

# The Chinese Import of Critical Minerals from Africa

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# The Chinese Import of Critical Minerals from Africa

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## Executive Summary

1. Critical minerals are essential for economic development and national security and are facing rising demand levels due to their importance for green technologies. China has a dominant position in the production of critical raw materials, with a market share of 45 percent of global supply—more than the next 10 countries combined.
2. In recent years, China has made important inroads in securing sources of critical minerals in Africa. The number of Chinese-owned active mines in Africa has grown rapidly and Chinese firms now control important shares of African countries' production of various critical minerals, including 82 percent of bauxite, 41 percent of cobalt, and 40 percent of uranium.
3. Beijing's most important tools to secure critical materials like Platinum and Bauxite is economic. In addition to securing mineral supply through trade contracts, Chinese firms invest heavily to secure deposits in African countries like the Democratic Republic of Congo. In some cases, this is facilitated by Chinese government finance.
4. Neither Chinese peacekeeping operations nor support for multilateral security groupings in Africa is primarily intended to secure critical minerals but, by broadening Sino-African ties, both are effective at supplementing the use of economic tools.
5. To reduce Chinese dominance over critical minerals mined in Africa, NATO member states should encourage domestic firms to invest in production capacity. More needs to be done to increase NATO members' own critical minerals production and to maintain access to deposits around the world, including in Africa.

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## Introduction

The 2021 United Nations Climate Change Conference (COP26) concluded on November 12<sup>th</sup> in Glasgow. A key item on the agenda was the need for a move towards green technology, particularly in a handful of carbon-intensive sectors. Decarbonization in sectors like energy production, transportation, and infrastructure will rely overwhelmingly on a few critical minerals, including copper, lithium, nickel, cobalt, and a group of elements referred to as rare earths.<sup>1</sup> Unfortunately, the supply of these minerals is limited. In the words of Faith Birol, the Executive Director of the International Energy Agency (2021), “Today, the data shows a looming mismatch between the world’s strengthened climate ambitions and the availability of critical minerals that are essential to realising those ambitions.”<sup>2</sup>

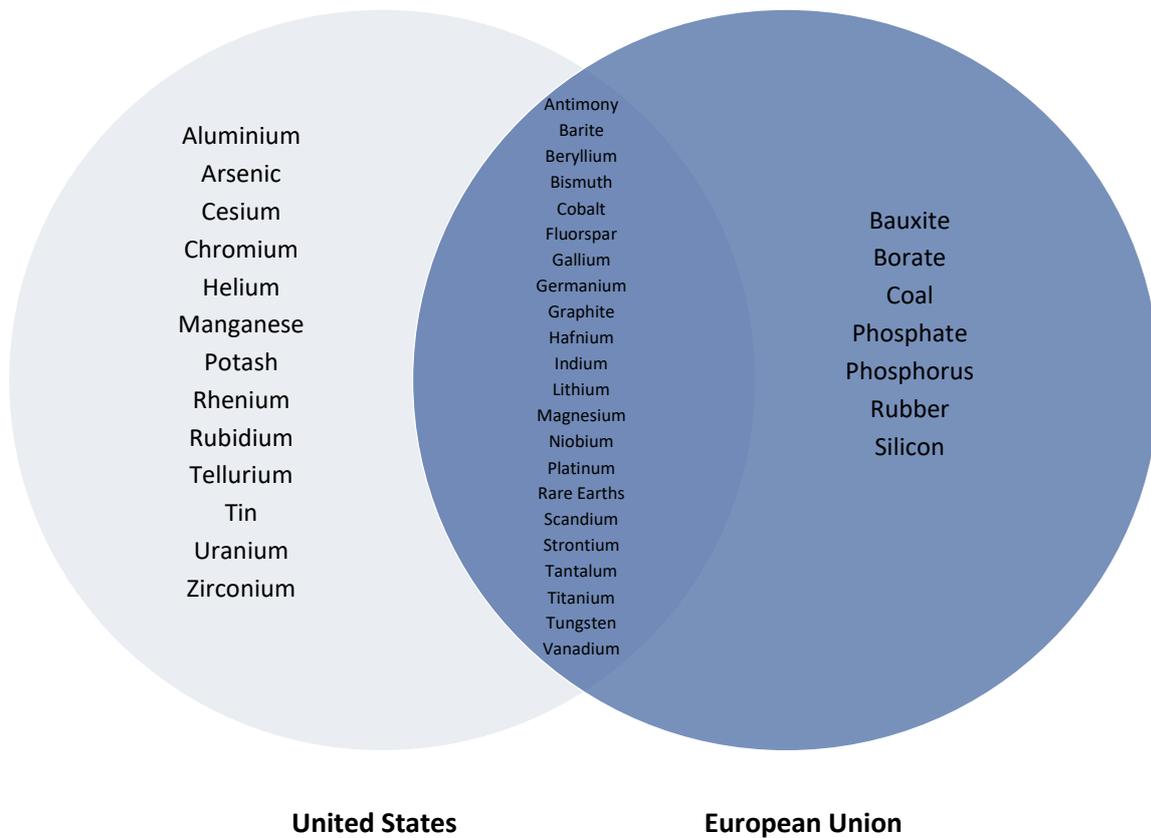
The exact language differs by government, but critical minerals are broadly defined as minerals that possess vital importance for economic activity and national security, but for which there are no immediate viable substitutes. Critical minerals are used in a huge range of applications, from mobile phones to fighter jets. And since they are also the backbone of many green technologies, a mismatch between demand and supply is taking place. Recognising that this presents a threat to their national interests, the United States and the European Union are paying increasing attention to the supply of critical minerals (see Figure 1 for lists of what minerals they consider critical).

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<sup>1</sup> Birol (2021)

<sup>2</sup> Ibid.

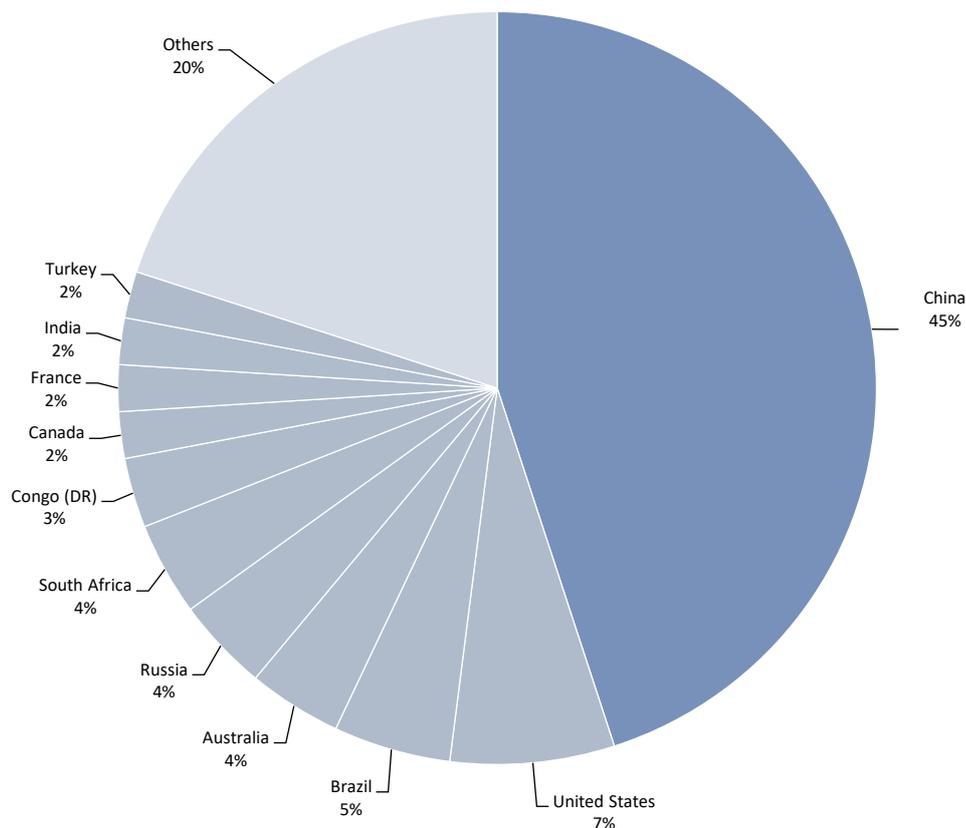
Figure 1: The United States' and European Union's Respective Critical Minerals Lists<sup>3</sup>



With more control over the mines that hold various critical minerals than any other country, and unparalleled processing capacity, China currently plays a dominant role in the production of critical minerals. While governments' definitions of critical minerals differ, according to the European Commission, China's share of global critical raw materials production is larger than that of the next 10 largest producers combined (see Figure 2).

<sup>3</sup> Bobba et al. (2020); Demas (2018)

Figure 2: Suppliers' Estimated Market Share of Critical Raw Materials<sup>4</sup>



In some cases, China's critical minerals wealth comes down to luck. For instance, China sits on about 30 percent of the world's reserves of antimony,<sup>5</sup> which is essential to the production of semiconductors. Beyond domestic reserves, Chinese economic actors have been skilled at securing resources abroad, including in Africa. The African continent possesses the world's largest reserves of many critical minerals, such as bauxite (Guinea), chromium (South Africa), cobalt (Democratic Republic of Congo), manganese (South Africa), platinum (South Africa), phosphate (Morocco), and rubidium (Namibia).<sup>6</sup> Figure 3 highlights the African continent's numerous critical minerals deposits. Furthermore, many important deposits are likely missing because, while Africa has vast minerals riches, they remain relatively underexplored.<sup>7</sup> All of this makes the continent an attractive target for Chinese firms. Between 1995 and 2018, the number of Chinese-controlled operating mines in Africa grew from zero to 20.<sup>8</sup> Furthermore, as of 2018, Chinese firms controlled important shares of African

<sup>4</sup> Penke (2021)

<sup>5</sup> Klochko (2020)

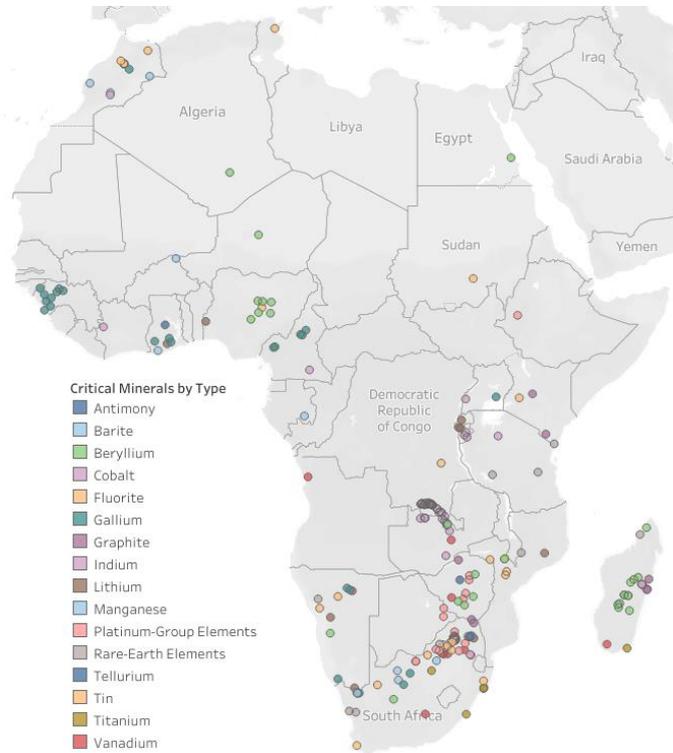
<sup>6</sup> Author's Research, drawing on data from the United States Geographical Survey

<sup>7</sup> NA (2021A)

<sup>8</sup> Ericsson et al. (2020)

countries' production of various critical minerals, including 82 percent of bauxite, 41 percent of cobalt, and 40 percent of uranium.<sup>9</sup>

Figure 3: Deposits of Selected Critical Minerals in Africa<sup>10</sup>



China's imports of and investments in African countries' critical minerals matter to NATO countries because they could make it more difficult for their own firms to secure these minerals in the future. This is especially important because, as discussed in this report, Beijing has been accused of using its dominance over certain critical materials to pressure other governments on topics unrelated to the minerals trade, such as territorial matters.

<sup>9</sup> Ibid.

<sup>10</sup> Author's Research, drawing on data from the United States Geographical Survey

## **Methodology and Structure**

To explore China's imports of and investments in African countries' critical minerals, this commissioned report analyses publicly available sources data and supplements them with case studies. The cases, which focus on China's platinum imports (largely from South Africa), investments in the Democratic Republic of Congo's copper sector, and resources-for-infrastructure agreements in Guinea, are meant to highlight the structure and breadth of Chinese engagement in Africa's critical minerals sector. These cases are largely based on desk research, though the Congolese case also draws on fieldwork conducted by the author in 2016, as part of which dozens of interviews were conducted with government officials, Chinese investors, and civil society organization members.

## **China's Multifaceted Strategy to Secure its Supply of Critical Minerals in Africa**

Despite its dominant position in the sector, Chinese demand for critical minerals continues to grow. This surge in demand is felt strongly in Africa. Between 2010 and 2019, Chinese imports of bauxite from Guinea, which has the world's largest reserves of the ore, grew by a factor of almost 3,000.<sup>11</sup> Chinese imports of cobalt from the Democratic Republic of Congo, by far the world's largest producer of the metal, which is essential to battery production, highlight a similar trend. They grew more than fourfold in the same period.<sup>12</sup> Finally, Chinese imports of Namibian uranium, its primary source of the radioactive material, grew almost sixfold during that time.<sup>13</sup> This section explores different approaches used by Chinese firms to secure critical minerals in Africa.

While Chinese demand for most critical minerals remains high, different firms use different approaches to secure them. These approaches depend on, among other things, the structure of the Chinese firms themselves, the market conditions that prevail in the trade of specific minerals, and the political and economic characteristics of the countries that produce them. Broadly speaking, critical mineral imports can take place in two ways: contracting and equity investment production. The two entail different types of risk on the demand side. Contracting—via spot contracts or long-term contracts—entails greater flexibility than equity investments, but it can also expose buyers to supply issues when production tightens up or prices increase. Equity acquisition, by providing buyers with an ownership stake in a mineral deposit, provides protection against supply shocks. However, because it

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<sup>11</sup> NA (2021C)

<sup>12</sup> Ibid.

<sup>13</sup> Ibid.

ties up investors' capital in specific countries—which, in the case of resource producers, often means politically-unstable countries—this security comes at a cost. The share of Chinese resource imports that comes from equity production varies significantly across sectors. In the case of platinum, for example, it is relatively small. When it comes to copper, on the other hand, it is more substantial.

China is the largest market for platinum consumption in the world, and accounts for 26 percent of global demand for the precious metal.<sup>14</sup> As mentioned above, this demand is largely met through contracting. Despite the Chinese economy's strong demand for platinum, Chinese investors have little equity in the world's most important platinum mines, most of which are in Africa. In fact, as of 2020, Chinese firms had no major ownership stake in any of the world's largest platinum mines.<sup>15</sup> South Africa is by far the world's largest producer of platinum. In 2019, it accounted for more than 70 percent of global production.<sup>16</sup> While Chinese firms have invested in South Africa's platinum industry, the investments are relatively minor given the size of the sector. Furthermore, no Chinese firm figures among the top platinum producers in the world.<sup>17</sup> Therefore, Chinese firms must turn to the market to meet their demand for platinum. As shown in Figure 4, as a result of its substantial imports and limited exports, China is the world's largest net importer of platinum.

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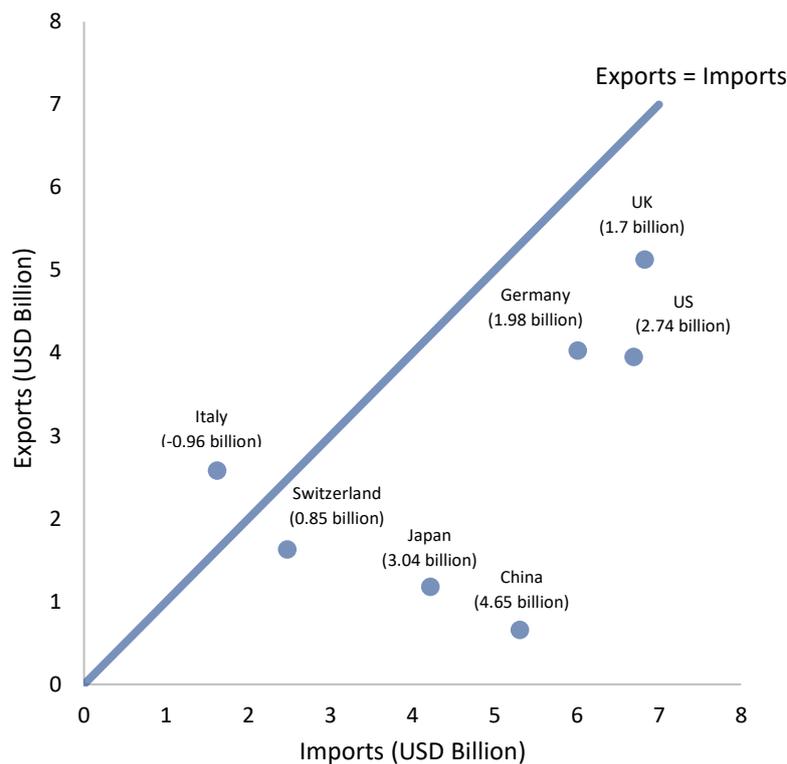
<sup>14</sup> Deng (2020)

<sup>15</sup> Author's Research

<sup>16</sup> Schulte (2020)

<sup>17</sup> Author's Research

Figure 4: Platinum Imports and Exports (Net Imports in Parentheses), 2019<sup>18</sup>



In some cases, Chinese firms view investing in resource deposits as preferable to buying on open markets. Few places better illustrate this strategy than the Democratic Republic of Congo (DRC). In recent years, Chinese investors have acquired a dominant position in the DRC’s copper and cobalt sectors. One of the most high-profile Chinese investments in the DRC took place in 2016, when publicly-traded China Molybdenum bought a controlling stake in the Tenke Fungurume mine (TFM) from US-based Freeport-McMoRan for USD 2.65 billion.<sup>19</sup> TFM is among the DRC’s largest copper and cobalt producers. In 2015, it produced 203,964 tons of copper, and 16,014 tons of cobalt, and was the DRC’s largest taxpayer.<sup>20</sup> Due to TFM’s economic significance, the deal had huge implications for the DRC. And the purchase was only one of many similar deals. The year before, another publicly traded Chinese firm, Zijin, had bought almost half of the Kamao mine from Canada-based Ivanhoe.<sup>21</sup> And, just last year, China Molybdenum bought another Freeport-McMoRan asset in the DRC, the Kisanfu mine, for USD 550 million.<sup>22</sup> Thanks to such investments, Chinese investors now control about 70 percent of the DRC’s mining sector.<sup>23</sup> That said, Chinese firms do not exert the same level of control over mineral

<sup>18</sup> NA (2021C)

<sup>19</sup> Lipton and Searcey (2021)

<sup>20</sup> Author’s Research

<sup>21</sup> Jamasmie (2015)

<sup>22</sup> Ziswa (2020)

<sup>23</sup> Ross and Strohecker (2020)

production in all of Africa. As of 2018, Chinese firms controlled only 6.4 percent of the continent’s mineral production.<sup>24</sup>

Chinese investments in critical minerals differ more markedly from those of Western countries than their respective trading activities. This is the case in terms of both the risk calculus made by Chinese firms before they invest and the tools at their disposal when they decide to go ahead and move money, and it is largely due to the non-market features of the Chinese economy. Broadly speaking, Chinese investors tend to have a different attitude towards risk than their Western counterparts.<sup>25</sup> First, this is largely because Chinese firms—especially the ones large enough to invest hundreds of millions into projects across the world, which are often state-owned—have access to cheap credit.<sup>26</sup> This enables them to take on more short-term risk in anticipation of higher long-term returns.<sup>27</sup> This advantage is particularly salient when it comes to resource investments, as the prices of natural resources can swing dramatically over time. By focusing on the long-term, Chinese investors can secure critical minerals deposits when the prices of the underlying resources are low and maximize long-term returns. Second, because natural resources are instrumental in sustaining China’s economic growth, demand for minerals remains high in China. Therefore, Chinese firms can be more confident than their western counterparts that a domestic market for the critical minerals they secure by investing will continue to exist.

Chinese firms also differ from their Western counterparts in terms of how they carry out investments. In addition to cheap credit, large Chinese firms benefit from other forms support from Beijing. While all national governments engage in some degree of economic statecraft, Beijing has more tools at its disposal than most countries to support its firms abroad. Most notably, it can rely on its two largest policy banks: the China Export-Import Bank (CEIB) and the China Development Bank (CBD). The two banks are major providers of bilateral loans to governments around the world, the majority of which support Chinese commercial interests. For instance, CEIB’s primary mission is “to bolster opportunities for national companies seeking business opportunities overseas”.<sup>28</sup> While CEIB does not differ much from its Western counterparts in terms of its objectives, its size does. In 2016, CEIB had CNY 3.34 trillion (USD 523 billion) in assets.<sup>29</sup> Meanwhile, Washington’s equivalent, the Export-Import Bank of the United States, reported USD 28 billion in total assets in its annual report for the same year. China’s

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<sup>24</sup> Ericsson et al. (2020)

<sup>25</sup> Meunier (2018)

<sup>26</sup> Ibid.

<sup>27</sup> Ibid.

<sup>28</sup> Brautigam (2019)

<sup>29</sup> Jin et al. (2018)

policy banks also support Chinese foreign direct investment activities directly. CBD—China’s largest policy bank, with CNY 14.34 trillion (USD 2.24 trillion) in assets in 2016—began doing so in 2005.<sup>30</sup>

Chinese policy banks’ loans are generally extended with the aim of bolstering Chinese economic interests. In most cases, they finance the purchase of Chinese exports or the development of Chinese-built infrastructure. However, in the case of natural resources extraction, policy banks have extended loans that directly helped Chinese firms secure deposits. These loans sometimes take the form of resources-for-infrastructure (RFI) deals, or the “Angola Model”. The World Bank report titled *Resource Financed Infrastructure: A Discussion on a New Form of Infrastructure Financing* states: “Under an RFI arrangement, a loan for current infrastructure construction is securitized against the net present value [NPV] of a future revenue stream from oil or mineral extraction, adjusted for risk”.<sup>31</sup> Interestingly, while Chinese RFI agreements in Africa are often heavily scrutinized, China’s first experiences with similar financial instruments took place at home. In the 1980s, Japan made substantial infrastructure loans to China, which helped it develop its extractive sector, and the Daqing Oil Field in particular. In fact, the Japanese Ministry of International Trade and Industry explicitly pushed for Japan’s first package of foreign aid loans to China to be mainly used to build railroads and ports to facilitate the export of Chinese oil and coal—to Japan.<sup>32</sup> As the “Angola Model” moniker suggests, in Africa, these types of deals were first used extensively by the Angolan government. Until recently, however, the largest RFI loan ever extended by a Chinese bank signed with the Democratic Republic of Congo in 2007, to the tune of USD 6 billion. It helped Sinohydro and the China Railway Engineering Corporation (CREC)—two state-owned engineering firms—secure contracts for the delivery of billions of dollars in infrastructure projects, along with the rights to massive copper and cobalt deposits to repay the cost of that infrastructure.

More recently, on September 5, 2017, the head of China’s National Development and Reform Commission He Lifeng signed a massive RFI deal—much larger than the DRC’s—with the Guinean government.<sup>33</sup> As part of the barter, three state-owned Chinese firms agreed to provide Guinea with USD 20 billion worth of infrastructure projects over a 20-year period in exchange for various bauxite concessions in the Boffa area, 200 KM northwest of Conakry.<sup>34</sup> The three state-owned Chinese firms involved are the China Power Investment Corporation (or CPIC, formerly the State Power Corporation of China), the Aluminum Corporation of China Limited (or Chalco, a publicly traded company majority-

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<sup>30</sup> Downs (2011)

<sup>31</sup> Halland et al. (2014)

<sup>32</sup> Brautigam (2009)

<sup>33</sup> Author’s Research

<sup>34</sup> Samb (2017)

owned by Aluminum Corporation of China, Chinalco, and one of China's top bauxite processors), and the China Henan International Cooperation Group (or Chico).<sup>35</sup> They have agreed to provide a powerplant, railways, roads, and a port to the Guinean government in exchange for Bauxite licenses.<sup>36</sup> As mentioned above, Guinean exports of bauxite to China grew by a factor of almost 3,000 between 2010 and 2019. The Boffa RFI makes it likely that the trend will persist.

Beyond the economic tools discussed in the previous paragraphs, Beijing has also used security endeavors to support the activities of its resource extraction firms abroad. The Chinese government supplements the use of economic tools through the direct and indirect support of multilateral security activities. Beijing has long prided itself on eschewing open military interventions outside of its own sphere of influence—not only because doing so would hurt its perceived interests but also because it ran counter to its eschewing anti-imperialist ideology.<sup>37</sup> When peacekeeping through the United Nations was still a relatively new phenomenon, the Chinese government opposed it.<sup>38</sup> Over the last few decades, however, that has changed drastically. In November 1995, China only contributed 45 uniformed personnel to peacekeeping operations.<sup>39</sup> By September 2021, that figure had increased to 2,248, making it the largest contributor of all the permanent members of the security council and the 10th largest contributor overall.<sup>40</sup> See Figure 5 for a breakdown of the security council members' respective peacekeeping personnel contributions as of 2021. Initially limited to roles that did not involve fighting, Chinese peacekeepers are now engaged in some dangerous missions that can involve combat. In May 2016, for example, a Chinese soldier was killed in Mali.<sup>41</sup> As Figure 6 demonstrates, Chinese peacekeepers are also deployed to the Democratic Republic of Congo, Western Sahara, South Sudan, and Abyei, a region disputed between Sudan and South Sudan.

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<sup>35</sup> Ibid.

<sup>36</sup> Author's Research

<sup>37</sup> Nantulya (2021)

<sup>38</sup> Grieger (2019)

<sup>39</sup> NA (2021B)

<sup>40</sup> Ibid.

<sup>41</sup> Cabestan (2018)

Figure 5: Contributions of Peacekeeping Personnel by Selected Countries, 2021<sup>42</sup>



The primary aim of these peacekeeping missions, or security engagement in Africa more generally, is not the protection of Chinese investments in critical minerals. Instead, Beijing’s primary aim is to portray itself as a responsible power, with interests that go beyond narrow commercial considerations.<sup>43</sup> And, in doing so, it also provides its troops some much-needed deployment experience.<sup>44</sup> By deploying on missions to countries like the Democratic Republic of the Congo, PLA soldiers learn “how to operate in a complex environment”.<sup>45</sup> Nevertheless, these deployments also help China access and protect critical minerals in Africa. First, becoming a security provider allows Beijing to expand its ties with African countries beyond business.<sup>46</sup> That is especially important because China has repeatedly experienced backlash against its economic projects on the continent.<sup>47</sup> Second, there is the potential for direct or indirect protection of assets and personnel. Research on oil in South Sudan demonstrates how natural resources can be linked to peacekeeping operations in practice: “China National Petroleum Corporation (CNPC) started its business activities in Sudan in 1996 (...) As CNPC expanded its shares in South Sudan’s oil sector, China increased its PKO in the country. As of 2020, about a thousand Chinese personnel are deployed in different regions of South Sudan—including in the north of the country, where strategic oil deposits and pipelines are situated. CNPC has greatly benefited from a 2018 peace deal, gaining access in July to the Munga oil field, which was previously inaccessible due to the country’s civil war.”<sup>48</sup> Physical assets aside, Chinese deployments in Africa make it easier to protect the increasing number of Chinese workers and Chinese companies that operate on the continent. As Chinese companies become increasingly involved in regions affected by instability, “its people are openly calling on their government to protect compatriots caught in crises overseas, including via military means”.<sup>49</sup> While talking to United Nations personnel, Chinese officials

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<sup>42</sup> NA (2021B)

<sup>43</sup> Gowan (2020)

<sup>44</sup> Ibid.

<sup>45</sup> Dyrenforth (2021)

<sup>46</sup> Ibid.

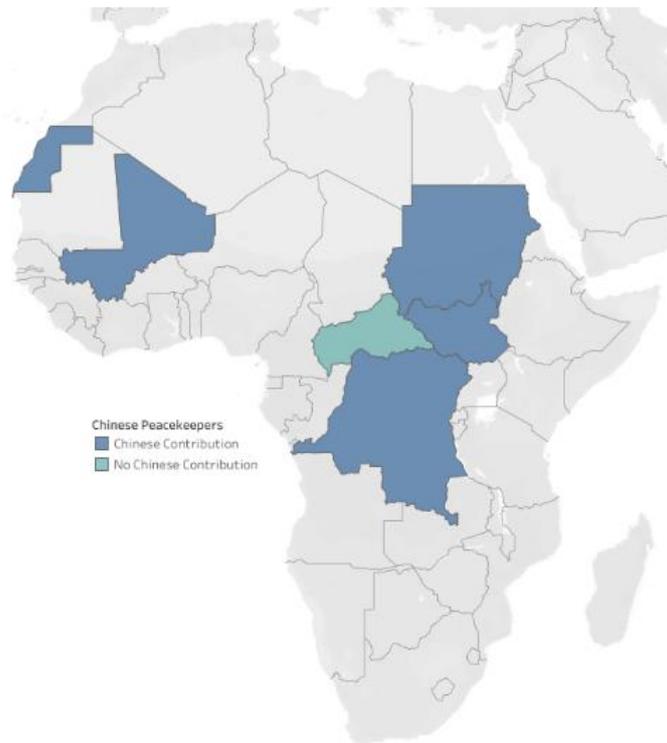
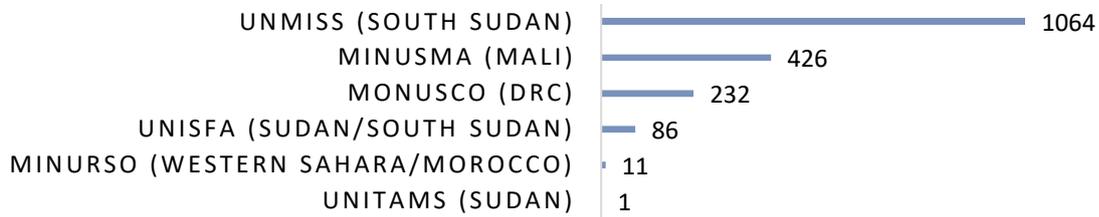
<sup>47</sup> Ibid.

<sup>48</sup> Savkov (2020)

<sup>49</sup> Parello-Plesner and Duchatel (2015)

have openly linked the peacekeeping deployments to “the need to protect the country’s citizens and investments in Africa”.<sup>50</sup>

Figure 6: Chinese Peacekeeping Personnel by UN Peacekeeping Mission in Africa, 2021<sup>51</sup>



Beyond direct deployments via peacekeeping operations, the Chinese government has also made a concerted effort to support regional groupings.<sup>52</sup> The most obvious example of this support is the headquarters of the Economic Community of West African States (ECOWAS) Commission in Abuja, which was funded by Beijing.<sup>53</sup> This fits well with China’s declared goal of “African solutions to African problems” that Chinese leaders constantly repeat.<sup>54</sup> In addition to a new headquarter, Beijing has promised ECOWAS “personnel training, joint exercises and material assistance”.<sup>55</sup> However, it has

<sup>50</sup> Gowan (2020)

<sup>51</sup> NA (2021B)

<sup>52</sup> Parello-Plesner and Duchatel (2015)

<sup>53</sup> Campbell (2018)

<sup>54</sup> Bayes (2020)

<sup>55</sup> Parello-Plesner and Duchatel (2015)

been argued that its security support for ECOWAS remains limited due to the organization's willingness to support democratic movements.<sup>56</sup> In addition to ECOWAS, China has also supported groups like the G5 Sahel through budgetary support.<sup>57</sup> This support for regional groups reinforces China's desire to broaden Sino-African ties beyond government-to-government relations.

### **Implications for the Alliance, Member Countries, and African Countries**

Chinese dominance over critical minerals could have important implications for NATO members. If Chinese firms' control over critical minerals continues to grow, Beijing could use its leverage over Chinese firms to pressure members of the Alliance on economic, political, or security issues. No case better illustrates this point than the 2010 spat between China and Japan, which saw the flow of Chinese rare earths to Japan grind to a halt. It is worth noting that the 17 elements that are considered rare earths are not particularly rare—the least common of them is about 200 times more common than gold.<sup>58</sup> However, they are challenging to separate from other metals in ways that can make them usable in industries.

This episode was rooted in the fact that the trajectories of Chinese and Western policies towards rare earths have followed inverse trajectories in recent decades. The United States—the first country to file a rare earths patent, in 1953—was the world's dominant producer of rare earths until the 1990s.<sup>59</sup> This changed in large part because of regulatory changes that made the production of these minerals exponentially more cumbersome in many industrialized countries.<sup>60</sup> Chinese producers of rare earths were not constrained by the same regulations and thus, over time, firms from the US, France, and Japan, among others, began to transfer their intellectual property in that sector to their Chinese counterparts.<sup>61</sup> Other factors, including supportive industrial policy from Beijing, largely in the form of export tax reimbursements,<sup>62</sup> made the move perfectly logical. The measures implemented by Beijing to make its rare earths industry more competitive were part of a pre-existing trend. In fact, Beijing had established the “National Rare Earth Development and Application Leading Group” as early as

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<sup>56</sup> Bayes (2020)

<sup>57</sup> Ibid.

<sup>58</sup> Haxel et al. (2002)

<sup>59</sup> Hijazi and Kennedy (2020)

<sup>60</sup> Ibid.

<sup>61</sup> Hijazi and Kennedy (2020)

<sup>62</sup> Shen et al. (2020)

1975.<sup>63</sup> These factors resulted in a Chinese near monopoly in the production of rare earths, which are used in various high-tech sectors, including the production of military equipment.

By 2010, China accounted for 97 percent of rare earths production.<sup>64</sup> Against this backdrop, on the morning of September 7th 2010, a Japanese coastguard patrol boat sailing just off the coast of the disputed Senkaku (or Diaoyu) Islands encountered a Chinese-owned trawler fishing the area's teeming marine life. The coastguards ordered the fishermen to stop for an inspection. The trawler's captain refused and tried to flee the scene. A high seas pursuit ensued, with several Japanese coastguard ships taking chase. During the pursuit, the trawler repeatedly hit coastguard vessels. The next day, the Japanese coastguard was finally able to apprehend the trawler and arrest its captain and crew. Unsurprisingly, given the islands' disputed status, a diplomatic incident ensued.

The most unexpected part of the episode came in the days that followed the arrest, when the flow of the previously little-known rare earths from China to Japan grinded to a halt. Beijing denies that the episode was really a trade embargo—it blamed “stricter controls and overzealous Chinese suppliers”.<sup>65</sup> In any case, the export crunch, which lasted for 59 days, led to temporary spikes ranging from 60 to 350 percent in the prices of rare earths.<sup>66</sup> This episode has been presented as an example of Beijing's willingness to flex its economic muscles and disrupt the flow of critical minerals in response to political events. It is particularly relevant today, as the Chinese Ministry of Industry and Information Technology proposed draft controls on the production of and export of rare earths earlier this year.<sup>67</sup> This followed a 2019 commentary piece in the People's Daily (a Chinese Communist Party newspaper) that suggested that the United States could lose access to Chinese rare earths as part of the trade war.<sup>68</sup>

When it comes to African countries, China's quest for natural resources has mixed impacts. On the one hand, Chinese investment and the aid projects that sometimes accompany it provide national governments with welcomed capital and infrastructure development projects. On the other, this often comes at a price. First, there are concerns about the relative environmental impacts of Chinese extractive projects abroad, including because a lack of regulation on the part of Beijing.<sup>69</sup> This is especially due to the “relative lack of transparency in the handling of sensitive environmental

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<sup>63</sup> Ibid.

<sup>64</sup> Gholz (2014)

<sup>65</sup> Jha (2010)

<sup>66</sup> Economy and Levi (2013)

<sup>67</sup> Yu and Sevastopulo (2021)

<sup>68</sup> Ingber (2019)

<sup>69</sup> Al-Aameri et al. (2012)

issues”.<sup>70</sup> Similar concerns have been raised regarding the impacts of Chinese investment projects on governance. Beijing has legislation in place to discourage Chinese firms from paying bribes abroad, which is similar to initiatives implemented in recent decades in the West, such as the United States’ Foreign Corrupt Practices Act.<sup>71</sup> However, it is rarely enforced and largely symbolic.<sup>72</sup> Beyond investment, research finds that Chinese aid projects in Africa worsen corruption levels in the areas where they are implemented.<sup>73</sup> Finally, when it comes to military cooperation, China has been accused of exclusively strengthening incumbent governments, which could weaken democracy on the continent.<sup>74</sup> That said, the evidence on this narrative is mixed. Some research finds that aid from authoritarian donors—including China—has a negative relationship with democratization.<sup>75</sup> Other works that specifically explore Chinese development finance concludes that it not have a discernible impact on authoritarian longevity.<sup>76</sup> Finally, China has also been accused of strengthening local security forces—particularly in authoritarian regimes.<sup>77</sup>

## **Key Results and Recommendations for NATO**

First and foremost, NATO members need to take China’s dominance of critical minerals seriously. Recent focus on the issue by member states is an encouraging sign. But more could be done to increase NATO members’ own critical minerals production, thus reducing China’s market share, and to maintain access to deposits around the world, including in Africa.

In the medium- to long-term, Western countries should aim to increase their own production of critical minerals and to reduce their dependence on any country or region when it comes to sourcing them. Existing plans for production and processing facilities among NATO countries—including the modernization of the United States’ Mountain Pass mine, once the world’s most important source of rare earths—are a good start.<sup>78</sup> In this regard, the Alliance could take a coordinating role. Similarly, “Allied Command Transformation and the Southern Hub should support efforts to understand China’s growing role”.<sup>79</sup>

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<sup>70</sup> Shinn (2016)

<sup>71</sup> Yin et al. (2011)

<sup>72</sup> Bu (2018)

<sup>73</sup> Isaksson and Kotsadam (2018)

<sup>74</sup> Kovrig (2018)

<sup>75</sup> Bermeo (2011)

<sup>76</sup> Bader (2015)

<sup>77</sup> Kovrig (2018)

<sup>78</sup> Green (2019)

<sup>79</sup> Bayes (2020)

When it comes to Africa specifically, China's strategy to secure deposits works because it provides concrete benefits to local governments. In exchange for giving Chinese firms control over critical minerals, money flows into their economy, infrastructure is built, and jobs are created. Instead of trying to beat China at its own game, NATO member states should concentrate on creating tangible benefits for Africans without sacrificing their values—such as a focus on environmental protection and labour standards—for short-term gains. More stringent rules when it comes to environmental protection or labour laws do not have to hamstring Western economic engagement. That is all the truer because China's engagement in African mining has already created significant backlash among local populations, including in the Democratic Republic of Congo.

When it comes to politics, NATO member states would do well to show more interest in African countries' concerns. Too often, African problems are an afterthought. That is misguided. Part of the reason why China is so successful in Africa is because it has made a concerted effort to cultivate relationships for decades.

## References

- Al-Aameri, N., Fu, L., Garcia, N., Mak, R., McGill, C., Reynolds, A., and Vinze, L. (2012). *Environmental impacts of China outward foreign direct investment: Case studies in Latin America, Mongolia, Myanmar, and Zambia*. Texas A&M University. Retrieved from: oaktrust.library.tamu.edu/handle/1969.1/152080
- Bader, J. (2015). China, autocratic patron? An empirical investigation of China as a factor in autocratic survival. *International Studies Quarterly*, 59(1), 23–33.
- Bayes, T. (2020). *China's growing security role in Africa: Suggestions for a European response*. Konrad-Adenauer-Stiftung. Retrieved from: kas.de/en/web/mned-bruessel/single-title/-/content/china-s-growing-security-role-in-africa-suggestions-for-a-european-response
- Bermeo, S. B. (2011). Foreign aid and regime change: A role for donor intent. *World Development*, 39(11), 2021–2031.
- Biol, F. (2021). *The role of critical minerals in clean energy transitions*. International Energy Agency. Retrieved from: [iea.org/reports/the-role-of-critical-minerals-in-clean-energy-transitions](https://www.iea.org/reports/the-role-of-critical-minerals-in-clean-energy-transitions)
- Bobba, S., Carrara, S., Huisman, J., Mathieux, F., and Pavel, C. (2020). *Critical raw materials for strategic technologies and sectors in the EU—A foresight study*. European Commission. Retrieved from: [ec.europa.eu/docsroom/documents/42881](https://ec.europa.eu/docsroom/documents/42881)
- Brautigam, D. (2009) *The dragon's gift: The real story of China in Africa*. Oxford, UK: Oxford University Press.
- Brautigam, D. (2019). Chinese loans and African structural transformation. in Oqubay, A. and Lin, J. Y. (eds.) *China-Africa and an economic transformation*. Oxford, UK: Oxford University Press.
- Bu, Q. (2018). The culture variable vis-à-vis anti-bribery law: A grey area in transnational corporate criminal liability. *European Business Organization Law Review*, 19, 183–213.
- Cabestan, J. P. (2018). *China's evolving role as a U.N. peacekeeper in Mali*. United States Institute for Peace. Retrieved from: [usip.org/publications/2018/09/chinas-evolving-role-un-peacekeeper-mali](https://www.usip.org/publications/2018/09/chinas-evolving-role-un-peacekeeper-mali)
- Campbell, J. (2018). *China to Build New ECOWAS Headquarters in Abuja*. Council on Foreign Relations. Retrieved from: [cfr.org/blog/china-build-new-ecowas-headquarters-abuja](https://www.cfr.org/blog/china-build-new-ecowas-headquarters-abuja)
- Demas, A. (2018). *Interior releases 2018's final list of 35 minerals deemed critical to U.S. national security and the economy*. United States Geological Survey. Retrieved from: [usgs.gov/news/interior-releases-2018-s-final-list-35-minerals-deemed-critical-us-national-security-and](https://www.usgs.gov/news/interior-releases-2018-s-final-list-35-minerals-deemed-critical-us-national-security-and)
- Deng, W. (2020). *Spotlight on China*. World Platinum Investment Council. Retrieved from: [platinuminvestment.com/about/60-seconds-in-platinum/2020/06/24](https://www.platinuminvestment.com/about/60-seconds-in-platinum/2020/06/24)
- Downs, E. (2011). *Inside China Inc: China Development Bank's cross-border energy deals*. Brookings Institution. Retrieved from: [brookings.edu/research/inside-china-inc-china-development-banks-cross-border-energy-deals](https://www.brookings.edu/research/inside-china-inc-china-development-banks-cross-border-energy-deals)

- Dyrenforth, T. (2021). *Beijing's Blue Helmets: What to make of China's role in UN Peacekeeping in Africa*. Modern War Institute. Retrieved from: [mwi.usma.edu/beijings-blue-helmets-what-to-make-of-chinas-role-in-un-peacekeeping-in-africa](http://mwi.usma.edu/beijings-blue-helmets-what-to-make-of-chinas-role-in-un-peacekeeping-in-africa)
- Economy, E. and Levi, M. (2013). *By all means necessary: How China's resource quest is changing the world*. Oxford, UK: Oxford University Press.
- Ericsson, M., Lof, O., and Lof, A. (2020). Chinese control over African and global mining—past, present and future. *Mineral Economics* 33: 153–181.
- Gholz, E. (2014). *Rare earth elements and national security*. Council on Foreign Relations. Retrieved from: [cfr.org/report/rare-earth-elements-and-national-security](http://cfr.org/report/rare-earth-elements-and-national-security)
- Gowan, R. (2020). *China's pragmatic approach to UN peacekeeping*. Brookings Institution. Retrieved from: [brookings.edu/articles/chinas-pragmatic-approach-to-un-peacekeeping](http://brookings.edu/articles/chinas-pragmatic-approach-to-un-peacekeeping)
- Green, J. A. (2019). *The collapse of American rare earth mining—and lessons learned*. Defense News. Retrieved from: [defensenews.com/opinion/commentary/2019/11/12/the-collapse-of-american-rare-earth-mining-and-lessons-learned](http://defensenews.com/opinion/commentary/2019/11/12/the-collapse-of-american-rare-earth-mining-and-lessons-learned)
- Grieger, G. (2019). *China's growing role as a security actor in Africa*. European Parliament. Retrieved from: [europarl.europa.eu/thinktank/en/document.html?reference=EPRS\\_BRI\(2019\)642232](http://europarl.europa.eu/thinktank/en/document.html?reference=EPRS_BRI(2019)642232)
- Halland, H., Beardsworth, J., Land, B., and Schmidt, J. (2014). *Resource financed infrastructure: A discussion on a new form of infrastructure financing*. World Bank. Retrieved from: [elibrary.worldbank.org/doi/abs/10.1596/978-1-4648-0239-3](http://elibrary.worldbank.org/doi/abs/10.1596/978-1-4648-0239-3)
- Haxel, G. B., Hedrick, G. B., and Orris, G. J. (2002). *Rare earth elements—Critical resources for high technology*. United States Geological Survey. Retrieved from: [pubs.usgs.gov/fs/2002/fs087-02](http://pubs.usgs.gov/fs/2002/fs087-02)
- Hijazi, J. and Kennedy, J. (2020). *How the United States handed China its rare-earth monopoly*. Foreign Policy. Retrieved from: [foreignpolicy.com/2020/10/27/how-the-united-states-handed-china-its-rare-earth-monopoly](http://foreignpolicy.com/2020/10/27/how-the-united-states-handed-china-its-rare-earth-monopoly)
- Ingber, S. (2019). *'Plenty of cards to play': Chinese media suggest cutting rare earth exports to U.S.* National Public Radio. Retrieved from: [npr.org/2019/05/29/727850485/plenty-of-cards-to-play-chinese-media-suggest-cutting-rare-earth-exports-to-u-s](http://npr.org/2019/05/29/727850485/plenty-of-cards-to-play-chinese-media-suggest-cutting-rare-earth-exports-to-u-s)
- Isaksson, A. S. and Kotsadam, A. (2018). Chinese aid and local corruption. *Journal of Public Economics*, 159, 146–159.
- Jamasmie, C. (2015). *Congo mulls suspending Ivanhoe's Kamoia stake sale to Zijin*. Mining. Retrieved from: [mining.com/congo-mulls-suspending-ivanhoes-kamoia-stake-sale-to-zijin](http://mining.com/congo-mulls-suspending-ivanhoes-kamoia-stake-sale-to-zijin)
- Jha, S. (2010). *Did China overplay rare earth hand?* The Diplomat. Retrieved from: [thediplomat.com/2010/11/did-china-overplay-rare-earth-hand](http://thediplomat.com/2010/11/did-china-overplay-rare-earth-hand)

- Jika, T. and Patrick, A. (2021). *Platinum mine launched despite controversy over ownership and land*. Sunday Times. Retrieved from: [timeslive.co.za/news/south-africa/2021-05-14-platinum-mine-launched-despite-controversy-over-ownership-and-land/](https://www.timeslive.co.za/news/south-africa/2021-05-14-platinum-mine-launched-despite-controversy-over-ownership-and-land/)
- Jin, J., Ma, X. and Gallagher, K. P. (2018). *China's Global Development Finance: A Guidance Note for Global Development Policy Center Databases*. Boston University Global Development Policy Center. Retrieved from: [bu.edu/gdp/files/2018/07/Coding-Manual-.pdf](https://bu.edu/gdp/files/2018/07/Coding-Manual-.pdf)
- Klochko, K. (2020). *Antimony*. United States Geographical Survey. Retrieved from: [usgs.gov/centers/nmic/antimony-statistics-and-information](https://usgs.gov/centers/nmic/antimony-statistics-and-information)
- Kovrig, M. (2018). *China expands its peace and security footprint in Africa*. International Crisis Group. Retrieved from: [crisisgroup.org/asia/north-east-asia/china/china-expands-its-peace-and-security-footprint-africa](https://www.crisisgroup.org/asia/north-east-asia/china/china-expands-its-peace-and-security-footprint-africa)
- Lipton, E. and Searcey, D. (2021). *How the U.S. lost ground to China in the contest for clean energy*. New York Times. Retrieved from: [nytimes.com/2021/11/21/world/us-china-energy.html](https://www.nytimes.com/2021/11/21/world/us-china-energy.html)
- Liu, Z. (2019). *Oil consumption to peak by 2025*. China Daily. Retrieved from: [chinadaily.com.cn/a/201910/25/WS5db259b1a310cf3e3557394f.html](https://www.chinadaily.com.cn/a/201910/25/WS5db259b1a310cf3e3557394f.html)
- Meunier, S. (2018). Beware of Chinese bearing gifts: Why China's direct investment poses political challenges in Europe and the United States. in Chaisse, J. (eds.) *China's three-prong investment strategy: Bilateral, regional, and global tracks*. Oxford, UK: Oxford University Press.
- Mu, X. (2019). *Chinese troops arrive in South Sudan for peacekeeping mission*. Xinhua. Retrieved from: [xinhuanet.com/english/2019-09/19/c\\_138405581.htm](http://www.xinhuanet.com/english/2019-09/19/c_138405581.htm)
- Mundy, S. (2010). *China enters South African platinum sector*. Financial Times. Retrieved from: [ft.com/content/e40ad752-0a0a-11e0-9bb4-00144feabdc0](https://www.ft.com/content/e40ad752-0a0a-11e0-9bb4-00144feabdc0)
- NA. (2021A). Mining Industry Prospects in Africa. African Development Bank. Retrieved from: [blogs.afdb.org/fr/afdb-championing-inclusive-growth-across-africa/post/mining-industry-prospects-in-africa-10177](https://blogs.afdb.org/fr/afdb-championing-inclusive-growth-across-africa/post/mining-industry-prospects-in-africa-10177)
- NA. (2021B). *Troop and Police Contributors*. United Nations Peacekeeping. Retrieved from: [peacekeeping.un.org/en/troop-and-police-contributors](https://peacekeeping.un.org/en/troop-and-police-contributors)
- NA. (2021C). *China*. Observatory of Economic Complexity Retrieved from: <https://oec.world/en/profile/country/chn>
- Nantulya, P. (2021). *China's blended approach to security in Africa*. Italian Institute for International Political Studies. Retrieved from: [ispionline.it/en/pubblicazione/chinas-blended-approach-security-africa-31216](https://www.ispionline.it/en/pubblicazione/chinas-blended-approach-security-africa-31216)
- Parello-Plesner, J. and Duchatel, M. (2015). *China's strong arm: Protecting citizens and assets abroad*. International Institute for Strategic Studies. Retrieved from: [iiss.org/publications/adelphi/2015/chinas-strong-arm-protecting-citizens-and-assets-abroad](https://www.iiss.org/publications/adelphi/2015/chinas-strong-arm-protecting-citizens-and-assets-abroad)

- Penke, M. (2021). *How China's mines rule the market of critical raw materials*. Deutsche Welle. Retrieved from: [dw.com/en/how-chinas-mines-rule-the-market-of-critical-raw-materials/a-57148375](https://www.dw.com/en/how-chinas-mines-rule-the-market-of-critical-raw-materials/a-57148375)
- Ross, A. and Strohecker, K. (2020). *Congo reviewing \$6 bln mining deal with Chinese investor*. Reuters. Retrieved from: [reuters.com/world/africa/exclusive-congo-reviewing-6-bl-mining-deal-with-chinese-investors-finmin-2021-08-27](https://www.reuters.com/world/africa/exclusive-congo-reviewing-6-bl-mining-deal-with-chinese-investors-finmin-2021-08-27)
- Samb, S. (2017). *China to loan Guinea \$20 billion to secure aluminum ore*. Reuters. Retrieved from: [reuters.com/article/us-guinea-mining-china-idUSKCN1BH1YT](https://www.reuters.com/article/us-guinea-mining-china-idUSKCN1BH1YT)
- Savkov, N. (2020). *China's discourse and interests related to its role in U.N. Peacekeeping*. Jamestown Foundation. Retrieved from: [jamestown.org/program/chinas-discourse-and-interests-related-to-its-role-in-u-n-peacekeeping](https://www.jamestown.org/program/chinas-discourse-and-interests-related-to-its-role-in-u-n-peacekeeping)
- Schulte, R. F. (2020). *Platinum-group metals*. United States Geological Survey. Retrieved from: [usgs.gov/centers/nmic/platinum-group-metals-statistics-and-information](https://www.usgs.gov/centers/nmic/platinum-group-metals-statistics-and-information)
- Shen, Y., Moomy, R., and Eggert, R. G. (2020). China's public policies toward rare earths, 1975–2018. *Mineral Economics*, 33, 127–151.
- Shinn, D. H. (2016). The environmental impact of China's investment in Africa. *Cornell International Law Journal*, 49, 25–67.
- Yin, S., McKenzie, P., and Levison, D. (2011). *China Outlaws Bribery Overseas*. Morrison & Foerster, LLP. Retrieved from: <http://media.mofo.com/files/uploads/Images/110808-China-Outlaws-Bribery-Overseas.pdf>
- Yu, S. and Sevastopulo, D. (2021). *China targets rare earth export curbs to hobble US defence industry*. Financial Times. Retrieved from: [ft.com/content/d3ed83f4-19bc-4d16-b510-415749c032c1](https://www.ft.com/content/d3ed83f4-19bc-4d16-b510-415749c032c1)
- Zhou, X. (2017). *Chinese companies overseas equity oil yield to top 200 mln tonnes in 2018*. Xinhua. Retrieved from: [xinhuanet.com/english/2017-12/20/c\\_136840338.htm](http://www.xinhuanet.com/english/2017-12/20/c_136840338.htm)
- Ziswa, B. (2020). *Cobalt, Copper: China Molybdenum purchases Kisanfu project for US\$550M*. Roskill. Retrieved from: [roskill.com/news/cobalt-copper-china-molybdenum-purchases-kisanfu-project-for-us550m](https://www.roskill.com/news/cobalt-copper-china-molybdenum-purchases-kisanfu-project-for-us550m)