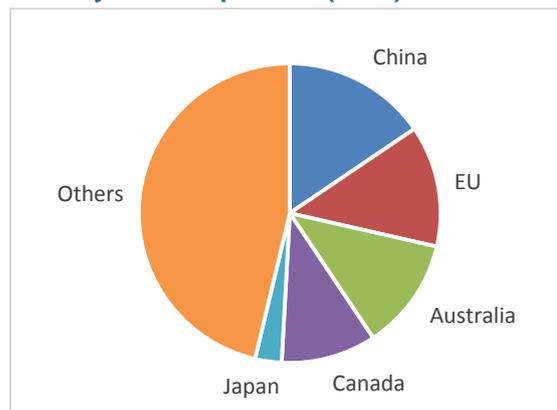
Table 5 shows the ownership summary for these five firms. Apart from Chinalco, where 85% of the shares are held by an entity that is state-owned, none of the firms have significant state-ownership. The shares held by institutions refers largely to private or corporate investment funds, while 'corporations (private)' refers to shares held by other corporations. Details on these corporations are not easily available and may have some element of state ownership. The 'Individuals' column refers to single strategic owners. 'Public and other' refers to common shares in the public domain, where no individual has a significant holding. Contrary to popular belief, Chinese mining companies are not always state-owned.

Table 5: Ownership summary of top five (non-coal) Chinese mining companies (%)

	Institutions	Corporations (private)	Individuals	State ownership	Public & other
Zijin Mining Group	20.8	29.6	0.6		49.1
Jiangxi Copper	15.3	40.7	0.5		43.4
China Molybdenum	22.0	24.7	26.3		27.1
Shandong Gold Mining	13.5	57.3	1.5	0.3	27.5
Chinalco				84.6	

Source S&P Global Market Intelligence; as of January 2018

Figure 6: Share of global mining value by country of headquarters (2016)



Source S&P Global Market Intelligence; as of January 2018

4. The Belt and Road Initiative

The BRI, launched in 2013, involves Chinese investment, mainly in infrastructure projects along the old silk route. Hard infrastructure (roads and rail networks) are accompanied by trade and transportation agreements.

Estimates on finance vary; USD 4 trillion in investments are widely mentioned, with USD 900 billion in deals already announced by early 2017⁶. Other estimates suggest China is spending roughly USD 150 billion a year in the 65 countries that are part of the initiative.⁷ BRI is often compared with the Marshall Plan (the USA's aid initiative to rebuild the economies of Western Europe in 1948-52, after the end of the Second World War). In today's money this would equal a mere USD 150 billion⁸.

The BRI is often understood as a roadmap for international engagement, its primary driver comes from China's domestic economy. China currently holds vast foreign exchange reserves; its sovereign wealth fund (China Investment Corporation) alone manages nearly USD 900 billion (July 2017). China also needs to create markets for its companies (state owned or private), where domestic opportunities are not sufficient. Foreign markets are envisaged to absorb the excess Chinese production capacity, as imports, in cement, steel and other metals. These domestic firms generate substantial employment and are financed by Chinese banks. Therefore, creating external markets is fundamental for the rebalancing of the Chinese economy.

While BRI investment figures appear large, compared with China's domestic fixed asset investments (around USD 10 trillion a year) the BRI investments are relatively low. Indeed, BRI spending is likely to have a limited practical impact on materials use, or at least a lesser impact than developments in China itself. Its political importance, and its role in regional economic integration, is much greater.

BRI is also a tool to cement foreign relations and partnerships. China has actively stepped away from using 'development assistance', and all its associated vocabulary, in its engagements with developing and emerging countries. It also approaches industrial countries on a more equal footing. Over the past year, with the nationalist rhetoric originating from the White House, China has increasingly taken on the space vacated by the USA. For example, within a week of the USA's announcement of withdrawal from the Paris Climate Accord, China declared its firm commitment to the agreement.

Wang Yi, the Chinese foreign minister, in 2014 referred to the BRI as President Xi's most important foreign policy. Its aim is to turn Eurasia into a viable economic and trading area, with China at its centre. Additionally, and perhaps more importantly, the region would become a rival to the more traditional transatlantic economic and trade area.

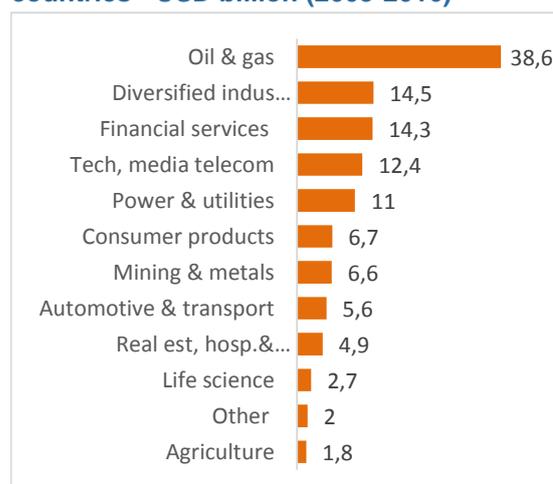
President Xi sees China in a leadership role on the global stage, and part of that is delivered through the BRI. The language around the BRI continues to focus on partnerships and 'win-win' rather than assistance.

The National Development and Reform Commission, the Ministry of Foreign Affairs and the Ministry of Commerce, in joint statement (September, 2015) was careful to describe this as an initiative and not as a strategy, program, project or agenda⁹.

The term 'initiative' is deemed to be less threatening and more inclusive of host countries. It also allows for a number of different bilateral agreements to fall under the same banner – described by Hillman (2017) as 'exciting but vague'. While a strategy has clear outcomes and goals included, the BRI, by limiting itself to a vision, becomes a collection of approaches that are hard to judge and measure. As Hillman reports "There are now over 100 think tanks studying the BRI. There are BRI fashion shows, music festivals and cartoon exhibits."

According to the Belt and Road Big Data Report 2017 published by the State Information Centre, among the most influential 50 enterprises participating in the BRI, 42% are private enterprises, 36% are state-owned enterprises directly under the administration of the

Figure 3: China's M&A activity in BRI countries - USD billion (2005-2016)



Source: [Mergermarket via EY](#)

⁶ <https://www.csis.org/analysis/chinas-belt-road-initiative-must-become-strategy>

⁷ The Economist; 15 May, 2017

⁸ The Economist also reports that the Chinese do not appreciate comparing BRI to the Marshall plan, as they see the latter as a reward for the USA's friends and omit its enemies after the second world war. The BRI on the other hand is open to all.

⁹ <https://thediplomat.com/2015/12/is-chinas-belt-and-road-a-strategy/>

central government, 20% are state-owned enterprises administrated by local governments, and 2% are joint-venture enterprises.

4.1. Metals and Mining

The metals and mining investments under BRI are not always clear, precisely because of the open-ended nature of the initiative – almost every investment and trade agreement can fall under this. There are no official data on project investments under BRI. Some are reported under BRI, while others are not.

One measurement used to approximate the importance of mining is the value of merger and acquisition deals reported in BRI countries (note this does not imply all these investments were under BRI). At USD 6.6 billion, over a 10-year period, the sector has not been the major recipient of Chinese investment (Figure 3).

A second estimate can be derived from the number of metals and mining project investments by Chinese companies, and differentiate those that are reported as falling under BRI. Using a data set compiled from [China Global Investment Tracker](#), Figure 4 shows the number of projects that fall under metals, and can include both mines and smelters, as well as those for steel and aluminium projects.

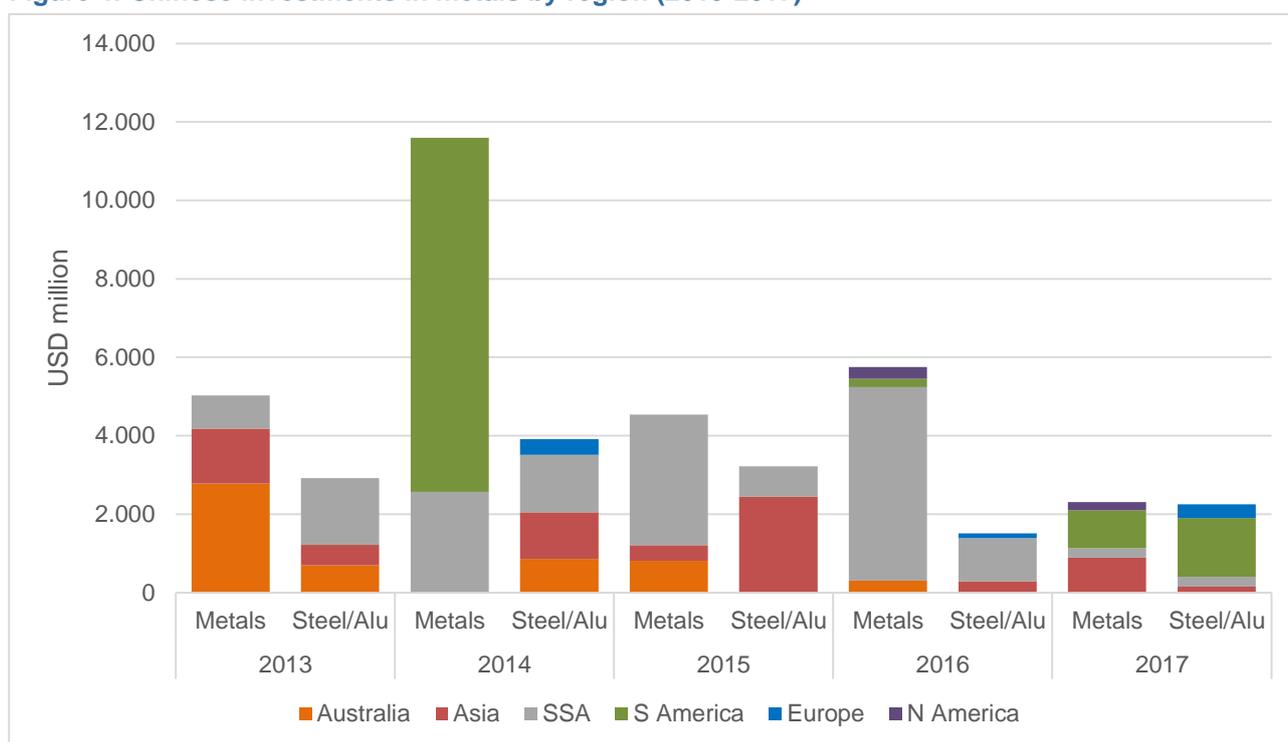
The data reflects 56 documented projects, of which 24 were in the steel/aluminium category. Of the 56 projects, only 14 are reported as under BRI, accounting for 13% of the value of total investments.

In 2013, of the USD 5 billion invested under metals, 55% was invested in Australia, followed by 28% in Asia (Indonesia and Malaysia). In the steel and aluminium category, of the USD 3 billion in investments, 58% was invested in one project; SSA, a steel plant in Sierra Leone.

In 2014, the largest investment was made in Peru by Minmetals (USD 7 billion) in the metals category. In 2016, three of the largest investment deals were in the DRC: USD 2.6 billion (China Molybdenum), USD 1.1 billion (BHR) and USD 1.1 billion (Bank of China) – all in copper projects.

Apart from 2014, China's investments have remained below the USD 6 billion mark annually. Investments under the metals category have generally focused on steel and aluminium. China's investments in Europe have been in the steel sector.

Figure 4: Chinese investments in metals by region (2013-2017)



Source: SNL calculations from China Global Investment Tracker <accessed January 2018>

Chinese metals and mining players were excited about the expected potential investment and market opportunities generated by BRI. However, as time went on, they slowly realised that the potential market was rather limited, and it takes a long time to unleash the market in most emerging countries covered by BRI. Taking steel as an example, the 65 countries covered by BRI have aggregate annual steel demand of about 350 Mt and they are able to domestically produce about 290 Mt. This suggests that those countries have a self-sufficiency of approximately 80%. Moreover, many countries have built their own supply chains, and are

ambitious to expand their domestic capacities quickly, such as Vietnam, Indonesia, India, Iran, etc. Therefore, the scope for Chinese steelmakers is likely to be limited.

Another factor driving Chinese refinery/smelter investments overseas is the trade actions taken by the BRI countries against Chinese steel exports. In light of the situation, there is a tendency for more and more Chinese metals and mining investors to change their approach, and build refining capacities in other resource-rich countries, rather than importing minerals into China for refinery.

Interpreting the data presented in this policy brief has been challenging – mainly as information and understanding of China, its investment and raw materials policies, remains limited. The Chinese trends would also need to be differentiated from the cyclical changes that occur within the global mining sector.

For example, the declining interest in overseas metals and mining investment, particularly under the BRI can simply be a result of the lack of accurate data on Chinese investments. Or Chinese investors may have become more discerning, given some of their negative experiences in acquiring poor assets during the commodity price boom. Chinese investors may also be less inclined to seek further mineral assets abroad, given the new normal for the Chinese economy and the availability of minerals from global markets.

The results could also simply be a reflection of the state of the global mineral sector, which only started its resurgence in 2017 and complete confidence has, as yet, not returned to the sector. The reality is, in all probability, a combination of all these factors. At this time, there is insufficient evidence to conclude the role of BRI in shaping China’s international mining engagements.

4.2. Coordination, calibration and credibility

The four years so far under the BRI (2013-2017) have yielded 100 cooperation agreements, with 86 countries and international [organizations](#).¹⁰ The associated [Silk Road Fund](#) has signed 17 projects with a projected value of USD 7 billion. Part of the BRI strategy is to open new markets for Chinese companies and products. The initiative through its funding for infrastructure can generate secondary demand from other regions. For example, BHP Group, one of the top three global producers of iron ore, believes that infrastructure spending under BRI can delay China’s peak steel demand until the mid-2020s (although many analysts believe demand has already peaked). Other analysts argue that China’s ambitious plans to build roads, railways and ports in countries might boost steel demand by a total of 150 Mt.

While there is a note of optimism related to the BRI, both in and outside China, there are also challenges. The Economist (May, 2017) cites three main issues.

First, it remains unclear who leads the BRI; different provinces have their own BRI strategies as do state-owned enterprises. The coherence of these policies, a clearly defined leadership and to responsibilities are missing.

Second, with the large amounts of funding involved, the identification of profitable and viable projects for investments remains limited. This has led to a number of projects turning out to be economically unviable and quickly collapsing. For example, nearly 43% of the total overseas mining assets owned by China are currently listed as ‘inactive’ (Table 4).

Finally, China’s traditional ‘non-interference in internal affairs’ approach in other countries is coming under scrutiny, with questions around the lack of transparency of such deals. Similar questions had been raised around the Infrastructure for Commodities model used during the 2003-2008 period.

The EU has not fully engaged with BRI. A [briefing](#) (July 2016) from the EU on the BRI also documents concerns that Chinese engagement with individual member states and not the EU as a whole can be interpreted as ‘divide and rule tactics’.

One of the other concerns of the EU has been BRI’s commitments to social and environmental sustainability are absent as is transparency. On the BRI, one high-level EU diplomat is [quoted](#) (May, 2017): “We made clear that, for Europe, the Belt and Road initiative can only be a success if it’s based on transparency and co-ownership ... Apparently to Chinese surprise, the EU was united on this”. However, as the accompanying [STRADE policy brief on China 03/2018](#) points out, the China Banking Regulatory Commission (CBRC) outlined the need for Chinese banks to establish a sustainable financial protection system with controllable risk that services, similar to the [Equator Principles](#), for project financing under BRI. Other Chinese funding

Table 4: Number of China’s overseas assets (projects and mines)

Commodity	Total assets	% Inactive
Coal	48	25
Copper	62	48
Gold	63	32
Iron ore	71	56
Nickel	17	41
Uranium	25	60
Zinc	13	38
Total	345	43

Source S&P Global Market Intelligence; as of September 2017

¹⁰

have also added similar rules to their internal policies. While the initiative itself may not mention environmental suitability, it is considered within the financing for such projects.

5. Conclusion

China's approach to international raw material engagements over the past 20 years has evolved considerably; from the Resources for Infrastructure model in the 2000-2010 period, to the post-2013 BRI approach. The shift can be attributed to a number of issues; foremost among them the changing pattern of mineral consumption. It is also a reflection of changing domestic and foreign policy in the country.

China's 'going-out' experience provided a sharp learning curve for both its public and private sector; often criticized for its operations abroad (not only in the mining sector). However, it should be remembered that pre-1990, China had very limited experience of international engagement. As the country ventured into foreign markets, it quickly dawned on most companies that things do not operate in the same way abroad as they do domestically.

This experience has changed the way China now approaches foreign investments. The attempt is to be more inclusive of the countries in which they operate: "The new policy explicitly encourages Chinese enterprises to work with local businesses in sectors like logistics, electricity, and information systems, and it promotes interaction among business, community, and government leaders"¹¹. Chinese companies abroad are also being encouraged to move from a 'build and deliver' model to 'build and operate', thereby taking on managing and operational duties.

The BRI, after a slow start in 2013, is beginning to gather steam, indications are infrastructure, and manufacturing, will be the key focus of these investments. Mining asset acquisition is not central to this initiative, and data indicates investments and purchases are much more selective than before. China is no longer 'the dragon' that is seeking to purchase global mineral assets. Although the country will continue to be a major consumer of minerals, China's primary focus has always been downstream, in value-added manufacturing. China's ambitions to be a major owner of international mining assets appears to have diminished.

¹¹ <https://www.weforum.org/agenda/2017/05/chinese-overseas-investment-is-changing-and-the-rest-of-the-world-will-learn-from-latin-america>

Project Background

The Strategic Dialogue on Sustainable Raw Materials for Europe (STRADE) addresses the long-term security and sustainability of the European raw material supply from European and non-European countries.

Using a dialogue-based approach in a seven-member consortium, the project brings together governments, industry and civil society to deliver policy recommendations for an innovative European strategy on future EU mineral raw-material supplies.

The project holds environmental and social sustainability as its foundation in its approach to augmenting the security of the European Union mineral raw-material supply and enhancing competitiveness of the EU mining industry.

Over a three-year period (2016-2018), STRADE shall bring together research, practical experience, legislation, best practice technologies and know-how in the following areas:

1. A European cooperation strategy with resource-rich countries
2. Internationally sustainable raw-material production & supply
3. Strengthening the European raw-materials sector

Project Identity

Project Name	Strategic Dialogue on Sustainable Raw Materials for Europe (STRADE)
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Consortium	
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