

Risk Report

COBALT MINING IN THE DRC: OUTLOOK AND IMPLICATIONS

STRATEGIC

OPERATIONAL

FINANCIAL

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COBALT MINING IN THE DRC: OUTLOOK AND IMPLICATIONS

RISK REPORT

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List of Abbreviations:

<i>DRC</i>	Democratic Republic of Congo
<i>EV</i>	Electric Vehicle
<i>BRI</i>	Belt and Road Initiative

BOLTS: STRATEGIC, OPERATIONAL, FINANCIAL.

TAGS: DRC, CHINA, COBALT, MINING, COMMODITIES.

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Introduction

The Democratic Republic of Congo (DRC) holds vast reserves of mineral wealth. These resources include the world's largest reserves of cobalt, a metal with applications in many high-technology industries¹. Cobalt often occurs naturally alongside copper and nickel and can be obtained as a by-product of mining these two metals². The demand for cobalt has increased significantly in the past decade, and this trend is projected to continue³. Companies currently require the metal for the production of various high-technology goods, such as electric vehicle (EV) batteries, magnetic steels, and high-speed cutting tools⁴. Due to its numerous current and potential applications, including the production of green technologies, the mineral carries both commercial and strategic importance. A multitude of risks for companies and countries could potentially affect and arise from the international cobalt market as a result of developments in the DRC.

Political and Financial Risks

International enterprises operating in the DRC have faced several types of risks in recent decades. One major risk stems from the political system and leadership within the country. The newly-elected president, Félix Tshisekedi, faces a struggle to consolidate power, fight corruption, and promote development within the DRC. Many claim that the election in late 2018 involved miscounting, and that Tshisekedi may have carried out a deal with the out-going president to secure the election⁵. Major countries have accepted the election's flawed outcome in the name of

¹"Cobalt reserves worldwide as of 2018, by country (in metric tons);" Statista; 9 Aug. 2019; <https://www.statista.com/statistics/264930/global-cobalt-reserves/>. Accessed Aug. 19, 2019.

²Wright, David. "Ores Containing Cobalt." *Cobalt Institute*, <https://www.cobaltinstitute.org/ores-containing-cobalt.html>. Accessed Aug. 19, 2019.

³"Cobalt demand worldwide from 2010 to 2025 (in 1,000 tons);" Statista; 2 Aug. 2018; <https://www.statista.com/statistics/875808/cobalt-demand-worldwide/>. Accessed August 19, 2019.

⁴Conca, James. "Blood Batteries- Cobalt and the Congo." *Forbes*, 26 Sep. 2018, <https://www.forbes.com/sites/jamesconca/2018/09/26/blood-batteries-cobalt-and-the-congo/#1422f32ccc6e>. Accessed 19 Aug. 2019.

⁵"How do you reform a country where gunmen torch Ebola clinics?" *Economist*, 3 Aug. 2019. <https://www.economist.com/middle-east-and-africa/2019/08/03/how-do-you-reform-a-country-where-gunmen-torch-ebola-clinics>. Accessed 19 Aug. 2019.

stability⁶. Joseph Kabila, Tshisekedi's predecessor, held office until January 2019, beyond the constitution's two-term limit⁷. Kabila still exerts significant influence over the government. For example, the coalition that backed Kabila during his presidency still controls roughly two-thirds of the national assembly⁵. Ongoing power struggles between Tshisekedi and Kabila's allies will shape the domestic political system moving forward and may contribute to political instability.

The DRC has demonstrated varying degrees of severity in its relations with international mining entities over time. First, international mining companies in the DRC face unpredictable tax burdens⁸. The DRC has increased the tax burden for mining companies multiple times in the past twelve months⁸. As of June 2018, the royalty rate on cobalt was 2%. Since then, the tax rate on mining cobalt increased to 3.5% for a time and currently rests at 10%. On December 3, 2018 the Kabila administration declared cobalt a "strategic" resource and increased the royalty to 10%. International mining companies such as China Molybdenum and Glencore face increased costs as a result of this change to the DRC's mining code⁹. Second, while the DRC has not completely appropriated any foreign mining assets, the country's state mining company, Gécamines, has pushed for higher stakes in many foreign mining operations¹⁰. The state miner currently holds a minority stake in the majority of foreign operations in the country¹¹. During 2018, Gécamines successfully negotiated

⁶Ibrahim, Mo and Doss, Alan. "Congo's election: a defeat for democracy, a disaster for the people." *The Guardian*, 9 Feb. 2019, <https://www.theguardian.com/global-development/2019/feb/09/democratic-republic-of-the-congo-election-a-defeat-for-democracy-disaster-for-people-mo-ibrahim>. Accessed 19 Aug. 2019.

⁷Kuo, Frederick. "China's cobalt conundrum in Congo." *Lowy Institute*, 12 Feb. 2018, <https://www.lowyinstitute.org/the-interpreter/china-s-cobalt-conundrum-congo>. Accessed 19 Aug. 2019.

⁸"Congo declares cobalt 'strategic,' nearly tripling royalty rate." *Reuters*, 3 Dec. 2018, <https://www.reuters.com/article/us-congo-cobalt/congo-declares-cobalt-strategic-nearly-tripling-royalty-rate-idUSKBN1O220D>. Accessed 19 Aug. 2019.

⁹Sanderson, Henry. "Congo declares battery metal cobalt 'strategic' in move that triples royalties." *Financial Times*, 3 Dec. 2018, <https://www.ft.com/content/382c3d24-f726-11e8-8b7c-6fa24bd5409c>. Accessed 19 Aug. 2019.

¹⁰Clowes, William. "Congo Miner Renegotiates ERG Joint Venture to Boost Revenue." *Bloomberg*, 10 Dec. 2018, <https://www.bloomberg.com/news/articles/2018-12-10/congo-state-miner-renegotiates-erg-joint-venture-to-boost-income>. Accessed 19 Aug. 2019.

¹¹Sanderson, Henry. "DRC's Gécamines says foreign mining companies to blame for country's lost wealth." *Financial Times*, 28 Nov. 2018, <https://www.ft.com/content/85dd834e-f324-11e8-ae55-df4bf40f9d0d>. Accessed 19 Aug. 2019.

higher stakes in operations run by Glencore and Eurasian Resources Group subsidiary Boss Mining SPRL¹⁰. These two varieties of political risks will continue to affect companies in the years ahead.

Lastly, firms mining in the DRC face operational risks that will increase their financial burdens. Foreign firms must often cover costs related to their own mining operations. Mining developments in the Katanga region face power shortages, and power demand will only increase as output increases in the years ahead¹². In order to provide sufficient power, foreign companies have opted to invest in projects to provide their own power. In 2014, Glencore began a \$360 million project to repair and improve a major hydroelectric plant. Chinese firms have also stepped in to carry out or assist with numerous hydropower projects over the past few years¹³. Foreign mining companies will continue to face this operational risk over the next decade and will need to plan for related financial costs.

Security Risks

Companies operating in the DRC also face security risks that arise because of overlapping and mutually reinforcing factors. Security risks exist both at the national DRC level and at the provincial level within Katanga (In 2015 the province was divided into four provinces, but the author will follow subsequent convention and refer to them collectively as “Katanga”), the southeastern state that produces the vast majority of the DRC’s copper and cobalt¹⁴. At the national level, the DRC faces ongoing violence and an Ebola crisis⁵. Much of the violence occurs in the eastern provinces of the DRC, which were the most heavily affected regions during the country’s wars in 1996-1997

¹²Ross, Aaron. “CORRECTED- Glencore invests in Congo hydropower as solution to blackouts.” *Reuters*, 27 Nov. 2014, <https://www.reuters.com/article/congodemocratic-mining-power/corrected-glencore-invests-in-congo-hydropower-as-solution-to-blackouts-idUSL6N0TB48120141127>. Accessed 19 Aug. 2019.

¹³Clowes, William. “PowerChina to Build Two Hydropower Plants in Congo, Partners Say.” *Bloomberg*, 27 June 2019, <https://www.bloomberg.com/news/articles/2019-06-27/powerchina-to-build-two-hydropower-plants-in-congo-partners-say>. Accessed 19 Aug. 2019.

¹⁴“Katanga: Tensions in DRC’s Mineral Heartland.” *Crisis Group*, 3 Aug. 2016, <https://www.crisisgroup.org/africa/central-africa/democratic-republic-congo/katanga-tensions-drcs-mineral-heartland>. Accessed 19 Aug. 2019.

and in 1998-2003¹⁵. In the past two years, the violence has centered on the Ituri, Kasai, and Kivu provinces¹⁶. Conflicts between the Hema and Lendu ethnic groups of the Ituri province have existed for decades and continue today¹⁷. The violence has led to roughly 4.5 million internally displaced individuals within the country¹⁶. Over 130 armed groups exist in the eastern DRC, and many of these groups aim to control mining operations and the profits that they bring¹⁵.

The second major risk facing the DRC at the national level is the Ebola crisis. The virus has claimed the lives of over 1,600 individuals since this iteration of the crisis began in August 2018¹⁸. The highest number of Ebola cases have occurred in the North Kivu province, but roughly 10% of cases have occurred in Ituri province¹⁹. Ethnic conflict in Ituri province has resulted in the displacement of 300,000 people. The migration of these refugees complicates the problem of containing the Ebola crisis, as undiagnosed individuals may carry Ebola to previously unaffected areas. These movements of refugees within the DRC and towards other neighboring countries may have contributed to the spread of Ebola to Uganda in early June.

The security risks facing the mineral-rich Katanga province mirror those faced in other regions to some extent. While Ebola has not yet been reported in Katanga, other security risks remain. Internal migrants from other provinces have moved to Katanga, and conflict may arise between these newly-arrived individuals and people indigenous to the area¹⁴. The area also holds a significant number of independent armed groups¹⁴. For example, the Bakata Katanga group identifies strongly with the province, and seeks to end the unfair relationship between the province and the central government. This group has resorted to violence in the past. Many of the armed groups in Katanga

¹⁵Ismail, Sumayya. "UPDATED: Four humanitarian challenges for Congo's new leader." *The New Humanitarian*, 10 Jan. 2019, <https://www.thenewhumanitarian.org/analysis/2019/1/10/updated-four-humanitarian-challenges-congo-s-new-leader>. Accessed 19 Aug. 2019.

¹⁶"Violence in the Democratic Republic of Congo." Council on Foreign Relations; Global Conflict Tracker, 15 Aug. 2019, <https://www.cfr.org/interactive/global-conflict-tracker/conflict/violence-democratic-republic-congo>. Accessed 19 Aug. 2019.

¹⁷"Killings in Congo's north-east spark fears of a return to war." *Economist*, 13 July 2019, <https://www.economist.com/middle-east-and-africa/2019/07/13/killings-in-congos-north-east-spark-fears-of-a-return-to-war>. Accessed 19 Aug. 2019.

¹⁸"Ebola crisis: Second death confirmed in DR Congo border city of Goma." *BBC*, 31 Jul. 2019, <https://www.bbc.com/news/world-africa-49172259>. Accessed 19 Aug. 2019.

¹⁹Cumming-Bruce, Nick. "Hundreds of Thousands Flee Congo Violence, in Region Afflicted by Ebola." *New York Times*, 18 Jun. 2019, <https://www.nytimes.com/2019/06/18/world/africa/congo-ethnic-violence-ebola.html>. Accessed 19 Aug. 2019.

have ties to elites within the region. Elites and some members of the general population in Katanga resent the fiscal burdens imposed upon them by the central government and lack of proper funds to run the provincial administration. During the war in 1997-2003, citizens from the province carried out an unsuccessful secessionist initiative. Moving forward, companies should be mindful of the security risks of disease, violence, and separatist initiatives.

International Supply and Demand

Currently accessible cobalt reserves are concentrated in a small number of countries. With 3.4 million metric tons, the DRC holds roughly half of global cobalt reserves^{1, 20}. The DRC currently accounts for 2/3 of world cobalt production²¹. As a comparison, in million metric tons of reserves, Australia holds 1.2 million, China holds 80,000, and the US holds only 38,000. The DRC exported \$1.9 billion of the mineral in 2017, and 99.6% of this cobalt was exported to China²². Current projections indicate that cobalt demand will increase dramatically within the next decade³. If current trends continue, companies that use cobalt may face a cobalt shortage within the next six years²¹. China's ties to the mining industry in the DRC position it well to face increased demands in the future.

However, these trends towards an impending cobalt shortage rest on a number of assumptions that may be challenged in the years ahead. Rechargeable batteries for EVs account for the highest percentage of cobalt demand²³. Projections of increased demand rely on the increased demand for cobalt as an input for EVs, which currently require cobalt as an essential input for batteries. Some EV producers, notably Tesla, have begun to research possible battery alternatives that do not

²⁰"Mining the future: How China is set to dominate the next industrial revolution." *Foreign Policy*, 1 May 2019, <https://foreignpolicy.com/2019/05/01/mining-the-future-china-critical-minerals-metals/>. Accessed 19 Aug. 2019.

²¹Montgomery, Gavin. "Can Metals Supply Keep Up With Electric Vehicle Demand?" *Forbes*, 24 Jul. 2019, <https://www.forbes.com/sites/woodmackenzie/2019/07/24/can-metals-supply-keep-up-with-electric-vehicle-demand/#1ee4d14f6c9b>. Accessed 19 Aug. 2019.

²²"Where does the Democratic Republic of Congo export Cobalt to?" *Observatory of Economic Complexity*, https://oec.world/en/visualize/tree_map/hs92/export/cod/show/8105/2017/. Accessed 19 Aug. 2019.

²³"Cobalt Statistics and Information." *US Geological Survey*, <https://www.usgs.gov/centers/nmic/cobalt-statistics-and-information>. Accessed 19 Aug. 2019.

require cobalt²⁴. Secondly, alternative sources of cobalt may be developed. The ocean floor in the Pacific contains significant reserves of cobalt, but mining of these reserves has not yet begun due to the costs involved^{25, 26}. If the demand for cobalt continues to increase, countries may encourage the development of these reserves to secure access to the resource. These new ocean-based sources for the mineral would limit the current dominance of a handful of cobalt-producing countries and contribute to resource security for the countries that develop the new reserves.

Chinese Initiatives in the DRC

Some risks may arise from the ties that Chinese public and private actors have fostered with the DRC over the past two decades. Often, the initiatives that they have pursued in the DRC have been driven by the search for international supplies of resources²⁷. Over the past decade, Beijing's goals to promote sustainable development at home have given impetus to a subset of such initiatives. In 2001, Beijing promulgated the Going Global Strategy, which called upon Chinese companies to seek out and develop foreign resources and to gain a competitive edge from operating in the international sphere. One iteration of the actions tied to this strategic objective includes the \$6 billion Sicomines Agreement of 2007 signed with the DRC. As a result of this agreement, China contributed \$800 million to improve infrastructure in the DRC and carry out mineral exploration²⁸.²⁹ Over time, profits from the production of copper and cobalt at Sicomines will help repay the associated debts accrued by the DRC. The agreement paved the way for continuing Chinese

²⁴Chen, Angela. "Elon Musk wants cobalt out of his batteries- here's why that's a challenge." *The Verge*, 21 Jun. 2018, <https://www.theverge.com/2018/6/21/17488626/elon-musk-cobalt-electric-vehicle-battery-science>. Accessed 19 Aug. 2019.

²⁵"Can the world produce enough cobalt for electric vehicles?" *Economist*, 1 Dec. 2018, <https://www.economist.com/business/2018/12/01/can-the-world-produce-enough-cobalt-for-electric-vehicles>. Accessed 19 Aug. 2019.

²⁶Lewis, Barbara. "China plumbs ocean depths to extend its cobalt lead." *Reuters*, 14 Nov. 2018, <https://www.reuters.com/article/china-mining-cobalt/china-plumbs-ocean-depths-to-extend-its-cobalt-lead-idUSL8N1XN6JD>. Accessed 19 Aug. 2019.

²⁷Jansson, Johanna. "3Qi: China's Landmark Sicomines Deal in the DR Congo." *The China Africa Project*, <https://chinaafricaproject.com/drc-china-sicomines-mining-congo/>. Accessed 19 Aug. 2019.

²⁸Ross, Aaron. "China's 'infrastructure for minerals' deal gets reality-check in Congo." *Reuters*, 9 Jul. 2015, <https://www.reuters.com/article/us-congodemocratic-mining-china-insight-idUSKCN0P11UB20150709>. Accessed 19 Aug. 2019.

²⁹Cruvinel, Felipe. "China's African Knot." *The Diplomat*, 17 Aug. 2017, <https://thediplomat.com/2017/08/chinas-african-knot/>. Accessed 19 Aug. 2019.

investment in the years to come. More recently, over 30 Chinese companies formed an association in 2018 with the blessings of the DRC and Chinese governments³⁰. The association, dubbed the “Union of Mining Companies with Chinese Capital,” will further promote cooperation between the two countries in the mining industry.

Over the past decade, Beijing has shifted towards the promotion of policies and initiatives that foster environmental sustainability. For instance, since 2013 the central government has aimed to reduce PM 2.5 emissions by switching from coal-based to natural gas or electricity-based heating³¹. China’s 13th five-year plan, which runs from 2016 to 2020, emphasizes the importance of the nonferrous metals industry²⁰. Some of these nonferrous metals, such as cobalt, are essential inputs for new sustainable technologies. As a result of this plan, the Ministry of Industry and Information Technology has since 2016 promoted international investments in nonferrous metal mining. Through these increased investments in mining projects for various metals, including cobalt, China will be better prepared to face future demand for resources as it develops and transitions towards an emphasis on sustainability.

Due to these agreements and stated development goals, private and publicly-driven Chinese investments in the DRC’s copper and cobalt mines have increased dramatically. Chinese firms and SOEs currently possess equity shares in most of the cobalt mines in the country, with ties to more than half of the DRC’s cobalt production²⁰. For example, two Chinese firms, Sinohydro Corp and China Railway Group Limited, together possess a 68% share of the Sicomin copper and cobalt mine³². China Molybdenum offers another illustrative example: the firm currently possesses an 80% stake in the Tenke Fungurume mine in southeastern DRC³³. China Molybdenum initially acquired a

³⁰Clowes, William. “China Marks Cobalt, Copper Ascendancy in Congo With New Group.” *Bloomberg*, 18 Jun. 2018, <https://www.bloomberg.com/news/articles/2018-06-18/china-marks-cobalt-copper-ascendancy-in-congo-with-new-group>. Accessed 19 Aug. 2019.

³¹Huang, Yanzhong. “Why China’s Good Environmental Policies Have Gone Wrong.” *The New York Times*, 14 Jan. 2018, <https://www.nytimes.com/2018/01/14/opinion/china-environmental-policies-wrong.html>. Accessed 19 Aug. 2019.

³²Ross, Aaron. “China’s ‘infrastructure for minerals’ deal gets reality check in Congo.” *Reuters*, 9 Jul. 2015, <https://www.reuters.com/article/us-congodemocratic-mining-china-insight-idUSKCN0P11UB20150709>. Accessed 19 Aug. 2019.

³³Sanderson, Henry. “China Moly pays \$1.1bn to strengthen control over giant Congo cobalt mine.” *Financial Times*, 18 Jan. 2019, <https://www.ft.com/content/68dcba4c-1b30-11e9-9e64-d150b3105d21>. Accessed 19 Aug. 2019.

54% stake in the Tenke Fungurume mine from the US company Freeport-McMoran in 2016³⁴. These statistics and examples demonstrate the potential for the strong influence of Chinese actors over a strategically important resource through extensive ties to the DRC cobalt industry.

Potential Implications of Chinese Initiatives

Chinese investments in the DRC cobalt and copper mining industries carry the potential for various strategic, economic, and political risks. China's ties to the DRC cobalt industry give the country significant influence over the global cobalt industry, which is a strategically important input for many new technologies. As demand for cobalt increases, China may be better positioned than other major countries to acquire it. The predominance of DRC cobalt output produces a bottleneck for production of the strategic resource and may limit the availability of the resource for other countries in the years ahead. However, the bottleneck runs both ways: some Chinese mining companies fear that they have overinvested in a single cobalt-producing nation, and that they should have diversified production in other countries³⁵. Thus, this bottleneck has both strategic and economic implications.

The Chinese mining initiatives in the DRC's cobalt industry may cause economic risks. Past Chinese investments in other countries have led to the risk of unsustainable debt burdens and appropriations. Debt burdens associated with Chinese investments led analysts to label China's actions "Debt trap diplomacy³⁶." As a part of the BRI project, China helped Sri Lanka build and finance a port at Hambantota, which failed to attract much shipping after completion³⁷. As the debt

³⁴Pinto, Anet Josline and Thomas, Denny. "Freeport to sell prized Tenke copper mine to China Moly for \$2.65 billion." *Reuters*, 9 May 2016, <https://www.reuters.com/article/us-freeport-mcmoran-tenke-cmoc/freeport-to-sell-prized-tenke-copper-mine-to-china-moly-for-2-65-billion-idUSKCN0Y015U>. Accessed 19 Aug. 2019.

³⁵"China urged to ease reliance on DRC for cobalt." *Reuters*, 7 Nov. 2017, <https://www.reuters.com/article/us-china-metals-electric-vehicles/china-urged-to-ease-reliance-on-drc-for-cobalt-idUSKBN1D70GT>. Accessed 19 Aug. 2019.

³⁶Paduano, Stephen. "China's Investments in Rwanda Raise Familiar Questions About Debt." *The Atlantic*, 3 Aug. 2019, <https://www.theatlantic.com/international/archive/2019/08/belt-and-road-rwanda/594928/>. Accessed 19 Aug. 2019.

³⁷Abi-Habib, Maria. "How China Got Sri Lanka to Cough Up a Port." *The New York Times*, 25 June 2018, <https://www.nytimes.com/2018/06/25/world/asia/china-sri-lanka-port.html>. Accessed 19 Aug. 2019.

burden for repaying the loans for the port became too difficult to repay, a Chinese state-owned enterprise appropriated the port in 2017³⁸. One study from 2018 estimated that loans from China's Belt and Road Initiative have led to a significant risk of debt distress in eight countries, such as Djibouti, Laos, and Mongolia³⁹. Many countries in Africa, such as the Zambia, Djibouti, Kenya, Angola, and Ghana, all have potentially unsustainable debt burdens to China³⁶. A decrease in commodity prices or a general economic downturn in China could pose a significant risk for the DRC. Such events could make further repayment of the DRC's debt repayment prohibitively difficult.

Lastly, the Chinese cobalt mining initiatives may indirectly lead to risks of political instability in the DRC. If debt repayment becomes difficult and the government imposes strict austerity measures, the potential associated job losses and wage cuts could lead to unrest. Past BRI investments in other countries have attracted criticism due to the lack of transparency in the selection process for Chinese investors and because of the opportunity for corruption⁴⁰. Leaders and elites of BRI countries may obtain financial kickbacks from the investments at the detriment of the general population. Such fears have contributed to political leadership changes in some countries, such as Malaysia in 2018⁴⁰. Similarly, a report by Congo Research Group in 2017 found that Kabila and his family control a significant share of the DRC's mining⁷. While Kabila no longer serves as president, he still exerts significant power. If Tshisekedi or others investigate Kabila's mining holdings for corruption, the ensuing divisions among the leadership may lead to substantial conflict within the government. On the other hand, if Tshisekedi fails to carry out related corruption investigations, unrest in the general populace may arise.

³⁸"Sri Lanka signs deal on Hambantota port with China." *BBC*, 29 July 2017, <https://www.bbc.com/news/world-asia-40761732>. Accessed 19 Aug. 2019.

³⁹Rolland, Nadège. "A Concise Guide to the Belt and Road Initiative." *The National Bureau of Asian Research*, 11 Apr. 2019, <https://www.nbr.org/publication/a-guide-to-the-belt-and-road-initiative/>. Accessed 19 Aug. 2019.

⁴⁰Balding, Christopher. "Why Democracies Are Turning Against Belt and Road." *Foreign Affairs*, 24 Oct. 2018, <https://www.foreignaffairs.com/articles/china/2018-10-24/why-democracies-are-turning-against-belt-and-road>. Accessed 19 Aug. 2019.

Strategic Summary

Risks:

- All international companies operating in the DRC face risks associated with variable tax codes, poor infrastructure and power sources, disease, and violence.
- Countries other than China face strategic risks, as China's influence over the DRC's comparatively vast cobalt supplies may provide it with a stranglehold over global supplies.

Opportunities :

- The DRC's reserves could continue to shape international cobalt markets in the years ahead, and companies able to bear the costs associated with operating in the country stand to make substantial gains.
- Countries that foresee dramatic increases in demand could move to develop other sources, such as those on the Pacific seabed.

Tactical Breakdown

Strategic :

- The strategic importance of cobalt could increase dramatically in the years ahead, and the countries that control its supply will operate with a significant advantage.
- China's influence over the DRC cobalt market may prove a liability for the US if demand increases and tensions between the countries escalate.

Operational :

- Companies operating in the country face the risk of power shortages and may be required to cover costs to provide their own supply.
- Companies operating in the country face the interrelated risks of Ebola and violence, which could potentially arise in the resource-rich Katanga region.

Financial:

- The DRC government has increased taxes on cobalt mining dramatically over the past few years and may increase them further in the years ahead.
- The DRC government, working through its state-owned mining company Gecamines, has pushed for higher stakes in many foreign mining operations.

- If commodity prices fall for a sustained period, the DRC may find foreign debt repayments prohibitively difficult.

Conclusion

International mining companies operating in the DRC face numerous overlapping and interdependent risks. The government may unexpectedly increase tax burdens or increase its hold on company shares through the state-owned mining company Gecamines. Such changes contributed to Glencore's announcement in early August of plans to cease operations at the DRC's (and the world's) largest cobalt mine, Mutanda, by the end of the year⁴¹. Separatist groups and Kabila's leadership faction carry the risk of political conflict or upheaval. An Ebola crisis defies containment efforts in the DRC's northeast. Fears of the Ebola virus and ethnic violence have contributed to the displacement of millions of individuals. Citizens in Katanga province have a history of pushing for secession from the country as a whole. Lastly, Chinese initiatives to invest in the DRC's cobalt industry give Chinese actors significant clout in the DRC and influence over the strategically important cobalt industry in general. If current projections of rapidly increasing cobalt demand over the next decade prove correct, other countries and companies will need to rapidly seek out and develop other sources of cobalt, such as ocean-floor reserves in the Pacific.

⁴¹Hume, Neil and Sanderson, Henry. "Glencore to halt production at world's largest cobalt mine." *Financial Times*, 6 Aug. 2019, <https://www.ft.com/content/8cd1fd7a-b86c-11e9-96bd-8e884d3ea203>. Accessed 19 Aug. 2019.

Figures



Figure 1: Map of Katanga (2016). (Image Credit: Crisis Group).

Cobalt Means Congo

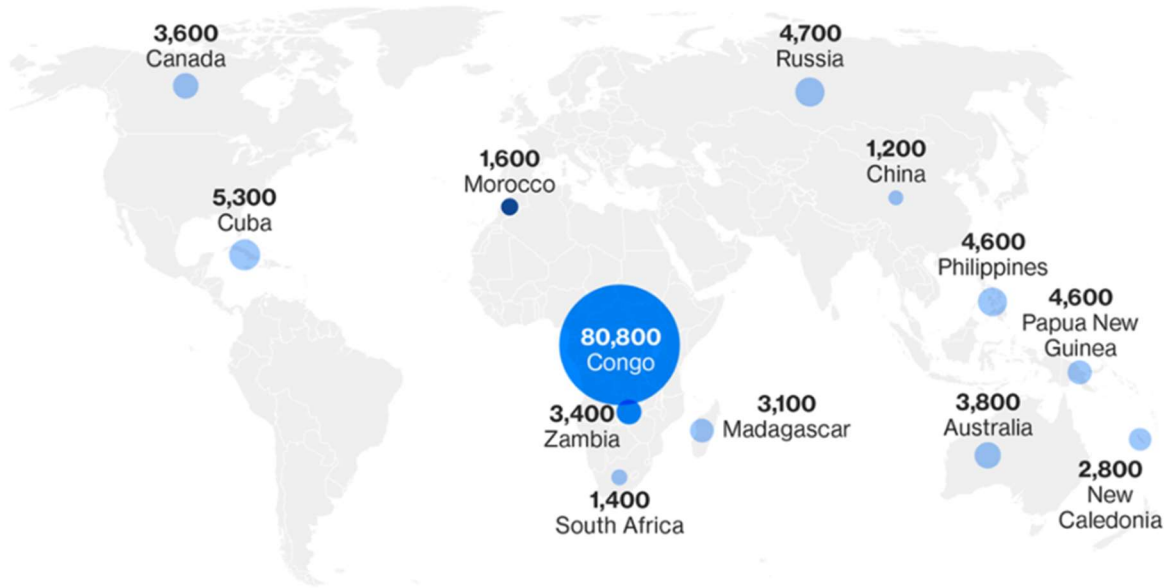
Last year around 67 percent of the global cobalt supply was mined in the Congo

Tons of mined cobalt

● Nickel by-product

● Copper by-product

● Primary cobalt source



Source: Darton Commodities Ltd

Bloomberg

Figure 2: Cobalt Means Congo (2018). (Image Credit: *Bloomberg*).

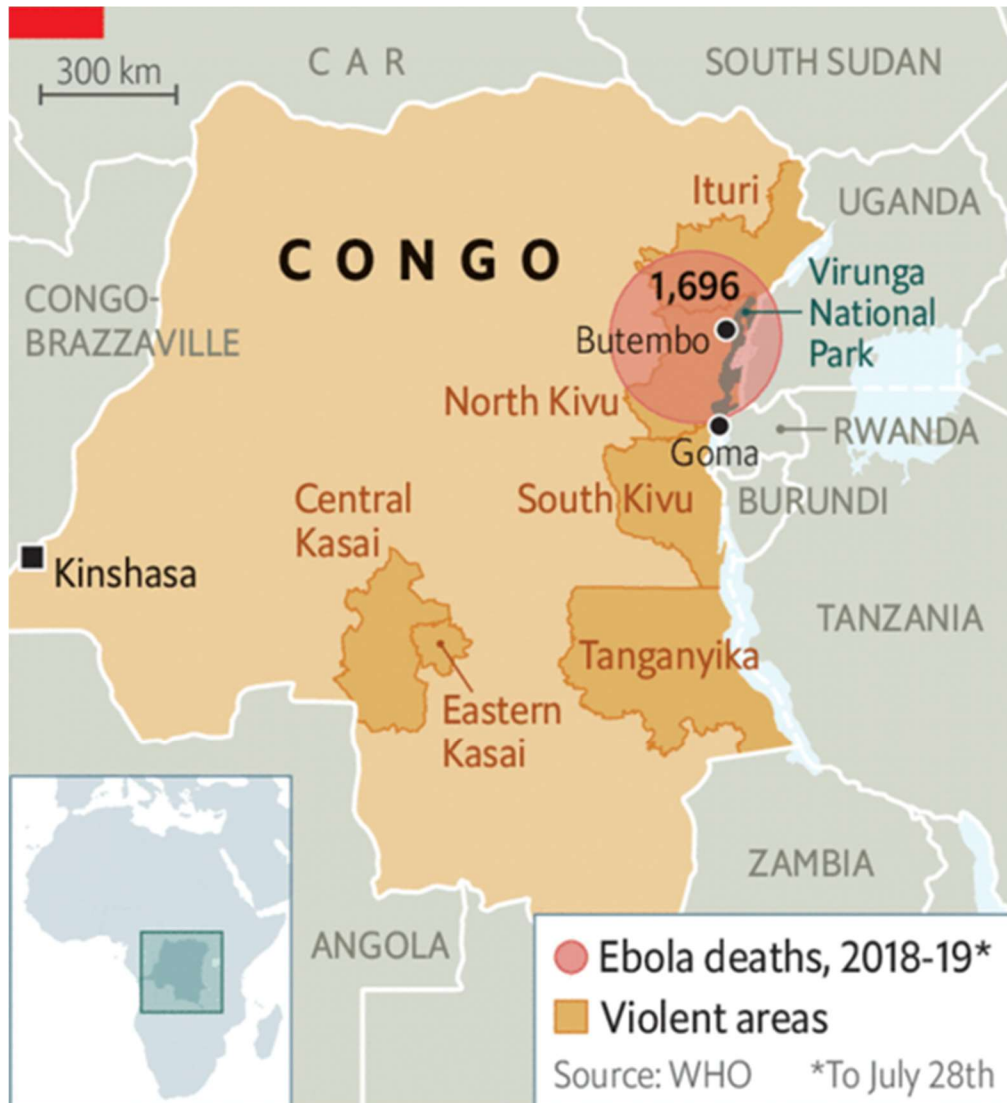


Figure 3: Ebola and Violence in the DRC (2019). (Image Credit: *Economist*).



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