



CONFLICT MINERALS

Peace and Security in Democratic Republic of the Congo Have Not Improved with SEC Disclosure Rule

Report to Congressional Committees

October 2024

GAO-25-107018

United States Government Accountability Office

Accessible Version

GAO Highlights

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Highlights of [GAO-25-107018](#), a report to congressional committees

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Why GAO Did This Study

The Dodd-Frank Wall Street Reform and Consumer Protection Act, enacted in 2010, noted that the trade of conflict minerals was helping to finance violent conflict in the DRC. Section 1502 of the act required SEC to promulgate regulations containing disclosure and reporting requirements for companies that use these minerals. SEC finalized this rule in 2012, requiring companies to begin annually filing disclosure reports in 2014. According to SEC, in requiring it to promulgate the rule, Congress sought to promote peace and security in the DRC by reducing non-state armed groups' revenue from the mining and trade of conflict minerals.

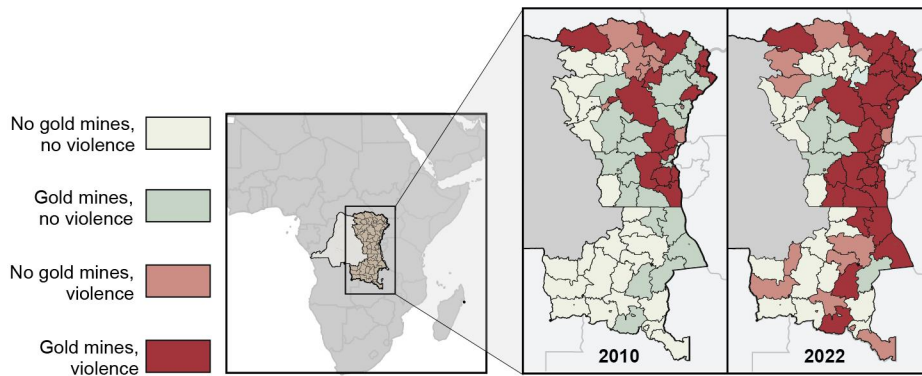
The act includes a provision for GAO to assess, among other things, the SEC rule's effectiveness in promoting peace and security in the DRC and adjoining countries. This report examines, among other things, (1) what can be determined about the SEC disclosure rule's effectiveness in promoting peace and security in the DRC and adjoining countries and (2) how companies responded to the rule when filing with SEC in 2023. GAO conducted statistical analyses of the SEC rule's effect on violence in the DRC and adjoining countries. GAO also analyzed a generalizable sample of 100 company filings from 2023. GAO interviewed DRC and U.S. government officials; UN officials; experts from nongovernmental and academic institutions; and industry stakeholders and representatives of companies that filed disclosures.

SEC disagreed with some of GAO's findings and raised concerns about some of its methodology and analyses. In response, GAO made certain adjustments that did not materially affect its findings.

What GAO Found

The U.S. Securities and Exchange Commission's (SEC) 2012 conflict minerals disclosure rule has not reduced violence in the Democratic Republic of the Congo (DRC) and has likely had no effect in adjoining countries. The rule requires certain companies to file reports on their use of tantalum, tin, tungsten, and gold, which are mined in the DRC. GAO found no empirical evidence that the rule has decreased the occurrence or level of violence in the eastern DRC, where many mines and armed groups are located. GAO also found the rule was associated with a spread of violence, particularly around informal, small-scale gold mining sites. This may be partly because armed groups have increasingly fought for control of gold mines since gold is more portable and less traceable than the other three minerals. Further, GAO found that the number of violent events in the adjoining countries did not change in response to the SEC rule.

Locations of Violent Events and Informal Gold Mining Sites in Eastern Democratic Republic of the Congo, 2010 and 2022



Sources: GAO, based on United Nations map and analysis of data from the Armed Conflict Location & Event Data and the International Peace Information Service. | GAO-25-107018

The SEC disclosure rule has encouraged companies to improve reporting of conflict minerals' sources by tracking the minerals' chain of custody, according to experts and industry stakeholders. In addition, though many factors contribute to conflict, stakeholders and experts said the rule has raised international awareness about the risks that minerals will benefit armed groups and thus support violence. Yet efforts to trace the origin of conflict minerals, especially gold, face obstacles such as smuggling.

The number of companies filing conflict minerals disclosures in 2023 increased for the first time since 2014, but many companies continued to report being unable to determine their minerals' origins. Companies comply with the SEC rule by submitting a disclosure describing their "reasonable country-of-origin inquiries" about the origin of conflict minerals in their products. In certain circumstances, companies must then conduct due diligence to determine their conflict minerals' source and custody. In 2023, an estimated 63 percent of companies made preliminary determinations, based on their inquiries, about their conflict minerals' origins. Of those that then performed due diligence, an estimated 62 percent reported being unable to determine the minerals' source.

Contents

GAO Highlights	ii
Why GAO Did This Study	ii
What GAO Found	ii

Letter	1
Background	3
SEC Disclosure Rule Generally Has Not Reduced Violence in Eastern DRC or Adjoining Countries but Has Encouraged More Transparent Sourcing	13
More Companies Filed Disclosures in 2023, but Many Were Unable to Determine Conflict Minerals' Origins	32
Sexual Violence Persists in DRC and Adjoining Countries, and Governments Have Taken Some Steps to Address It	42
Concluding Observations	51
Agency Comments and Our Evaluation	52

Appendix I	Objectives, Scope, and Methodology	56
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Appendix II Regression Analysis of SEC Conflict Minerals Disclosure Rule's Effect on Violence in Eastern DRC	62
Results	81
Limitations	86

Appendix III Synthetic Control Method Analysis of SEC Conflict Minerals Disclosure Rule's Effect on Violence in Countries	88
Limitations	93

Appendix IV	Related GAO Reports and Recommendations	94
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Appendix V	Comments from the U.S. Securities and Exchange Commission	99
Accessible Text for Appendix V: Comments from the U.S. Securities and Exchange Commission	107	
GAO Comments	117	

Appendix VI	Comments from the U.S. Agency for International Development	121
Appendix VI: Comments from the U.S. Agency for International Development	124	

Appendix VII	GAO Contact and Staff Acknowledgements	127
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GAO Contact	127
Staff Acknowledgements	127
<hr/>	
Related GAO Products	128

Tables

Table 1: Variables Used in Regression Analysis to Estimate Association between SEC Conflict Minerals Disclosure Rule and Violence in Eastern DRC	64
Table 2: Summary Statistics of Variables Used in Regression Analysis to Estimate Association between SEC Conflict Minerals Disclosure Rule and Violence in Eastern DRC	67
Table 3: Results for Linear Probability Model Used to Estimate Association between SEC Conflict Minerals Disclosure Rule and Occurrence of Any Violent Events in Eastern DRC, July 2004–Dec. 2022	83
Table 4: Results for Linear Probability Model Used to Estimate Association between SEC Conflict Minerals Disclosure Rule and Occurrence of Any Battle in Eastern DRC, July 2004–Dec. 2022	84
Table 5: Results for Count Models Used to Estimate Association between SEC Conflict Minerals Disclosure Rule and Number of Violent Events in Eastern DRC, July 2004–Dec. 2022	85
Table 6: Results for Count Models Used to Estimate Association between SEC Conflict Minerals Disclosure Rule and Number of Battles in Eastern DRC, July 2004–Dec. 2022	86
Table 7: GAO Reports Related to Conflict Minerals in the DRC, including Recommendations and Status of Implementation, 2010–2023	94

Figures

Locations of Violent Events and Informal Gold Mining Sites in Eastern Democratic Republic of the Congo, 2010 and 2022	iii
Figure 1: DRC’s Eastern Provinces and Adjoining Countries	4
Figure 2: Battles and Incidents of Violence against Civilians Committed by Non-State Armed Groups and Congolese Security Forces in Eastern DRC, 2004–2022	7
Accessible Data for Figure 2: Battles and Incidents of Violence against Civilians Committed by Non-State Armed Groups and Congolese Security Forces in Eastern DRC, 2004–2022	7
Figure 3: Artisanal Mining in the DRC	15
Figure 4: Eastern DRC Territories Where Violent Events Occurred around Artisanal Gold Mines in 2010 and 2022	17
Accessible Data for Figure 4: Eastern DRC Territories Where Violent Events Occurred around Artisanal Gold Mines in 2010 and 2022	17
Figure 5: Industrial Tin Mine in the DRC	21
Figure 6: People Waiting to Pass Roadblock in North Kivu Province, DRC, in 2018	23
Figure 7: Mining Police Officer at a Mine Entrance in the DRC	28

Figure 8: Illustration of Reported Official and Unofficial Supply Chains for Gold from Artisanal and Small-Scale Mining (ASM) Sites in the DRC 31

Figure 9: Total Number of Companies That Filed Conflict Minerals Disclosures with Securities and Exchange Commission, 2014–2023 33

Accessible Data for Figure 9: Total Number of Companies That Filed Conflict Minerals Disclosures with Securities and Exchange Commission, 2014–2023 33

Figure 10: Estimated Percentages of Companies Reporting Various Determinations after Conducting “Reasonable Country-of-Origin Inquiries” about Conflict Minerals’ Sources, 2014–2023 35

Accessible Data for Figure 10: Estimated Percentages of Companies Reporting Various Determinations after Conducting “Reasonable Country-of-Origin Inquiries” about Conflict Minerals’ Sources, 2014–2023 35

Figure 11: Estimated Percentages of Companies Reporting Various Determinations of Conflict Minerals’ Sources on the Basis of RCOIs and Due Diligence in 2023 37

Figure 12: Tools and Programs That Companies May Use to Determine Sources of Conflict Minerals, in Relation to Simplified Supply Chain 38

Figure 13: Demographic Household Survey (DHS) Data Showing Percentages of Women in the DRC, Burundi, Rwanda, and Uganda Who Reported Experiencing Sexual Violence in Previous 12 Months (Left) and in Their Lifetime (Right), 2007–2021 44

Accessible Data for Figure 13: Demographic Household Survey (DHS) Data Showing Percentages of Women in the DRC, Burundi, Rwanda, and Uganda Who Reported Experiencing Sexual Violence in Previous 12 Months (Left) and in Their Lifetime (Right), 2007–2021 (Table 1 of 2) 44

Accessible Data for Figure 13: Demographic Household Survey (DHS) Data Showing Percentages of Women in the DRC, Burundi, Rwanda, and Uganda Who Reported Experiencing Sexual Violence in Previous 12 Months (Left) and in Their Lifetime (Right), 2007–2021 (Table 2 of 2) 44

Figure 14: Average Monthly Number of Violent Events in Treated and Nontreated Second-Level Administrative Units of Eastern DRC, July 2004–Dec. 2022 68

Accessible Data for Figure 14: Average Monthly Number of Violent Events in Treated and Nontreated Second-Level Administrative Units of Eastern DRC, July 2004–Dec. 2022 69

Figure 15: Average Monthly Number of Battles in Treated and Nontreated Second-Level Administrative Units of Eastern DRC, July 2004–Dec. 2022 75

Accessible Data for Figure 15: Average Monthly Number of Battles in Treated and Nontreated Second-Level Administrative Units of Eastern DRC, July 2004–Dec. 2022 75

Figure 16: Ratio of Post-Intervention MSPE to Pre-Intervention MSPE for Countries Adjoining the Democratic Republic of the Congo and Other Low- or Lower-Middle-Income Countries, Jan. 2004–Aug. 2015 91

Accessible Data for Figure 16: Ratio of Post-Intervention MSPE to Pre-Intervention MSPE for Countries Adjoining the Democratic Republic of the Congo and Other Low- or Lower-Middle-Income Countries, Jan. 2004–Aug. 2015 91

Abbreviations

ACLED	Armed Conflict Location and Event Data
ADF	Allied Democratic Forces
ASM	artisanal and small-scale mining
CODECO	Cooperative for the Development of the Congo
Dodd-Frank Act	Dodd-Frank Wall Street Reform and Consumer Protection Act
DRC	Democratic Republic of the Congo
DHS	Demographic and Health Survey
EDGAR	Electronic Data Gathering, Analysis, and Retrieval
FARDC	Armed Forces of the Democratic Republic of the Congo
FDLR	Democratic Forces for the Liberation of Rwanda
FNL	National Liberation Forces
IPSA	independent private sector audit
MONUSCO	United Nations Organization Stabilization Mission in the Democratic Republic of the Congo
MSF	Doctors Without Borders
MSPE	mean squared prediction error
OECD	Organisation for Economic Co-operation and Development
RCOI	reasonable country-of-origin inquiry
RED-Tabara	Resistance for Rule of Law in Burundi-Tabara
RMAP	Responsible Minerals Assurance Process
SEC	U.S. Securities and Exchange Commission
UN	United Nations
USAID	U.S. Agency for International Development

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October 7, 2024

Congressional Committees

For more than 20 years, conflict in the Democratic Republic of the Congo (DRC) has contributed to severe abuses of human rights and the displacement of millions of people, according to the United Nations (UN) and the Department of State.¹ Despite attempts by the U.S. government and the international community to improve peace and security, armed groups from the DRC and neighboring countries continue to clash with Congolese security forces—the DRC national army and police—and with each other.² These armed groups and members of the Congolese security forces have also perpetrated violence, including sexual violence, against civilians. Various sources have reported that armed groups also continue to profit from the exploitation of “conflict minerals”—tantalum, tin, tungsten, and gold—by, for example, taxing miners to access the mines.

In July 2010, Congress passed, and the President signed into law, the Dodd-Frank Wall Street Reform and Consumer Protection Act (Dodd-Frank Act).³ The act included provisions requiring the U.S. Securities and Exchange Commission (SEC) to promulgate regulations containing disclosure and reporting requirements on the use of conflict minerals from the DRC and adjoining countries.⁴ In response, in August 2012, SEC adopted a rule requiring companies to file specialized reports, beginning in 2014 and annually thereafter, disclosing their use of conflict minerals.⁵

When releasing the disclosure rule, SEC noted that Congress’s intent was to promote peace and security in the DRC by attempting to inhibit armed groups’ ability to fund their activities by exploiting the trade in conflict minerals. Congress expected that reducing the use of such funding would put pressure on the groups to end the conflict, according to SEC.⁶ SEC further noted that Congress wished to use the disclosure rule to raise public awareness about the sources of companies’ conflict minerals and to promote due diligence about their supply chains. One of the provision’s cosponsors expressed hope that it would help consumers and investors

¹In this report, references to conflict in the DRC refer to multiple conflicts among a variety of factions in eastern DRC rather than to a single conflict involving all relevant factions.

²In this report, “armed groups” refers to nonstate armed groups.

³Pub. L. No. 111-203, § 1502, 124 Stat. 1376, 2213-18 (2010). The Dodd-Frank Act defines conflict minerals as columbite-tantalite (coltan), cassiterite, wolframite, gold, or their derivatives, or any other mineral or its derivatives that the Secretary of State determines to be financing conflict in the DRC or an adjoining country. See Pub. L. No. 111-203, § 1502(e)(4). Tantalum, tin, and tungsten—the derivatives of columbite-tantalite (coltan), cassiterite, wolframite, respectively—and gold are used in industrial and other applications. In this report, “conflict minerals” refers to either these ores or these metals.

⁴The Dodd-Frank Act defines “adjoining country” as a country that shares an internationally recognized border with the DRC. Pub. L. No. 111-203, § 1502(e)(1). When SEC issued its conflict minerals disclosure rule, Angola, Burundi, the Central African Republic, the Republic of the Congo, Rwanda, South Sudan, Tanzania, Uganda, and Zambia shared internationally recognized borders with the DRC.

⁵77 Fed. Reg. 56,274 (Sept. 12, 2012), codified at 17 C.F.R. § 240.13p-1.

⁶77 Fed. Reg. at 56,276. The Dodd-Frank Act states that the President may take action to terminate the disclosure rule once armed groups are no longer directly involved and benefiting from commercial activity involving conflict minerals. Pub. L. No. 111-203, § 1502(b).

make more informed decisions. According to SEC, some who commented on its proposed rule predicted the disclosures would help investors understand risks to companies' reputations.

The Dodd-Frank Act includes a provision requiring us to report on the SEC disclosure rule's effectiveness in promoting peace and security in the DRC and adjoining countries and on the rates of sexual and gender-based violence in war-torn areas of these countries.⁷ We have issued 17 related reports; this is our final report in response to the statutory mandate.⁸ In this report, we examine (1) what can be determined about the effectiveness of the SEC disclosure rule in promoting peace and security in the DRC and adjoining countries, (2) how companies responded to the disclosure rule when filing with SEC in 2023, and (3) what is known about the incidence of sexual violence in the DRC and adjoining countries since April 2022.

To determine the effectiveness of the SEC disclosure rule in promoting peace and security, we used statistical models to assess the rule's effect on the number and occurrence of violent events in eastern DRC and the levels of violence in countries adjoining it.⁹ To design these models, we identified and reviewed relevant empirical studies; we also interviewed the studies' lead authors about their methodological choices. For our statistical analyses, we used data for violent events from Armed Conflict Location and Event Data (ACLED) as well as data for mine locations, mineral prices, and other relevant factors.¹⁰ We assessed the reliability of these data by reviewing relevant documents, testing the data electronically, and reviewing knowledgeable officials' written responses to a range of questions about the data. We found the data to be sufficiently reliable for the purposes of conducting these statistical analyses of the rule's effect on the number and occurrence of violent events in the DRC and the levels of violence in the adjoining countries.

In addition, we interviewed various experts—U.S. and DRC government officials, UN officials, representatives of nongovernmental organizations, and researchers—to gather qualitative information about conflict in the DRC and about the SEC disclosure rule's effectiveness. Further, we identified and analyzed other relevant literature, including UN Group of Experts reports and studies from nongovernmental organizations, to identify other findings about the SEC disclosure rule's effectiveness.

⁷The Dodd-Frank Act requires us to assess the effectiveness of section 13(p) of the Securities Exchange Act of 1934, as added by section 1502(b) of the Dodd-Frank Act, in promoting peace and security in the DRC and adjoining countries. Pub. L. No. 111-203, § 1502. Section 13(p) requires SEC to promulgate regulations requiring disclosure about certain conflict minerals, which the SEC did when it adopted its conflict minerals disclosure rule in 2012. Pub. L. No. 111-203, § 1502(b). Therefore, we assessed the effectiveness of the SEC disclosure rule in promoting peace and security in the DRC and adjoining countries. We are required to report on the effectiveness of the SEC disclosure rule annually from 2012 through 2020, with additional reports in 2022 and 2024. Pub. L. No. 111-203, § 1502(d), as amended by the GAO Mandates Revision Act, Pub. L. No. 114-301, § 3(b), 130 Stat. 1514 (2016). The act also includes a provision for us to submit a report that includes an assessment of the rate of "sexual and gender-based violence" in war-torn areas of the DRC and adjoining countries annually from 2011 through 2020, with additional reports in 2022 and 2024. According to UN officials, sexual violence is a form of gender-based violence.

⁸For a complete list of these 17 prior reports, see Related GAO Products at the end of this report.

⁹For our analysis of the disclosure rule's effectiveness in promoting peace and security, we defined "violent events" and "violence" as comprising battles, explosions and remote violence, or violence against civilians. We define eastern DRC as the territories and cities shown on State's 2011 "Conflict Minerals Map," which identifies mining areas affected by armed groups. The map covers Ituri, North Kivu, and South Kivu Provinces and parts of Upper Katanga, Lualaba, Upper Lomami, Maniema, Tanganyika, Tshopo, Lower Uele, and Upper Uele Provinces. We focused our analysis on eight adjoining countries—Angola, Burundi, the Central African Republic, the Republic of the Congo, Rwanda, Tanzania, Uganda, and Zambia. We excluded Sudan and South Sudan because the creation of South Sudan in 2011 changed Sudan's boundaries.

¹⁰ACLED, an international nonprofit organization, collects, analyzes, and maps data on violent conflict and protests—specifically, the dates, actors, locations, fatalities, and types of reported political violence and protest events—in all countries around the world.

To describe how companies responded to the SEC disclosure rule when filing in 2023, we generated and analyzed a random sample of 100 disclosure reports from the 1,017 in SEC’s publicly available Electronic Data Gathering, Analysis, and Retrieval database.¹¹ We reviewed the Dodd-Frank Act and the requirements of the SEC disclosure rule to develop a data collection instrument that guided our analysis of the filings. We also interviewed SEC officials and a nongeneralizable sample of 13 industry stakeholders to gather additional perspectives about meeting the requirements of the SEC disclosure rule. We identified stakeholders through our prior work on conflict minerals, background research on companies and organizations involved in responsible sourcing efforts, and their participation in an annual industry conference, as well as an expert referral process that included asking experts to recommend other experts.

To provide information about sexual violence in the DRC and adjoining countries since April 2022, we reviewed and analyzed relevant journal articles and reports that we identified by searching databases, using key terms and concepts.¹² We also identified and reviewed relevant case-file reports. In addition, we interviewed officials from State, the U.S. Agency for International Development (USAID), UN agencies, and six nongovernmental organizations conducting work related to sexual violence in the DRC and adjoining countries. For more details of our scope and methodology, see appendix I.

We conducted this performance audit from August 2023 to October 2024 in accordance with generally accepted government auditing standards. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objectives.

Background

Recent History of Conflict in DRC

The DRC has experienced decades of political upheaval and armed conflict since achieving independence from Belgium in 1960. From 1998 to 2003, the DRC and eight other African countries fought in the Second Congo War, which resulted in the deaths of at least 3 million people in the DRC.¹³ In 1999, the UN deployed a peacekeeping mission now known as the UN Organization Stabilization Mission in the DRC, or by its French

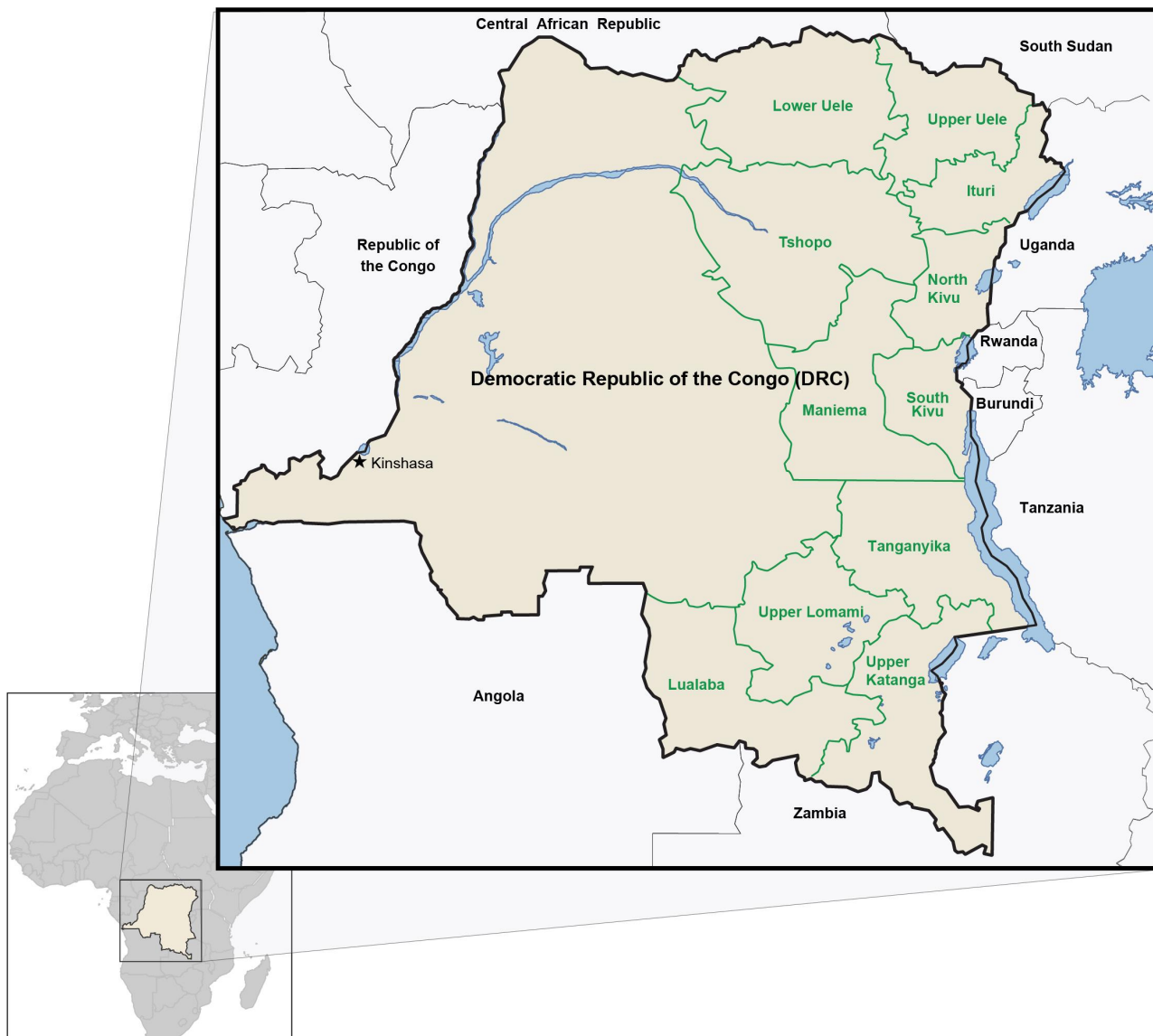
¹¹We randomly selected this sample of 100 filings to create estimates generalizable to all companies that filed conflict minerals disclosures from January 2023 through September 2023.

¹²For our analysis of information about sexual violence, we focused on the DRC and the three countries that adjoin eastern DRC—Rwanda, Uganda, and Burundi. We last reported on these issues in September 2022. See GAO, *Conflict Minerals: Overall Peace and Security Has Not Improved in the Democratic Republic of the Congo since 2014*, [GAO-22-105411](#) (Washington, D.C.: Sept. 14, 2022). That report discussed sexual violence in the DRC on the basis of information that had become available from March 2020 through April 2022.

¹³In 1996, Rwanda and Uganda backed a rebellion against Zaire’s leader Mobutu Sese Seko, a conflict that became known as the First Congo War. In 1997, the Congolese opposition leader Laurent Désiré Kabila seized power, Mobutu fled to Morocco, and Zaire was renamed the DRC.

acronym, MONUSCO.¹⁴ However, armed groups continue to perpetrate violence in eastern DRC, the location of many mines that produce conflict minerals (see fig. 1).¹⁵

Figure 1: DRC's Eastern Provinces and Adjoining Countries



Source: GAO, based on United Nations map. | GAO-25-107018

¹⁴MONUSCO's mandated priorities are to (1) protect civilians under threat of physical violence and (2) support the stabilization and strengthening of DRC state institutions and key governance and security reforms. In December 2023, the UN Security Council adopted a resolution that extended MONUSCO's mandate for 1 year and set out a disengagement plan for MONUSCO to withdraw from the DRC. S.C. Res. 2717, U.N. Doc. S/RES/2717 (Dec. 19, 2023). On April 30, 2024, MONUSCO announced it had ceased operations in South Kivu Province and that its presence would be limited to Ituri and North Kivu Provinces as of May 2024.

¹⁵A DRC government official estimated the total number of tantalum, tin, tungsten, and gold mines in the DRC at 4,000 to 5,000. The International Peace Information Service, a Belgian research institute, has mapped approximately 2,800 of these mines in eastern DRC.

Note: The term “adjoining country” is defined in Section 1502(e)(1) of the 2010 Dodd-Frank Wall Street Reform and Consumer Protection Act as a country that shares an internationally recognized border with the Democratic Republic of the Congo (DRC). Pub. L. No. 111-203, § 1502(e)(1), 124 Stat. 1376, 2217 (2010). The adjoining countries were Angola, Burundi, Central African Republic, the Republic of the Congo, Rwanda, South Sudan, Tanzania, Uganda, and Zambia when the U.S. Securities and Exchange Commission issued its conflict minerals disclosure rule. 77 Fed. Reg. 56,274 (Sept. 12, 2012).

The Kivu Security Tracker identified an estimated 120 armed groups in eastern DRC in 2020 (the most recent data available).¹⁶ As we reported in 2022, the size and strength of these groups tend to change over time as groups fracture, disintegrate, collaborate, or form alliances, according to experts we interviewed and reports we reviewed from the UN Group of Experts on the DRC.¹⁷ Various sources have reported that such changes often result from internal fractures or external circumstances, such as targeting by the Armed Forces of the DRC (known by the French acronym FARDC) or by other armed groups. Groups may range in size from very small militias, with 30 or 40 combatants, to groups of more than 1,000, according to the UN Group of Experts.¹⁸ The structure of these armed groups also varies; some groups are well organized, while others are loosely defined self-defense militias. The text box describes selected armed groups operating in eastern DRC.

¹⁶Launched in 2017, the Kivu Security Tracker—a joint project of the Congo Research Group, Bridgeway Foundation, Human Rights Watch, and Ebuteli—maps violence in eastern DRC to better understand trends, causes of insecurity, and serious violations of international human rights and humanitarian law. The groups included in this count (1) had a differentiated organizational structure and an identity; (2) sought to assert some form of control over a geographic area; (3) referred to an ideology; (4) employed violence regularly as a technique of governance; and (5) were located in Ituri, North Kivu, South Kivu, and Tanganyika Provinces. See Kivu Security Tracker, *The Landscape of Armed Groups in Eastern Congo: Missed Opportunities, Protracted Insecurity and Self-fulfilling Prophecies* (New York: Feb. 2021). The Kivu Security Tracker went offline in 2023 after a security vulnerability was discovered in the tracker’s database, according to Human Rights Watch.

¹⁷[GAO-22-105411](#). In 2004, UN Security Council Resolution 1533 established the UN Group of Experts on the DRC. S.C. Res. 1533, U.N. Doc. S/RES/1533 (Mar. 12, 2004). The group is mandated to, among other things, evaluate the impact of conflict minerals traceability efforts as well as gather and examine information about networks supporting armed groups and criminal networks in the DRC and about perpetrators of human rights violations and abuses in the DRC, including those within the security forces. S.C. Res. 2360, U.N. Doc. S/RES/2360 (June 21, 2017).

¹⁸In some armed groups, not all combatants are individually armed, according to the UN Group of Experts.

Descriptions of Selected Nonstate Armed Groups in Eastern DRC

- **Allied Democratic Forces (ADF).** Created in opposition to the Ugandan government, ADF established ties with ISIS in late 2018, according to the Department of State. The U.S. government refers to ADF as ISIS-DRC and formally designated the group as a foreign terrorist organization in 2021. This well-organized group includes recruitment and support networks, according to the United Nations (UN) Group of Experts on the Democratic Republic of the Congo (DRC). The Ugandan military, in collaboration with the Congolese military, has been fighting ADF in the DRC since late 2021.
- **Cooperative for the Development of the Congo (CODECO).** In 2017, CODECO emerged as a decentralized association of ethnic Lendu militias in Ituri Province, according to the International Crisis Group. In 2024, CODECO's spokesperson claimed that the group's various factions were coordinated and commanded by headquarters and that the group would cease hostilities once its rival armed group Zaʼe disarmed and the Congolese military stopped targeting the Lendu community, according to the UN Group of Experts.
- **Democratic Forces for the Liberation of Rwanda (FDLR).** Currently operating in North Kivu Province, FDLR was created in 2000 by troops belonging to the Rwandan army and various militias, according to the Kivu Security Tracker. In 2010, we reported that the group's members included soldiers and officers from the former pro-Hutu Rwandan regime that planned and carried out the Rwandan genocide (see [GAO-10-1030](#)).
- **March 23 Movement (M23).** M23 is named for the date in 2009 when the National Congress for the Defence of the People signed a peace treaty with the DRC government. M23 captured the capital of North Kivu Province in 2012 before UN and Congolese forces defeated it in 2013. Allegedly supported by Rwanda, M23 reemerged in November 2021, in part, because of a lack of progress in the DRC government's implementation of the 2013 agreement that ended the initial rebellion, according to the UN Group of Experts. M23 claims to want to defend Congolese Tutsis against threats from Hutu groups, including FDLR, according to the Africa Center for Strategic Studies.
- **Mai Mai militias.** Mai Mai militias are numerous, disparate groups that operate as self-defense networks or criminal groups, according to the Congressional Research Service. The Kivu Security Tracker reported that approximately 40 percent of the armed groups in the region were Mai Mai militias in 2020.
- **National Liberation Forces (FNL).** Operating in South Kivu Province, FNL had approximately 250 Burundian combatants in 2021, according to the UN Group of Experts. The Burundian government accused FNL of a coup attempt in September 2022, according to the same source. Some sources refer to the group as the National Liberation Front.
- **Resistance for Rule of Law in Burundi-Tabara (RED-Tabara).** In 2016, the UN Group of Experts reported the RED-Tabara consisted almost entirely of Burundian citizens and was connected to the founder and leader of a Burundian political party. RED-Tabara has used South Kivu Province as a base to organize, plan, train, and launch operations across the border into Burundi and has recently been supported by Rwanda, according to the same source.
- **Yakutumba.** Yakutumba, also known as Mai Mai Yakutumba, is a predominantly ethnic Bembe armed group created by a former Congolese military officer in 2006, according to the UN Group of Experts and Kivu Security Tracker. In 2015, the UN Group of Experts reported that Yakutumba was a well-organized group, with soldiers, a navy, intelligence services, and a political party. In 2018, the same source reported that the group operated a parallel administration, including customs and migration offices to generate revenue.
- **Zaʼe.** Zaʼe began as a loosely defined self-defense militia in response to violence perpetrated by CODECO in northern Ituri Province, and it became more formalized in mid-2020, according to the Kivu Security Tracker.

Source: GAO analysis of UN, U.S. government, and nongovernmental organization data and reports. | GAO-25-107018

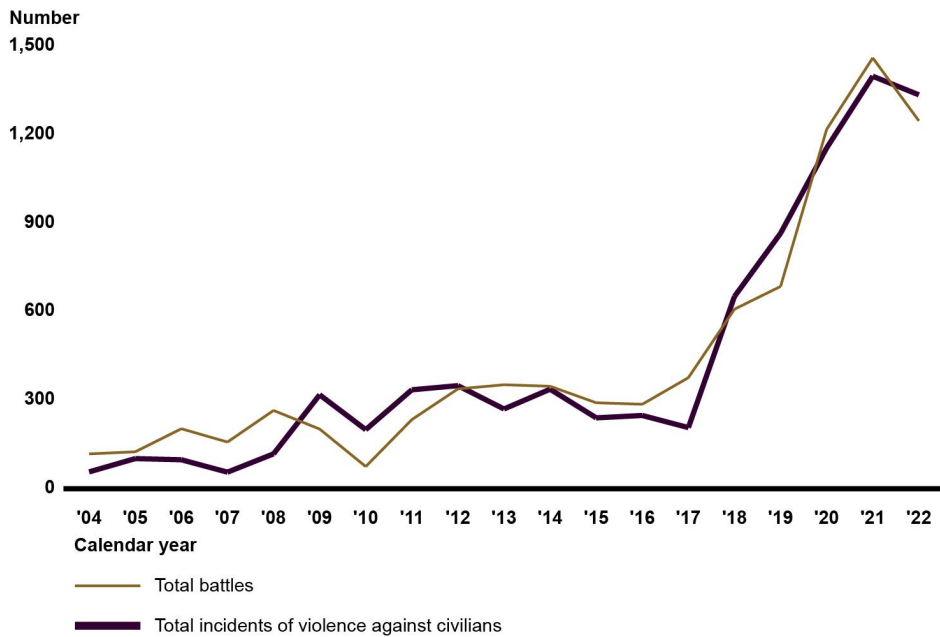
In general, the number of battles and incidents of violence against civilians in eastern DRC, remained relatively constant from 2004—after the Second Congo War—through 2016 and steadily increased from 2017 through 2021 and dropped slightly in 2022, according to ACLED data (see fig. 2).¹⁹ Most battles occurred between armed groups and Congolese security forces.²⁰ As battles increased, so did incidents of violence against civilians, including attacks, sexual violence, abductions, and forced disappearances. Armed groups committed

¹⁹ACLED data are based on media reports, reports from nongovernmental and international organizations, selected social media accounts, and information obtained through partnerships with local conflict observatories. While local organizations gather primary data and have coverage that reflects local realities, these initiatives are often limited in scope, according to ACLED. Additionally, ACLED states that media reports may not capture all events. Consequently, ACLED may underreport events such as battles. In 2023, one of the local organizations supplying conflict information to ACLED ceased reporting. As a result, ACLED data on events in DRC for 2023 are not comparable to data for previous years and we have therefore annual data for years after 2022.

²⁰From 2004 through 2022, battles also occurred between armed groups and foreign or other forces, such as the armed forces of adjoining countries (e.g., Burundi, Rwanda, and Uganda), MONUSCO, and private security forces, according to ACLED data. The number of these battles during this period ranged from one to 58 annually, averaging 16 per year.

the majority of this violence against civilians, although Congolese security forces, including the military and police, were also responsible for some violence, according to ACLED data.²¹

Figure 2: Battles and Incidents of Violence against Civilians Committed by Non-State Armed Groups and Congolese Security Forces in Eastern DRC, 2004–2022



Legend: DRC = Democratic Republic of the Congo.
 Source: GAO analysis of data from the Armed Conflict Location & Event Data (ACLED). | GAO-25-107018

Accessible Data for Figure 2: Battles and Incidents of Violence against Civilians Committed by Non-State Armed Groups and Congolese Security Forces in Eastern DRC, 2004–2022

	Battles between Congolese states forces and non-state armed groups	Battles among non-state armed groups	Total Battles
2004	98	11	109
2005	111	5	116
2006	192	2	194
2007	130	19	149
2008	232	24	256
2009	181	12	193
2010	62	4	66
2011	196	29	225
2012	288	41	329
2013	245	98	343
2014	281	57	338

²¹ACLED data also show an annual average of three incidents of violence against civilians by other armed actors, such as the state security forces of neighboring countries.

	Battles between Congolese states forces and non-state armed groups	Battles among non-state armed groups	Total Battles
2015	238	44	282
2016	232	45	277
2017	290	77	367
2018	488	111	599
2019	539	137	676
2020	874	334	1208
2021	1162	288	1450
2022	964	273	1237
2023	568	376	944

Source: GAO analysis of data from the Armed Conflict Location & Event Data (ACLED). | GAO-25-107018

Notes: Congolese security forces include the military and national police. According to ACLED, incidents of violence against civilians include attacks, sexual violence, abductions, and forced disappearances and do not include battles between armed groups, explosions, or remote violence.

From 2004 through 2022, battles also occurred in eastern DRC between armed groups and foreign or other forces, such as the armed forces of adjoining countries (e.g., Burundi, Rwanda, and Uganda), United Nations peacekeeping forces, and private security forces, according to ACLED data. The number of these battles ranged from one to 58 annually, averaging 16 per year. ACLED data for this period also show an annual average of three incidents of violence against civilians by other armed actors, such as the state security forces of neighboring countries.

ACLED data are based on media reports, reports from nongovernmental and international organizations, selected social media accounts, and information obtained through partnerships with local conflict observatories. In 2023, one of the local organizations supplying conflict information to ACLED ceased reporting; as a result, ACLED data on events in DRC for 2023 are not comparable to such data for previous years, and we have therefore not included annual data for years after 2022.

As we reported in 2022, the increase in violence that began in 2017 was attributable in part to shifting alliances among various armed groups, the emergence of the armed group Cooperative for the Development of the Congo (CODECO), and the strengthening of a separate group, Allied Democratic Forces (ADF), according to experts we interviewed.²² In particular, ADF and CODECO factions tend to attack civilians, whereas other armed groups focus more on theft and taxation, according to experts from a research institution. Experts added that, regardless of armed groups' stated motives, such groups often prey on local populations and perpetrate abuses, such as raping civilians and destroying villages.

Moreover, the reemergence of the armed group M23 in November 2021 has increased conflict and violence against civilians in eastern DRC.²³ In June 2023, the UN Group of Experts reported that M23 continued to significantly expand the territory under its control and increase its attacks, despite bilateral, regional, and international de-escalation efforts.²⁴ To assist FARDC in its fight against M23, some armed groups created a coalition, *Volontaires pour la défense de la patrie* (Volunteers for the Defense of the Homeland, sometimes

²²GAO-22-105411. ADF established ties with ISIS in late 2018, according to the Department of State. The U.S. government refers to ADF as ISIS-DRC and formally designated the group as a foreign terrorist organization in 2021.

²³According to the UN Group of Experts, M23 reemerged because of, in part, a lack of progress in the implementation of the 2013 agreement ending the initial rebellion. M23's plan was to force the DRC government to accept the group's demands regarding amnesties, asset recovery, return to the DRC, integration into FARDC, and political positions.

²⁴United Nations Group of Experts, *Final Report of the Group of Experts on the Democratic Republic of the Congo*, S/2023/431 (June 13, 2023).

referred to as the Wazalendo), in September 2023, according to a UN Group of Experts report.²⁵ The report noted that some senior FARDC officers coordinated the military's collaboration with these armed groups, supporting them with logistics, weapons, and financing.

In December 2023, the UN Group of Experts reported that fighting between M23 and FARDC involved other Congolese and international armed actors and security forces.²⁶ M23 was supported by the Rwandan military, while FARDC was supported by the Volunteers for the Defense of the Homeland, the Democratic Forces for the Liberation of Rwanda (FDLR), private military companies, and the Burundian military, according to the UN Group of Experts report. State officials told us that M23 contributes to conflict in eastern DRC through its own actions and by occupying the attention of FARDC and MONUSCO, giving other armed groups more freedom of action.

As we reported in 2022, violence in eastern DRC has affected the sense of security among civilians, who are often targeted by armed groups and Congolese security forces, according to experts.²⁷ For example, M23 has perpetrated deadly attacks and gang rapes among civilian populations associated with, or presumed to support, FDLR and other armed groups, according to the UN Group of Experts.²⁸

Civilian insecurity has led to an overall increase in the numbers of internally displaced persons and refugees from the region. An estimated 6.7 million people were internally displaced by conflict at the end of 2023, according to the Internal Displacement Monitoring Centre.²⁹ This estimate reflects one of the largest internal displacement crises in the world, according to the UN Group of Experts. The same source reported that M23's territorial expansion led to the displacement of more than 1 million civilians in North Kivu Province as of April 15, 2023.

²⁵According to the UN Group of Experts, various Congolese armed groups have, in the context of "liberating" the country from the control of "foreign" armed groups such as M23, adopted the name "Wazalendo" (Swahili for "true patriots") to gain legitimacy and better position themselves for possible future integration into the Congolese military. United Nations Group of Experts, *Midterm Report of the Group of Experts on the Democratic Republic of the Congo*, S/2023/990 (Dec. 30, 2023). The Wazalendo also claim to defend local communities, according to State officials.

²⁶United Nations Group of Experts, *Midterm Report of the Group of Experts on the Democratic Republic of the Congo* (2023).

²⁷[GAO-22-105411](#).

²⁸M23 claims to want to defend Congolese Tutsis against threats from Hutu groups, including FDLR, according to the Africa Center for Strategic Studies.

²⁹Internal Displacement Monitoring Centre, *2024 Global Report on Internal Displacement* (Geneva: April 2024).

SEC Conflict Minerals Disclosure Rule

Uses of Conflict Minerals

Various industries use the four conflict minerals—tantalum, tin, tungsten, and gold—in a range of products. For example:

Tantalum is used mainly to manufacture capacitors that enable energy storage in electronic products, such as cell phones and computers, or to produce alloy additives used in turbines in jet engines.

Tin is used to solder metal pieces and is found in food packaging, steel coatings on automobile parts, and some plastics.

Tungsten is used in automobile manufacturing, drill bits, cutting tools, and other industrial manufacturing tools and is the primary component of light bulb filaments.

Gold is used as money reserves, in jewelry, and in electronics such as cell phones and laptops.

Source: GAO. | GAO-25-107018

In August 2012, SEC adopted its disclosure rule for conflict minerals in response to Section 1502(b) of the Dodd-Frank Act.³⁰ The rule requires certain companies to (a) file a specialized disclosure report, Form SD, if they manufacture, or contract to have manufactured, products that contain conflict minerals necessary to those products' functionality or production and (b) file an additional conflict minerals report, if applicable.³¹

SEC's Form SD provides general instructions to companies submitting a disclosure report and specifies the information that the form, in addition to a conflict minerals report, must include. According to these instructions, a company must file a conflict minerals report if, after exercising due diligence, it has reason to believe its conflict minerals may have come from covered countries and may not have come from scrap or recycled sources.³²

The SEC disclosure rule outlines a process for companies to follow, as applicable. To comply with the rule, the process broadly requires a company to take the following steps:

1. Determine whether the company manufactures, or contracts to have manufactured, products with "necessary" conflict minerals.
2. Conduct a reasonable country-of-origin inquiry (RCOI) to determine the origin of those conflict minerals.³³

³⁰77 Fed. Reg. 56,274.

³¹The SEC disclosure rule applies to any issuer that files reports with SEC under Section 13(a) or Section 15(d) of the Securities and Exchange Act of 1934, including domestic companies, foreign private issuers, and smaller reporting companies. 77 Fed. Reg. at 56,287. According to SEC, issuers that have a reporting obligation are companies that offer shares publicly and file forms 10-K, 20-F, or 40-F with SEC. For the purposes of our report, we refer to issuers affected by the rule as "companies."

³²For the purposes of the disclosure rule, SEC refers to the DRC and its adjoining countries—Angola, Burundi, the Central African Republic, the Republic of the Congo, Rwanda, South Sudan, Tanzania, Uganda, and Zambia—as "covered countries."

³³According to the disclosure rule, it does not specify the steps and outcomes that are necessary to satisfy the RCOI requirement, because "such a determination depends on each issuer's facts and circumstances." Nevertheless, the rule describes several general standards. The RCOI must be "reasonably designed" and "conducted in good faith." The preamble to the rule states that an issuer would satisfy its RCOI requirement if it seeks and obtains reasonably reliable representations indicating the facilities that processed its conflict minerals and demonstrating that the minerals did not originate in the covered countries or came from recycled sources. The preamble to the rule also states that an issuer would have reason to believe representations were true if a processing facility received a "conflict-free" designation by a recognized industry group as part of an independent private sector audit. 77 Fed. Reg. at 56311-12.

3. Exercise due diligence, if appropriate, to determine the source and chain of custody of those conflict minerals and whether they benefited armed groups, and adhere to a nationally or internationally recognized due diligence framework, as available for these necessary conflict minerals.³⁴

As adopted, the SEC disclosure rule required companies to, among other things, describe in their conflict minerals reports, if appropriate, any products “not found to be ‘DRC conflict free’” and post this information to their websites. However, an appellate court found that Section 1502 of the Dodd-Frank Act and the rule violated the First Amendment to the extent that the statute and the rule required companies to report to SEC and disclose on their websites that any of their products have not been found to be DRC conflict free.³⁵

Following the appellate court decision, the staff of SEC’s Division of Corporation Finance issued guidance in April 2014. This guidance indicated that, pending further action by SEC or a court, companies required to file a conflict minerals report would not have to identify their products as “DRC conflict undeterminable,” “not been found to be DRC conflict free,” or “DRC conflict free.”³⁶ The guidance also indicated that companies are not required to obtain an independent private sector audit unless they choose to describe their products as DRC conflict free in a conflict minerals report.³⁷

In April 2017, after the final judgment in the case, the staff of SEC’s Division of Corporation Finance issued revised guidance.³⁸ This guidance indicates that, because of uncertainty about how SEC commissioners would resolve issues related to the court ruling, the division would not recommend enforcement action to the

³⁴A company is required to perform due diligence on its conflict minerals’ source and chain of custody and provide a description of the measures it took to exercise due diligence, if, after completing an RCOI, it knows or has reason to believe that the minerals may have originated in the covered countries and may not be from scrap or recycled sources. 77 Fed. Reg. at 56,281.

³⁵According to SEC staff, the U.S. Court of Appeals in April 2014 rejected challenges to the bulk of the SEC conflict minerals rule. However, the court held that Section 1502 of the Dodd-Frank Act and the rule violated the First Amendment to the extent that the statute and the rule required regulated entities to report to SEC and to state on their websites that any of their products had not been found to be “DRC conflict free.” *Nat’l Ass’n of Mfrs. v. SEC*, 748 F.3d 359 (D.C. Cir. Apr. 14, 2014).

³⁶See Keith F. Higgins, Director, SEC Division of Corporation Finance, *Statement on the Effect of the Recent Court of Appeals Decision on the Conflict Minerals Rule* (Apr. 29, 2014). According to SEC staff, the April 2014 guidance is still in place.

³⁷Under the SEC disclosure rule, an IPSA expresses an opinion or conclusion as to whether the design of the issuing company’s due diligence measures as set forth in its conflict minerals report conforms in all material respects with the criteria set forth in the nationally or internationally recognized due diligence framework the company used. The IPSA also expresses an opinion or conclusion on whether the description of those measures the company performed as set forth in its conflict minerals report is consistent with the due diligence process the company undertook.

³⁸The final judgment set aside the SEC disclosure rule “to the extent that the statute and rule required regulated entities to report to the [U.S. Securities and Exchange] Commission and to state on their websites that any of their products have ‘not been found to be “DRC conflict free.’” *Nat’l Ass’n of Mfrs. v. SEC*, No. 13-cv-635 (D.D.C. Apr. 3, 2017). The District Court also issued a remand to SEC. For SEC’s revised guidance after the final judgment, see SEC Division of Corporation Finance, *Updated Statement on the Effect of the Court of Appeals Decision on the Conflict Minerals Rule* (Apr. 7, 2017).

commission if companies filed disclosure only for certain items specified under the rule and did not include a description of due diligence.³⁹

However, as we previously reported, SEC staff told us that the 2017 staff guidance is not binding on the commission, which can initiate enforcement action if companies do not report on due diligence in accordance with the rule.⁴⁰ The SEC Chair released a statement in 2018 confirming that SEC staff statements are nonbinding and do not create enforceable legal rights or obligations of the commission. The statement clarifies a distinction between SEC staff's views and the commission's rules and regulations.⁴¹ As we previously reported, SEC staff told us that the 2017 guidance is temporary but remains in place pending the commission's review of the rule.⁴² As of June 2024, review of the rule was on SEC's long-term regulatory agenda, meaning that any action would likely not take place within the next 12 months, according to SEC staff.

Prior GAO Reporting on Conflict Minerals

We have reported on the DRC and conflict minerals since 2010.⁴³ The text box summarizes our findings and recommendations from selected prior reports.⁴⁴

³⁹The updated guidance specifically states that "in light of the uncertainty regarding how the [SEC] Commission will resolve those issues [raised by the Court's decision] and related issues raised by commenters, SEC's Division of Corporation Finance [SEC staff] has determined that it will not recommend enforcement action to the Commission if companies, including those that are subject to paragraph (c) of Item 1.01 of Form SD, only file disclosure under the provisions of paragraphs (a) and (b) of Item 1.01 of Form SD." The statement noted that it "is subject to any further action that may be taken by the Commission, expresses the Division's position on enforcement action only, and does not express any legal conclusion on the rule." See SEC Division of Corporation Finance, *Updated Statement on the Effect of the Court of Appeals Decision on the Conflict Minerals Rule*.

⁴⁰GAO, *Conflict Minerals: 2020 Company SEC Filings on Mineral Sources Were Similar to Those from Prior Years*, [GAO-21-531](#) (Washington, D.C.: July 12, 2021).

⁴¹Jay Clayton, SEC Chairman, *Statement Regarding SEC Staff Views* (Sept. 13, 2018). According to SEC staff, the Chairman's statement was a general statement regarding staff views and was not specific to staff statements regarding the conflict minerals rule.

⁴²GAO, *Conflict Minerals: 2022 Company Reports on Mineral Sources Were Similar to Those Filed in Prior Years*, [GAO-23-106295](#) (Washington, D.C.: July 19, 2023).

⁴³For a complete list of our 17 prior reports on these topics, see Related GAO Products at the end of this report.

⁴⁴Appendix IV summarizes the status of agencies' implementation of the recommendations in these prior reports.

Recommendations and Findings from Selected Prior GAO Reports about DRC and Conflict Minerals

- In 2020, we reported that the Department of State and the U.S. Agency for International Development had implemented the U.S. conflict minerals strategy but had not established performance indicators for all of the strategic objectives. We recommended State develop performance indicators for assessing progress toward these strategic objectives. In February 2023, State said officials were considering revisions to the strategy and would develop indicators as part of any updates. See [GAO-20-595](#).
- In 2017, we reported that almost all artisanal and small-scale mined gold from the Democratic Republic of the Congo (DRC) is produced and traded unofficially and smuggled from the country. Additionally, we reported that incentives for responsible sourcing of artisanal and small-scale mined gold were limited by the relatively small number of gold mines validated as conflict free and the DRC's relatively high provincial mining taxes, compared with taxes in neighboring countries. See [GAO-17-733](#).
- In 2016, we reported that processing facilities act as "choke points" in conflict mineral supply chains and present challenges for companies filing conflict mineral disclosures. We recommended that the Department of Commerce take steps to (1) assess the accuracy of independent private sector audits; (2) establish standards of best practices for such audits; and (3) acquire the necessary knowledge, skills, and ability to carry out these responsibilities. As of February 2023, Commerce had not implemented this recommendation. See [GAO-16-805](#).
- In 2014, we recommended that Commerce develop and report required information about smelters and refiners of conflict minerals worldwide. Commerce sent Congress a list of all known conflict mineral processing facilities worldwide in August 2014 and subsequently published this list on its website. See [GAO-14-575](#).
- In 2012, we recommended that the Securities and Exchange Commission identify remaining steps and associated time frames to finalize and issue a conflict mineral disclosure rule. The commission subsequently adopted a final conflict minerals disclosure rule and published it in the Federal Register on September 12, 2012. See [GAO-12-763](#).
- In 2010, we recommended that State develop actionable steps the U.S. could take to help monitor, regulate, and control the minerals trade in eastern DRC. In late 2010, State updated its DRC conflict minerals strategic plan with five objectives to address linkages between human rights abuses, armed groups, mining of conflict minerals, and commercial products. See [GAO-10-1030](#).

Source: GAO. | GAO-25-107018

SEC Disclosure Rule Generally Has Not Reduced Violence in Eastern DRC or Adjoining Countries but Has Encouraged More Transparent Sourcing

Our statistical analyses found that the SEC conflict minerals disclosure rule has not reduced the occurrence or number of violent events in eastern DRC and was associated with a spread of violence in certain territories containing artisanal and small-scale mining (ASM) sites for gold.⁴⁵ Further, the rule likely had no effect on violence in the countries adjoining the DRC. Armed groups in the DRC fund their violent activities through various sources besides conflict minerals, and a number of interdependent factors, such as influence from neighboring countries and weakness in governance, contribute to conflict in the east, according to experts. The rule has encouraged companies to improve their due diligence and transparency regarding conflict minerals' origins, according to industry stakeholders. Nevertheless, obstacles associated with smuggling and cost may limit the efficacy of efforts to trace conflict minerals' origins, according to experts and reports by nongovernmental organizations.

⁴⁵Artisanal and small-scale mining sites are small, typically labor-intensive mining operations characterized by a lack of mechanization and capital investment.

SEC Rule Has Not Reduced and Likely Contributed to Spreading Violence in Eastern DRC and Likely Had No Effect in Adjoining Countries

Violence in Eastern DRC Has Not Decreased with SEC Disclosure Rule

Our statistical analysis of ACLED data on violent events, data on ASM locations and mineral prices, and other data found no evidence that the SEC disclosure rule has decreased violence in eastern DRC.⁴⁶ Specifically, our analysis of data from July 2004 through December 2022 showed that the disclosure rule was not linked to a decrease in either the occurrence or number of violent events in eastern DRC.

Our analysis compared the territories that were likely to be most affected by the SEC disclosure rule with territories that were likely to be less affected by it.⁴⁷ By controlling for specific territories, our model isolated the effects of the SEC disclosure rule from factors in each territory that remained constant or slowly evolved over time, such as geographical characteristics, governance, ethnic tensions, and the presence of natural resources.⁴⁸ Additionally, by controlling for each month of the selected period, the model accounted for time-specific factors that affected the territories of eastern DRC equally, such as macroeconomic conditions and temporal proximity to elections. Further, the model controlled for specific factors that varied across territories and time that we identified as likely affecting violence, such as mineral prices, historical violence, spatial proximity of violence, and precipitation patterns. (Fig. 3 shows Congolese miners using artisanal mining techniques.)

⁴⁶For the purpose of our analysis, we defined “violent events” and “violence” as comprising battles, explosions and remote violence, and violence against civilians. We focused our analysis on artisanal and small-scale mines because they face more interference from armed groups than industrial mines. We compared the number and occurrence of violent events before and after the enactment of the Dodd-Frank Act in July 2010. Although SEC finalized its disclosure rule in 2012, our analysis used the enactment of the Dodd-Frank Act as a proxy for the rule because companies, governments, and others began to take action after the act’s enactment in anticipation of the rule. See appendix II for more information about this analysis.

⁴⁷We followed related empirical literature by defining the territories that were likely to be most affected by the rule as those in Maniema, North Kivu, and South Kivu Provinces where the President of the DRC announced a ban on mining from September 2010 until March 2011 and those containing at least one mine with geocoordinates in State’s 2011 map of conflict mining zones. See appendix II for more information about our analysis as well as its limitations.

⁴⁸We examined violent events in eastern DRC’s second-level administrative units, which consist of territories and cities. For the purposes of this report, we refer to these administrative units collectively as territories.

Figure 3: Artisanal Mining in the DRC



Artisanal tin (left), tantalum (center), and gold (right) mining sites.

Legend: DRC = Democratic Republic of the Congo.

Source: International Peace Information Service. | GAO-25-107018

The results of our analysis are consistent with previously published studies. For example, a 2023 study found that the probability of conflict in the DRC—specifically, violence against civilians, battles, riots and protests, and deadly conflict—roughly doubled through 2016 because of the Dodd-Frank Act.⁴⁹ The study also found evidence suggesting that the act, which required that SEC promulgate the conflict minerals disclosure rule, caused a reduction of workers employed at tantalum, tin, and tungsten mines.⁵⁰ The study’s author posits that the ability of armed groups to perpetrate violence may have increased because the labor market shock caused by changes taken in reaction to the act reduced miners’ options for earning income from mining and thus increased their incentive to join armed groups.

Similarly, a study examining the Dodd-Frank Act’s short-term effects (those prior to 2013) found that, rather than reducing violence, it increased the likelihood that armed groups would loot, and commit violence against, civilians.⁵¹ The study’s authors suggest that the act led to displacement of armed groups, which encouraged them to replace lost revenue by looting.

SEC Rule Likely Contributed to a Spread of Violence around Gold Mines in Eastern DRC

Our analysis of ACLED and other data showed that the SEC disclosure rule was associated with a spread of violence in eastern DRC, particularly in territories with ASM sites for gold that were likely to be most affected

⁴⁹Jeffrey R. Bloem, “Good Intentions Gone Bad? The Dodd-Frank Act and Conflict in Africa’s Great Lakes Region,” *Economic Development and Cultural Change*, vol. 71, no. 2 (Chicago: Jan. 2023). The author notes that the Dodd-Frank Act directed the SEC to issue a rule requiring certain companies to disclose whether conflict minerals used in their products originated in the DRC or adjoining countries and, if so, to conduct due diligence to determine any supply chain links to armed groups.

⁵⁰Specifically, the study found a reduction of 42 to 51 percent in the number of workers at tantalum, tin, and tungsten mines visited by the International Peace Information Service from 2009 through 2017. See Bloem, “Good Intentions Gone Bad?”

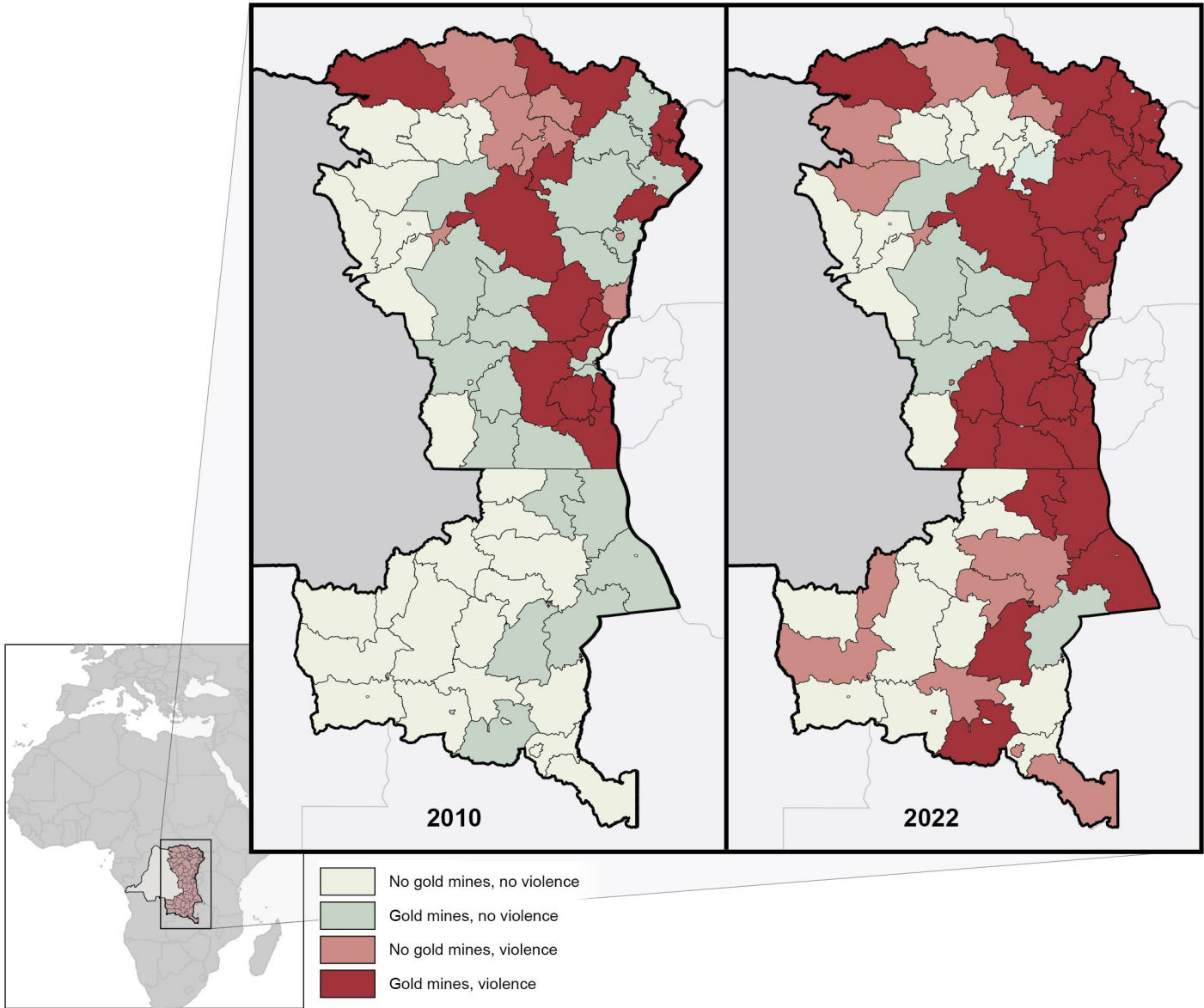
⁵¹Dominic P. Parker and Bryan Vadheim, “Resource Cursed or Policy Cursed? U.S. Regulation of Conflict Minerals and Violence in the Congo,” *Journal of the Association of Environmental and Resource Economists*, vol. 4, no. 1 (March 2017). Although we did not examine the same outcomes (i.e., battles, looting, and violence against civilians), we used the same methodology and examined a longer time period.

by the SEC rule.⁵² We found that violence spread primarily to these territories; we did not find a similar effect in territories containing ASM sites for tantalum, tin, or tungsten.⁵³ Figure 4 shows territories where violent events occurred around ASM sites for gold in eastern DRC in 2010 and 2022.

⁵²We followed related empirical literature by defining the territories that were likely to be most affected by the rule—that is, the treated territories—as those in Maniema, North Kivu, and South Kivu Provinces where the President of the DRC announced a ban on mining from September 2010 until March 2011 and those containing at least one mine with geocoordinates within State’s 2011 map of conflict mining zones. For treated territories, each additional gold mine was associated with an additional 0.1 to 0.2 percent increase in the likelihood of any monthly violent event occurring. For the average treated territory with gold mines, this represented a 43 to 95 percent increase in the likelihood of any monthly violent event compared with the average for July 2004 through June 2010. Some iterations of our analysis also found that the SEC disclosure rule was associated with an increase in the number of violent events in treated territories with gold mines. Appendix II provides detailed results of our analysis.

⁵³Our analysis generally did not find reduced violence in territories with tantalum, tin, and tungsten mines. However, comparing treated territories with and without tantalum, tin, and tungsten mines, we found reduced violence in the territories with the smallest and largest number of mines, as measured by the first and fourth quartile of tantalum, tin, and tungsten mines. Appendix II summarizes this analysis in more detail.

Figure 4: Eastern DRC Territories Where Violent Events Occurred around Artisanal Gold Mines in 2010 and 2022



Legend: DRC = Democratic Republic of the Congo.

Sources: GAO, based on United Nations map and analysis of data from the Armed Conflict Location & Event Data and the International Peace Information Service. | GAO-25-107018

Accessible Data for Figure 4: Eastern DRC Territories Where Violent Events Occurred around Artisanal Gold Mines in 2010 and 2022

Territory	2010	2022	Map ID Number
Aba	no gold, no violence	no gold, no violence	1
Aketi	no gold, no violence	no gold, violence	2
Ango	no gold, violence	no gold, violence	3
Ariwara	no gold, no violence	no gold, no violence	4

Letter

Territory	2010	2022	Map ID Number
Aru	gold, violence	gold, violence	5
Bafwasende	gold, violence	gold, violence	6
Bambesa	no gold, no violence	no gold, no violence	8
Banalia	gold, no violence	gold, no violence	9
Baraka	no gold, no violence	no gold, no violence	12
Basoko	no gold, no violence	no gold, violence	14
Beni	no gold, violence	no gold, violence	17
Bondo	gold, violence	gold, violence	25
Bukama	no gold, no violence	no gold, no violence	29
Bukavu	no gold, violence	no gold, violence	30
Bunia	no gold, no violence	no gold, violence	33
Buta	no gold, no violence	no gold, no violence	35
Butembo	gold, no violence	gold, violence	36
Dilolo	no gold, no violence	no gold, no violence	41
Dingila	no gold, no violence	no gold, no violence	43
Djugu	gold, no violence	gold, violence	45
Dungu	gold, violence	gold, violence	46
Faradje	gold, no violence	gold, violence	47
Fizi	gold, violence	gold, violence	49
Goma	no gold, violence	no gold, violence	52
Idjwi	no gold, no violence	no gold, no violence	55
Ingbokolo	no gold, no violence	no gold, no violence	58
Irumu	gold, violence	gold, violence	62
Isangi	no gold, no violence	no gold, no violence	63
Isiro	no gold, no violence	no gold, no violence	64
Kabalo	no gold, no violence	no gold, no violence	65
Kabambare	gold, no violence	gold, violence	66
Kabare	gold, no violence	gold, violence	67
Kabongo	no gold, no violence	no gold, no violence	70
Kailo	gold, no violence	gold, no violence	72
Kalehe	gold, violence	gold, violence	73
Kalemie	gold, no violence	gold, violence	74
Kalima	no gold, no violence	no gold, no violence	75
Kambove	gold, no violence	gold, violence	76
Kamina	no gold, no violence	no gold, no violence	78
Kamituga	gold, no violence	gold, no violence	79
Kaniama	no gold, no violence	no gold, violence	82
Kaoze	no gold, no violence	no gold, violence	83
Kapanga	no gold, no violence	no gold, no violence	84
Kasaji	no gold, no violence	no gold, no violence	85
Kasenga	no gold, no violence	no gold, no violence	87

Letter

Territory	2010	2022	Map ID Number
Kasongo	gold, no violence	gold, violence	88
Kibombo	no gold, no violence	no gold, no violence	94
Kindu	no gold, no violence	no gold, violence	97
Kipushi	no gold, no violence	no gold, no violence	99
Kisangani	no gold, violence	no gold, violence	101
Kolwezi	no gold, no violence	no gold, violence	103
Kongolo	no gold, no violence	no gold, no violence	104
Likasi	no gold, no violence	no gold, no violence	109
Lubero	gold, no violence	gold, violence	115
Lubudi	no gold, no violence	no gold, violence	116
Lubumbashi	no gold, no violence	no gold, violence	117
Lubutu	gold, no violence	gold, no violence	118
Mahagi	gold, violence	gold, violence	129
Malemba-Nkulu	no gold, no violence	no gold, violence	131
Mambasa	gold, no violence	gold, violence	132
Manono	no gold, no violence	no gold, violence	134
Masisi	gold, violence	gold, violence	136
Mitwaba	gold, no violence	gold, violence	142
Moba	gold, no violence	gold, violence	144
Mongwalu	gold, no violence	gold, no violence	146
Mutshatsha	no gold, no violence	no gold, no violence	149
Mwenga	gold, violence	gold, violence	152
Namoya	no gold, no violence	no gold, no violence	153
Niangara	no gold, violence	no gold, violence	155
Nyiragongo	no gold, no violence	no gold, violence	157
Nyunzu	gold, no violence	gold, violence	158
Oicha	Gold, no violence	Gold, violence	159
Opala	no gold, no violence	no gold, no violence	160
Pangi	gold, no violence	gold, violence	162
Poko	no gold, violence	no gold, no violence	163
Punia	gold, no violence	gold, no violence	165
Pweto	gold, no violence	gold, no violence	166
Rungu	no gold, violence	no gold, no violence	167
Rutshuru	no gold, violence	no gold, violence	168
Sakania	no gold, no violence	no gold, violence	169
Sandoa	no gold, no violence	no gold, violence	170
Shabunda	gold, violence	gold, violence	172
Ubundu	gold, no violence	gold, no violence	179
Uvira	gold, violence	gold, violence	180
Walikale	gold, violence	gold, violence	181
Walungu	gold, no violence	gold, violence	182

Territory	2010	2022	Map ID Number
Wamba	gold, violence	gold, no violence	183
Watsa	gold, no violence	gold, violence	184
Yahuma	no gold, no violence	no gold, no violence	185
Yangambi	no gold, no violence	no gold, no violence	187

Sources: GAO, based on United Nations map and analysis of data from the Armed Conflict Location & Event Data and the International Peace Information Service. | GAO-25-107018

Note: We examined violent events in eastern DRC’s second-level administrative units, which consist of territories and cities. For the purposes of this report, we refer to these administrative units collectively as territories.

The results of our analysis are consistent with other academic research. For example:

- Studies published in 2017 and 2023 found that the likelihood of battles and of the presence of armed groups may have shifted away from tantalum, tin, and tungsten mines to other types of mineral mines, including gold, as a result of the Dodd-Frank Act’s requirement that SEC promulgate the conflict minerals disclosure rule.⁵⁴ The studies suggest that the act may have led to more violence around gold mines than around tantalum, tin, and tungsten mines because (1) the majority of gold mined in the DRC supplies jewelry markets in the Middle East and Asia, which are not covered by the SEC disclosure rule, and (2) gold is more difficult to trace back to mines controlled by armed groups because it is easier to melt and separate from the surrounding rock. In contrast, tantalum, tin, and tungsten are extracted with additional rock that can help identify their origins. The studies posit that because of these factors, armed groups looking to maximize their revenue moved away from tantalum, tin, and tungsten mining areas to compete over gold mining areas, thus increasing conflict.
- Another study, published in 2018, found that the Dodd-Frank Act increased battles, looting, and violence against civilians in territories with an average number of gold mines.⁵⁵ The study posits that when armed groups moved toward gold mining areas, they may have also looted and committed violence against civilians in those areas.

State reported in a 2017 cable that due diligence and traceability schemes resulting from the SEC disclosure rule led to reforms that reduced armed groups’ presence and overall criminal activity around tantalum, tin, and tungsten mining sites.⁵⁶ However, according to the cable, conflict did not decrease around gold mining sites.⁵⁷ Similarly, as we reported in 2022, armed groups have had fewer opportunities to benefit from illegal involvement in mining tantalum, tin, and tungsten as due diligence and traceability schemes for these minerals have expanded to more sites, according to the UN Group of Experts. This expansion of due diligence and traceability schemes for tantalum, tin, and tungsten has often led to measures at these sites to prove that the

⁵⁴Parker and Vadheim, “Resource Cursed or Policy Cursed?”; Bloem, “Good Intentions Gone Bad?” A 2024 study found that after companies began filing conflict minerals disclosures with SEC in 2014, the probability of conflict’s occurring in a territory with the average number of ASM sites for tantalum, tin, and tungsten decreased, while the probability of conflict’s occurring in a territory with the average number of ASM sites for gold increased. Bok Baik et al., “The Real Effects of Supply Chain Transparency Regulation: Evidence from Section 1502 of the Dodd–Frank Act,” *Journal of Accounting Research*, vol. 62, no. 2 (May 2024).

⁵⁵Nik Stoop, Marijke Verpooten, and Peter van der Windt, “More Legislation, More Violence? The Impact of Dodd-Frank in the DRC,” *PLoS ONE* (Aug. 9, 2018).

⁵⁶A traceability scheme uses documentation, such as identification tags attached to bags of minerals, to verify the origin of minerals and generate a chain of custody from a mine to smelters and refiners. See [GAO-22-105411](#).

⁵⁷SEC officials said the agency has not evaluated the rule’s effectiveness in promoting peace and security in the DRC and adjoining countries because the agency’s role was to promulgate the rule and administer its requirements.

minerals produced are free from armed group interference. However, armed groups have continued to interfere in the mining and trade of gold, according to experts we interviewed in 2022 and the UN Group of Experts.

Security improved around tantalum, tin, and tungsten mines in part because some ASM sites were industrialized following the SEC disclosure rule, according to a conflict minerals expert.⁵⁸ Citing the examples of an industrial gold mine and an industrial tin mine, the expert explained that the armed groups left the areas when these mines became industrialized, which improved public security. A 2019 study found that the expansion of industrial mines reduced the number of battles among armed groups.⁵⁹ To protect their investments from armed groups, industrial mining companies tend to maintain strong security apparatuses, supported by FARDC and mining police. Figure 5 shows an industrial tin mine in the DRC.

Figure 5: Industrial Tin Mine in the DRC



Legend: DRC = Democratic Republic of the Congo.
Source: Alphamin. | GAO-25-107018

Violence in Countries Adjoining DRC Was Likely Not Affected by SEC Disclosure Rule

We conducted a separate statistical analysis, using data on violent events from January 2004 through August 2015, and found that the number of violent events in the countries adjoining the DRC likely did not change in response to the SEC disclosure rule.⁶⁰ Although ASM sites for tantalum, tin, tungsten, and gold, as well as armed groups and conflict, are largely concentrated in eastern DRC, the disclosure rule also addresses conflict minerals sourced from the adjoining countries. Thus, we assessed the rule's effect on violence in Angola,

⁵⁸Industrial mining is undertaken by a corporate entity on a formally recognized mineral claim, generally using capital-intensive technology and advanced machinery and equipment.

⁵⁹Nik Stoop, Marijke Verpooten, and Peter van der Windt, "Artisanal or Industrial Conflict Minerals? Evidence from Eastern Congo," *World Development*, vol. 122 (2019): 660–674.

⁶⁰We used a synthetic control model, which created a data-driven, artificial control country representing each adjoining country's counterfactual experience without the SEC disclosure rule from August 2010 through August 2015. We compared the number of violent events that occurred during the 5 years after the Dodd-Frank Act's enactment in July 2010 with the number of violent events that would have occurred without the SEC disclosure rule. We ended our analysis with 2015, after 5 years, because the quality of the synthetic control degrades over time, becoming less reliable. However, we found a similar result when we extended the time period to December 2022. See appendix III for additional details of our analysis, including its limitations.

Burundi, the Central African Republic, the Republic of the Congo, Rwanda, Tanzania, Uganda, and Zambia.⁶¹ Our analysis showed that changes in levels of violence in these countries were similar to changes in other low-income and lower-middle-income countries where the SEC disclosure rule does not apply.⁶²

Factors Besides Minerals Contribute to Conflict in Eastern DRC

Armed Groups Finance Violent Activities through Various Sources besides Conflict Minerals

Although SEC, in promulgating the disclosure rule, stated that Congress intended for the rule to reduce funding for armed groups in eastern DRC, these groups continue to finance violent activities through a variety of sources, according to experts and UN Group of Experts reports. The reports note that some armed groups continue to benefit from the trade of conflict minerals. For instance, armed groups may tax mine access as well as the mined minerals. A 2023 report from the International Peace Information Service found that armed groups were present at 29 percent of mines and that 42 percent of miners worked under armed group interference.⁶³ Armed groups, FARDC units, or armed criminal networks interfered at 55 percent of ASM sites for gold and 35 percent of ASM sites for tantalum, tin, and tungsten, according to the report.

In December 2023, the UN Group of Experts reported that armed groups were involved in the mining and trade of tantalum, tin, and tungsten in North Kivu Province.⁶⁴ For instance, the report stated that armed groups may charge diggers daily fees for access to mines and “security” and may require traders and pit managers to pay monthly fees.⁶⁵ The minerals are then smuggled to Rwanda or laundered into the official supply chain, according to the report.

However, armed groups also obtain funding from sources other than conflict minerals. As a conflict minerals expert explained, the absence of minerals would not end conflict in eastern DRC, because these groups would find other ways to finance their activities. Experts we interviewed for our 2022 report said that armed groups are adaptable in finding ways to fund their activities and that the groups weigh costs and feasibility when considering various revenue sources.⁶⁶

⁶¹We did not examine the effect of the SEC disclosure rule on violent events in Sudan or South Sudan, because Sudan’s boundaries changed in 2011 when South Sudan gained its independence.

⁶²We first calculated the estimated effect for each adjoining country by using synthetic control counterfactuals. We then gauged the relative importance of these estimated effects by comparing the estimated effects for the adjoining countries with those from the global set of low-income and lower-middle-income countries. Appendix III summarizes this analysis in more detail.

⁶³The International Peace Information Service visited 829 mines in eastern DRC from January 2021 to April 2023. These mines employed an estimated 132,320 miners. The organization has found that the armed groups and FARDC tend to prey on the most productive and less accessible mines. International Peace Information Service, *Analysis of the Interactive Map of Artisanal Mining Areas in Eastern Democratic Republic of the Congo 2023 Update* (Antwerp: July 2023).

⁶⁴UN Group of Experts, *Midterm Report of the Group of Experts on the Democratic Republic of the Congo* (2023).

⁶⁵A MONUSCO official said that armed groups have been known to execute miners who refuse to pay these illicit taxes. The UN Group of Experts reported in 2023 that these fees were estimated to generate, with at least 100 diggers per mine, a monthly total of at least \$15,000 to \$20,000 for the armed groups. UN Group of Experts, *Midterm Report of the Group of Experts on the Democratic Republic of the Congo* (2023).

⁶⁶[GAO-22-105411](#).

Many armed groups raise funds through extortion unrelated to conflict minerals—that is, by taxing economic activities or transit in areas under their control, according to experts. For example, M23 taxes households, goods, and agricultural crops, either in cash or in kind, in areas it controls, according to a UN Group of Experts report.⁶⁷ Armed groups may erect roadblocks to charge for the safe passage of goods and people (see fig. 6). The UN Group of Experts reported in December 2022 that M23 earned an average of \$27,000 per month through taxes imposed on pedestrians with goods leaving the DRC at a Ugandan border crossing.⁶⁸ As we reported in 2022, armed groups may also extort “protection” fees for providing security services for communities or for businesses involved in illegal trading, according to experts.

Figure 6: People Waiting to Pass Roadblock in North Kivu Province, DRC, in 2018



Legend: DRC = Democratic Republic of the Congo.
Source: International Peace Information Service. | GAO-25-107018

Further, armed groups raise revenue by exploiting natural resources besides conflict minerals, according to the UN Group of Experts. Reports published by the UN group have noted that some armed groups raise funds through the trade or control of wildlife products, coal, timber, and agricultural goods. Armed groups may also raise funds through looting, kidnapping for ransom, and other acts of criminality and banditry, according to experts we interviewed in 2022.

Various Interdependent Factors Contribute to Violence in Eastern DRC

Various interdependent factors described in our 2022 report—natural resource exploitation, influence from adjoining countries, ethnic tensions, weak governance, corruption, and economic pressures—continue contributing to violent conflict in eastern DRC, according to experts we interviewed.⁶⁹ These factors’ dynamics and interaction, their roles, and their relative significance vary depending on the area, according to State

⁶⁷UN Group of Experts, *Midterm Report of the Group of Experts on the Democratic Republic of the Congo*, S/2022/967 (Dec. 16, 2022).

⁶⁸UN Group of Experts, *Midterm Report of the Group of Experts on the Democratic Republic of the Congo* (2022).

⁶⁹[GAO-22-105411](#).

officials. Given the complexity and entrenched nature of conflict in eastern DRC, experts said they would not expect the SEC disclosure rule alone to meaningfully reduce violence.

Natural Resource Exploitation

Competition for land and other natural resources continues to aggravate conflict significantly in eastern DRC, according to experts we interviewed for this report.⁷⁰ As a Congolese researcher explained for our 2022 report, armed groups and military and political elites fight for control over territory to benefit from its natural resources.⁷¹ The desire to control land and other natural resources can intertwine with ethnic tensions, influence from adjoining countries, and lack of other economic opportunities.

However, minerals do not primarily drive conflict in eastern DRC; rather, natural resources, including conflict minerals, provide revenue that sustains conflict, according to experts we interviewed. As we reported in 2010, the minerals trade is not the root cause but one of several factors perpetuating conflict in eastern DRC by providing resources to armed groups.⁷² In that report, we noted that some research suggests resource exploitation is a consequence of violent conflict, rather than its cause, and may result from the breakdown of the rule of law. Further, experts told us that armed groups often form because of grievances rather than a desire to control and benefit from minerals.

Influence from Adjoining Countries

Influence from adjoining countries, particularly Burundi, Rwanda, and Uganda, continues to exacerbate conflict in eastern DRC, according to experts we interviewed. Such influence can be linked to national security concerns, geopolitical aims, economic interests, and ethnic solidarity.

Some armed groups operating in eastern DRC emerged in opposition to the governments of Burundi, Rwanda, and Uganda—notably, Resistance for Rule of Law in Burundi-Tabara (RED-Tabara), National Liberation Forces (FNL), FDLR, and ADF.⁷³ In response, these countries have conducted military incursions into eastern DRC, some without the consent of the DRC government, according to experts. In late 2021, the Ugandan and Congolese militaries began joint operations against ADF.⁷⁴ In August 2022, the Burundian and Congolese militaries also began joint operations against RED-Tabara and FNL.

⁷⁰Issues concerning land ownership, access, and use contribute to conflict, according to USAID's 2021 DRC conflict assessment. The assessment notes that land disputes are often intertwined with ethnic tensions because of the lack of official documentation and the predominance of customary law over statutory law. See International Business and Technical Consultants, Inc., *USAID/DRC Conflict Assessment*, a report prepared at the request of the U.S. Agency for International Development (Feb. 5, 2021).

⁷¹[GAO-22-105411](#).

⁷²GAO, *The Democratic Republic of the Congo: U.S. Agencies Should Take Further Actions to Contribute to the Effective Regulation and Control of the Minerals Trade in Eastern Democratic Republic of the Congo*, [GAO-10-1030](#) (Washington, D.C.: Sept. 30, 2010).

⁷³Some sources refer to FNL as the National Liberation Front.

⁷⁴In response to the Ugandan military's pursuit, ADF has moved westward, further into the DRC, and ADF leadership decided to reduce attacks in the DRC and focus on attacks in Uganda, according to a December 2023 UN Group of Experts report.

The Rwandan military has provided material, operational, and logistical support to M23 as well as conducted operations in the DRC, State reported on the basis of information provided by the UN Group of Experts.⁷⁵ According to State officials, M23 would fail without Rwanda's support. Experts associated Rwanda's support for M23 with factors such as natural resource exploitation and competition with other adjoining countries, especially Uganda.

- **Natural resource exploitation.** A mining belt with one of the world's major sources of tantalum is located in the DRC along its borders with Rwanda and Uganda. During the wars in the 1990s, the Ugandan and Rwandan militaries entered eastern DRC and seized control of mines to channel profits back to their countries, according to the U.S. Institute of Peace. Rwanda, Uganda, and, to a lesser extent, Burundi are the main conduits for smuggled gold from the DRC, while Rwanda has historically been the main exporter of smuggled Congolese tantalum, tin, and tungsten, according to the International Peace Information Service.
- **Geopolitical competition.** Experts said Rwanda may feel threatened by the developing Uganda–DRC relationship. For instance, the joint Uganda–DRC military operation against the ADF, together with a project to rehabilitate roads connecting the DRC and Uganda, has strained regional dynamics, according to the UN Group of Experts. In addition, the recent involvement of the Burundian military in the fight against M23 and the Rwandan military has exacerbated tensions between Rwanda and Burundi, according to the June 2024 UN Group of Experts report.⁷⁶

Ethnic Tensions

Tensions between various ethnic groups also continue to contribute to violence in the region, especially when combined with economic pressures and influence from adjoining countries, according to experts. For example:

- Tensions between ethnic Hutus and Tutsis continue to contribute to conflict in the DRC. After Rwanda's 1994 genocide, approximately 1 million Rwandans migrated into the DRC's eastern region, including Hutu elements that had participated in the genocide's planning and execution. According to UN and State officials, Rwanda perceives the DRC as having provided a safe haven for the FDLR and for original Hutu perpetrators of the genocide.
- Ethnic Lendus and Hemas fought in the Second Congo War, and tensions between them have also continued, according to the International Crisis Group. The armed group CODECO, which was formed from Lendu militias, has targeted Hema communities, according to the International Peace Information Service. However, experts have also attributed conflict between the Lendu and Hema communities in the northern part of DRC's Ituri Province to competition for land and resources rather than ethnic tensions.

Ethnicity-based rhetoric by leaders and the media can exacerbate conflict in eastern DRC. For example, in its 2023 Human Rights Report for the DRC, State observed that media reports of Rwanda's support for M23 have

⁷⁵Department of State, Bureau of Democracy, Human Rights, and Labor, *2023 Country Reports on Human Rights Practices: Democratic Republic of the Congo* (Washington, D.C.: Apr. 22, 2024). In response to ongoing conflict, the East African Community announced it would deploy a regional force to eastern DRC to, among other things, support FARDC against armed groups. This force was deployed from November 2022 through December 2023, according to the UN Group of Experts. In December 2023, the Southern African Development Community announced it would deploy a regional force to do the same.

⁷⁶UN Group of Experts, *Final Report of the UN Group of Experts on the Democratic Republic of the Congo*, S/2024/432 (June 4, 2024).

contributed to violence and discrimination against DRC populations thought to have Rwandan origins and against those perceived to support Rwanda or M23.⁷⁷

Weak Governance

Experts we interviewed said that weak governance, often combined with corruption, continues to contribute to conflict. In 2022, we reported that the inability of weak and ineffective DRC government institutions to address citizens' grievances or negotiate access to resources, such as land, minerals, and local power, often leads to conflict, according to experts.⁷⁸ State's 2022 Integrated Country Strategy for the DRC notes that "decades of poor governance and elite predation have destroyed civic trust." State officials told us that the DRC's difficult business environment, combined with a weak judiciary, can impede investment and economic growth that could help alleviate citizens' economic pressures.

State's 2022 Integrated Country Strategy for the DRC also notes that the government's security forces, including FARDC and the national police, are generally ineffective. State officials told us that FARDC has little control over eastern DRC and lacks the capacity to create and implement a strategy to defeat M23 and other armed groups.

Corruption

Corruption continues to contribute to conflict in the DRC, according to experts. In January 2024, Transparency International reported that over the past 5 years, the General Inspectorate of Finance had uncovered numerous cases of mismanagement of public funds. A UN official explained that such corruption can impede the country's development, as public resources are captured by elites. However, public corruption cases either have not resulted in sanctions or have been overturned, according to State officials.

As we reported in 2022, some FARDC elements behave similarly to armed groups by charging illegal taxes and illegally exploiting natural resources, including gold, according to the UN Group of Experts.⁷⁹ The International Peace Information Service has found that FARDC units are the armed actors most often interfere in the mining sector and operate roadblocks.⁸⁰ A UN official observed that most FARDC soldiers are young, untrained, poorly paid, and poorly fed and that well-trained, well-equipped, well-paid forces would likely be less corrupt.

Economic Pressures

Economic pressures stemming from the region's poverty and unemployment also continue to contribute to conflict. As we reported in 2022, legitimate economic activity and employment opportunities in eastern DRC are generally lacking apart from the mining industry.⁸¹ High unemployment leads to increased recruitment by

⁷⁷Department of State, *2023 Country Reports on Human Rights Practices: Democratic Republic of the Congo*.

⁷⁸GAO-22-105411.

⁷⁹GAO-22-105411.

⁸⁰International Peace Information Service. *Analysis of the Interactive Map of Artisanal Mining Areas in Eastern Democratic Republic of Congo 2023 Update*.

⁸¹GAO-22-105411.

armed groups, according to a MONUSCO official. For example, the UN Group of Experts reported in December 2022 that M23 recruitment tactics have included promises of employment.⁸² Further, a USAID official said that disarmament, demobilization, and reintegration processes have failed to provide employment opportunities to former combatants. Without employment, former combatants may be more likely to return to armed groups.

SEC Disclosure Rule Has Encouraged Transparency, but Efforts to Trace Minerals' Origins Face Significant Obstacles

SEC Disclosure Rule Has Encouraged Companies to Improve Due Diligence and Transparency about Minerals' Sources

The SEC disclosure rule has encouraged responsible sourcing efforts overall, according to industry stakeholders. Stakeholders said that the rule has raised awareness about minerals' origins by requiring end-user companies to better understand their supply chains and conduct due diligence, especially when sourcing from conflict-affected and high-risk areas. An industry stakeholder explained that the rule has helped make companies aware that their supply chains can affect conditions on the ground. Some companies report on their efforts to responsibly source nonconflict minerals because the SEC disclosure rule has raised public awareness about responsible sourcing in general and the companies want to respond to their customers' concerns, according to industry stakeholders.

Moreover, industry stakeholders and conflict minerals experts told us that the SEC disclosure rule has raised international awareness about the risks of minerals' benefiting armed groups and contributing to conflict in the DRC. A UN official said that the SEC rule and the publicity surrounding it has helped bring attention to the problem of conflict minerals in the DRC. DRC government officials we interviewed in Kinshasa expressed appreciation for the rule's effect in drawing attention to conflict in the DRC and minerals' role in the conflict.

In response to concerns about conflict minerals, industry associations and others have developed traceability schemes to track the minerals' chain of custody. A 2020 report examining the effects of these schemes on mining communities found that households in areas where such schemes operated reported less interference by undisciplined elements of FARDC.⁸³ Households in these areas also reported a greater presence, and more frequent activities, of state mining agents responsible for oversight, technical support, and taxation.

Incident reports from these traceability schemes can provide information about companies' supply chain risks, according to industry stakeholders. For instance, one organization that facilitates traceability efforts in the DRC, Rwanda, and Burundi reported identifying, in a single year, 1,613 alleged incidents related to due diligence, chain of custody, corruption, security forces or armed groups, human rights, or health and safety. The organization categorized 159 of these incidents as highly serious, requiring immediate attention and possible disengagement.

⁸²UN Group of Experts, *Midterm Report of the Group of Experts on the Democratic Republic of the Congo* (2022).

⁸³The 2020 report also noted that the households in these areas did not report feeling more secure, despite the withdrawal of the military and influx of state agents and mining police. Project on Resources and Governance et al., *Evaluating Due Diligence Programs for Conflict Minerals: A Matched Analysis of 3T Mines in Eastern DRC* (Los Angeles and Antwerp: Nov. 2020).

According to the organization, incidents indicating supply chain risks include traceability or procedural issues related to establishing minerals' chain of custody, bribes that influence statements of minerals' origins, and illegal behavior by armed groups or state security officials. For example, the organization reported being informed by a DRC government agency that a Mai Mai armed group had fired shots around a mine and burnt the house of a mining police officer, kidnapped his wife and children, and stolen several motorcycles, allegedly demanding that the mining police leave the area. (Fig. 7 shows a mining police officer at a mine entrance in the DRC.)

Figure 7: Mining Police Officer at a Mine Entrance in the DRC



Legend: DRC = Democratic Republic of the Congo.
Source: International Peace Information Service. | GAO-25-107018

There are also indications that industry efforts have improved transparency about conflict minerals' sourcing. For example, in May 2024, an industry association, citing a UN Group of Experts report, alerted smelters in its assurance program and others about the risk of armed group interference in the minerals supply chain from the DRC and Rwanda. The industry association noted that, in accordance with international due diligence guidelines, any reasonable risks of direct or indirect support to armed groups through minerals sourcing necessitates mitigation efforts through disengagement.

Industry stakeholders explained that the SEC disclosure rule provides an incentive for companies to require compliance from their suppliers, including smelters and refiners, and to consider removing noncompliant suppliers from their supply chains. Some filing companies indicated in their disclosures that they may cease doing business with suppliers they believe pose a risk of supporting armed groups in the DRC or adjoining countries. In addition, some companies indicated that such provisions were included in their conflict minerals policies. However, representatives said that removing a supplier from a company's supply chain can be challenging and slow, particularly if the company is several tiers removed from the problematic supplier. As we reported in 2020, companies have indicated that identifying viable alternatives to problematic suppliers and can be difficult and establishing new relationships can be costly and time consuming to.⁸⁴

⁸⁴GAO, *Conflict Minerals: Actions Needed to Assess Progress Addressing Armed Groups' Exploitation of Minerals*, [GAO-20-595](#) (Washington, D.C.: Sept. 14, 2020).

Some companies may use their leverage to secure cooperation from suppliers and ensure that their mineral purchases do not provide financing to armed groups, according to company representatives we interviewed. They explained that the largest companies have the purchasing power needed for such leverage.

Efforts to Trace Origins of Conflict Minerals, Especially Gold, Face Obstacles That May Limit Efficacy

Efforts to trace the origins of conflict minerals, particularly gold, face implementation challenges associated with cost and smuggling that may limit the efforts' efficacy, according to experts and reports by nongovernmental organizations. Minerals from mine sites validated as "green" or "blue" through the International Conference on the Great Lakes Region's regional certification mechanism may be exported legally from the DRC and its adjoining countries, including Rwanda and Uganda, according to the mechanism's manual.⁸⁵ However, implementing this regional certification mechanism exceeds some countries' economic capacity, according to a DRC government official.⁸⁶

Experts we interviewed explained that validating mine sites as free of conflict or of interference from armed groups is time consuming and expensive. Many mines are located in remote, potentially insecure areas, and coordinating teams to visit and inspect them is difficult, according to experts. According to a DRC government official, inspection teams visited only about two-thirds of the country's ASM sites from 2017 through 2021, and arranging follow-up visits to observe conditions is onerous.⁸⁷ Moreover, training certification auditors is costly, according to the official.⁸⁸

Although traceability schemes exist for tantalum, tin, and tungsten, tracing chains of custody for gold—which is more portable, valuable, and fungible—is more difficult. Experts told us that these properties of gold, in addition to the DRC's high taxes and fees on gold relative to neighboring countries', incentivize smuggling. In 2021, IMPACT, a nongovernmental organization, estimated the cost—including the official 3.5 percent export tax—of legally exporting and internationally transporting gold sourced from ASM sites in the DRC at 12 percent or 19

⁸⁵The International Conference on the Great Lakes Region is an intergovernmental organization with 12 member states—Angola, Burundi, Central African Republic, Democratic Republic of the Congo, Kenya, Republic of Congo, Rwanda, South Sudan, Sudan, Tanzania, Uganda, and Zambia. The conference's regional certification mechanism uses a color-based validation scheme, in which a "green" mine meets all standards (i.e., no conflict or child labor) and can produce minerals for certified export. A "yellow" mine has infractions of one or more important criteria but can produce minerals for certified export; the mine operator has 6 months to resolve the infractions. A "red" (uncertified) mine has grave infractions of one or more critical criteria and remains red until a further inspection shows the infractions to have been resolved. A red mine is prohibited from producing minerals for a minimum of 6 months. In 2019, the conference added "blue" to its validation scheme. A "blue" mine can produce minerals for certified export if the exporter has conducted an on-the-ground risk assessment that finds the mine meets all standards, publishes this risk assessment publicly, and shares it with the member state's government and the conference's secretariat.

⁸⁶DRC government officials told us the DRC was the only country in the International Conference to trace minerals from mine to export and noted their concerns that other Conference members were not taking sufficient actions to fully implement traceability programs.

⁸⁷A green mine must be recertified as such annually. Yellow mines should be re-inspected within 6 months. Blue mines can retain their status for 3 years.

⁸⁸USAID's Sustainable Mine Site Validation project aimed to strengthen methods to validate ASM tantalum, tin, tungsten, and gold sites as conflict-free by, among other things, building the capacity of DRC Ministry of Mines personnel, including training mine inspectors.

percent of the exports' value, depending on the province from which it is exported.⁸⁹ Although the DRC's tax structure may appear to align or compete with those of adjoining countries, legal gold exports from the DRC are subject to additional provincial-level taxes and fees, according to IMPACT.⁹⁰

The illicit gold trade is estimated to generate more than a billion dollars annually, according to USAID. In 2019, the UN Group of Experts reported that most gold from ASM sites was smuggled out of the DRC through neighboring countries, usually destined for Dubai, United Arab Emirates.⁹¹ In 2017, we reported that, according to USAID and UN reports and experts, gold illegally mined in or exported from the DRC can enter the official supply chain when unregistered local traders or exporters sell it to regional buyers in Burundi, Rwanda, or Uganda or global buyers in Dubai.⁹² As we also reported in 2017, some factors that contribute to smuggling include corruption, inadequate infrastructure, and limited government control over the remote areas where gold from ASM sites is primarily produced, according to reports and DRC government officials. Figure 8 illustrates the official and unofficial supply chains for gold from ASM sites in the DRC.

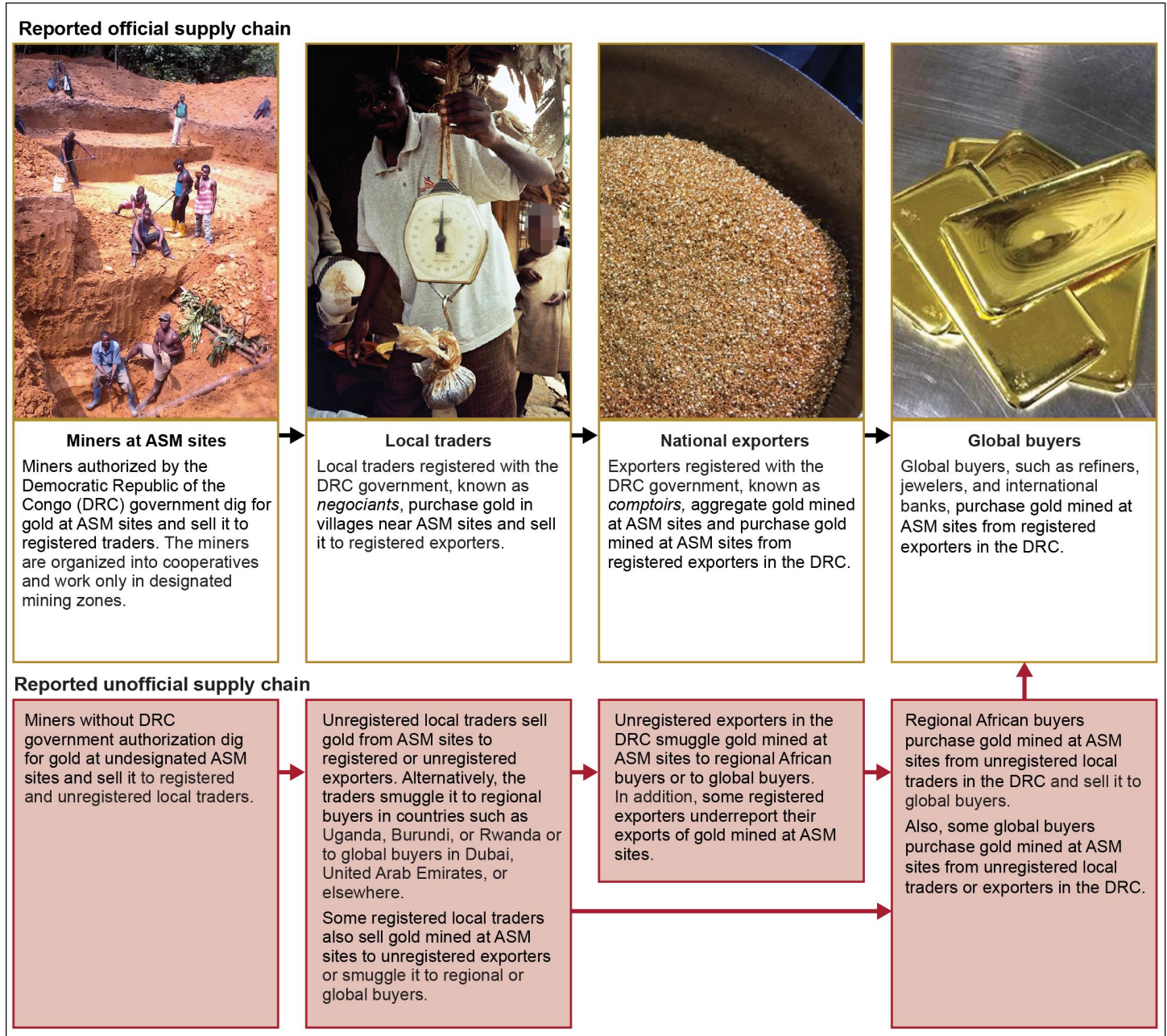
⁸⁹IMPACT based these estimates—generated by its Just Gold Project—on gold extracted and exported. The project found that export taxes for this gold totaled a maximum of 12 percent when exported from Ituri Province and 19 percent when exported from South Kivu Province. The project also found that the percentage of taxes, charges, and fees was related to the amount of gold being exported. An exporter of more gold incurs smaller taxes, charges, and fees per gram. IMPACT reported that exporters of industrially mined gold paid the official 3.5 percent per gram for export taxes, with no additional taxes or fees. However, IMPACT calculated that taxes, fees, and transport costs add 18 to 22 percent to the cost of exporting ASM gold from Ituri Province, making it more expensive than the global purchase price. IMPACT, *The Just Gold Project: Lessons for the Future of Artisanal Gold in the Democratic Republic of the Congo* (Ottawa: March 2021).

⁹⁰For example, according to IMPACT, Uganda charges a royalty on the value of the amount mined rather than an export tax. In 2017, Uganda eliminated this royalty on gold to encourage more gold producers to bring their gold to the country's largest refinery, according to IMPACT.

⁹¹UN Group of Experts, *Final Report of the Group of Experts on the Democratic Republic of the Congo*, S/2019/469 (June 2019). The DRC government and United Arab Emirates-based companies created Primera Gold with the aim of combatting fraud and smuggling in the ASM gold sector, according to the company's website. See Primera Gold DRC SA, "Welcome to Primera Gold DRC SA," accessed May 20, 2024, <https://primeragoldrdc.com>. The 25-year contract, signed in 2022, gives Primera Gold the right to export ASM gold from the DRC, with a preferential tax rate to make sales to the company more attractive, according to experts.

⁹²GAO, *Conflict Minerals: Information on Artisanal Mined Gold and Efforts to Encourage Responsible Sourcing in the Democratic Republic of the Congo*, GAO-17-733 (Washington, D.C.: Aug. 23, 2017). As we reported in 2017, USAID has worked with IMPACT, Tetra Tech, and the DRC government to implement a traceability scheme for ASM gold. More recently, USAID's Clean Gold project sought to scale up exports and sales of conflict-free ASM gold by developing market linkages between mining cooperatives and responsible gold supply chain actors.

Figure 8: Illustration of Reported Official and Unofficial Supply Chains for Gold from Artisanal and Small-Scale Mining (ASM) Sites in the DRC



Sources: GAO analysis of reports by U.S. agencies, the United Nations (UN), and nongovernmental and international organizations and of interviews with government and nongovernment stakeholders; photos by (left to right) International Peace Information Services (IPIS), IPIS, GAO, GAO. | GAO-25-107018

Notes: Stakeholders we interviewed included, among others, officials of the U.S. and DRC governments and the UN Group of Experts; representatives of international and nongovernmental organizations; and representatives of gold refineries, auditing firms, local traders, and jewelers in Dubai, United Arab Emirates.

“Official” refers to aspects of the supply chain where participants register or report to the DRC government. “Unofficial” refers to aspects of the supply chain where participants do not register or report to the DRC government.

Moreover, conflict minerals experts and industry stakeholders expressed concerns about the efficacy of traceability schemes—noting, for example, the persistence of problems such as fraud, corruption, and smuggling despite these schemes. Smugglers are able to circumvent traceability schemes, even those for tantalum, tin, and tungsten, according to experts. For example, the UN Group of Experts has reported evidence of smugglers’ fraudulently using documentation issued by traceability schemes to launder illicit material into the official supply.

In April 2022, Global Witness, an international nongovernmental organization, reported that the most widely used traceability scheme had permitted tantalum, tin, and tungsten from unvalidated mines, including some occupied by armed groups, to be tagged as coming from validated mines in North Kivu and South Kivu Provinces. In December 2023, the UN Group of Experts reported that due diligence for the tantalum, tin, and tungsten sectors in a territory in North Kivu Province had collapsed.⁹³ Armed groups widely interfered with the mining of these minerals, according to the report. In June 2024, the UN Group of Experts reported that armed groups, including M23, continued to control the minerals trade in this territory.⁹⁴ The report noted that some of these minerals were smuggled to Rwanda.⁹⁵

More Companies Filed Disclosures in 2023, but Many Were Unable to Determine Conflict Minerals’ Origins

Number of Companies Filing Conflict Minerals Disclosures Increased for First Time since 2014

The number of companies that filed conflict minerals disclosures in 2023 was higher than the number that filed in the previous year—the first time this had occurred since 2014, when companies began filing the disclosures in response to the SEC rule (see fig. 9). In 2023, 1,017 companies filed a conflict mineral disclosure with SEC—12 more than in 2022.⁹⁶

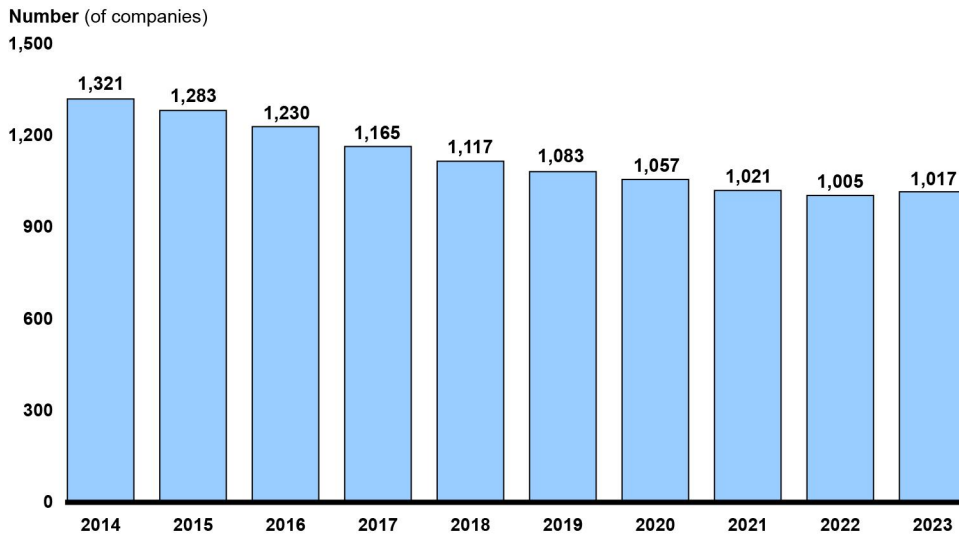
⁹³UN Group of Experts, *Midterm Report of the Group of Experts on the Democratic Republic of the Congo* (2023).

⁹⁴UN Group of Experts, *Final Report of the Group of Experts on the Democratic Republic of the Congo* (2024).

⁹⁵Rwanda recorded a 50 percent increase in tantalum exports in 2023 compared to 2022, according to the UN Group of Experts.

⁹⁶Each company submits a single Form SD annually about its sourcing of necessary conflict minerals.

Figure 9: Total Number of Companies That Filed Conflict Minerals Disclosures with Securities and Exchange Commission, 2014–2023



Source: GAO analysis of Securities and Exchange Commission filings. | GAO-25-107018

Accessible Data for Figure 9: Total Number of Companies That Filed Conflict Minerals Disclosures with Securities and Exchange Commission, 2014–2023

Year in which companies submitted filings	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Number of companies that filed a conflict minerals disclosure report	1,321	1,283	1,230	1,165	1,117	1,083	1,057	1,021	1,005	1,017

Source: GAO analysis of Securities and Exchange Commission filings. GAO-25-107018

As figure 9 shows, the number of annual filings dropped steadily during the first 9 years, from 1,321 in 2014 to 1,005 in 2022. According to SEC officials, the decrease in the number of disclosures may have resulted from a variety of factors, including corporate mergers and acquisitions, transitions from public to private corporate ownership, and changes in business practices by companies that had previously filed. The decrease in disclosures may also reflect some companies’ perception that they are unlikely to face enforcement action by SEC for noncompliance with the disclosure rule, according to industry stakeholders including a firm that services filing companies.⁹⁷

Percentage of Companies Reporting RCOI Determinations about Conflict Minerals’ Origins Has Risen Significantly

Our analysis of a generalizable sample of 100 disclosures filed in 2023 found that a significantly larger percentage of companies reported preliminary determinations, based on RCOIs, of their conflict minerals’ origins than in 2015.⁹⁸ Companies comply with the SEC disclosure rule by conducting an RCOI to determine

⁹⁷SEC staff previously told us that the commission could initiate enforcement action if companies do not report on their due diligence in accordance with the rule. See [GAO-23-106295](#).

⁹⁸We did not include 2014 in our analysis of past RCOI determinations because it was the first year in which SEC required companies to file conflict mineral disclosures and because the 2014 determinations differed substantially from those in subsequent years.

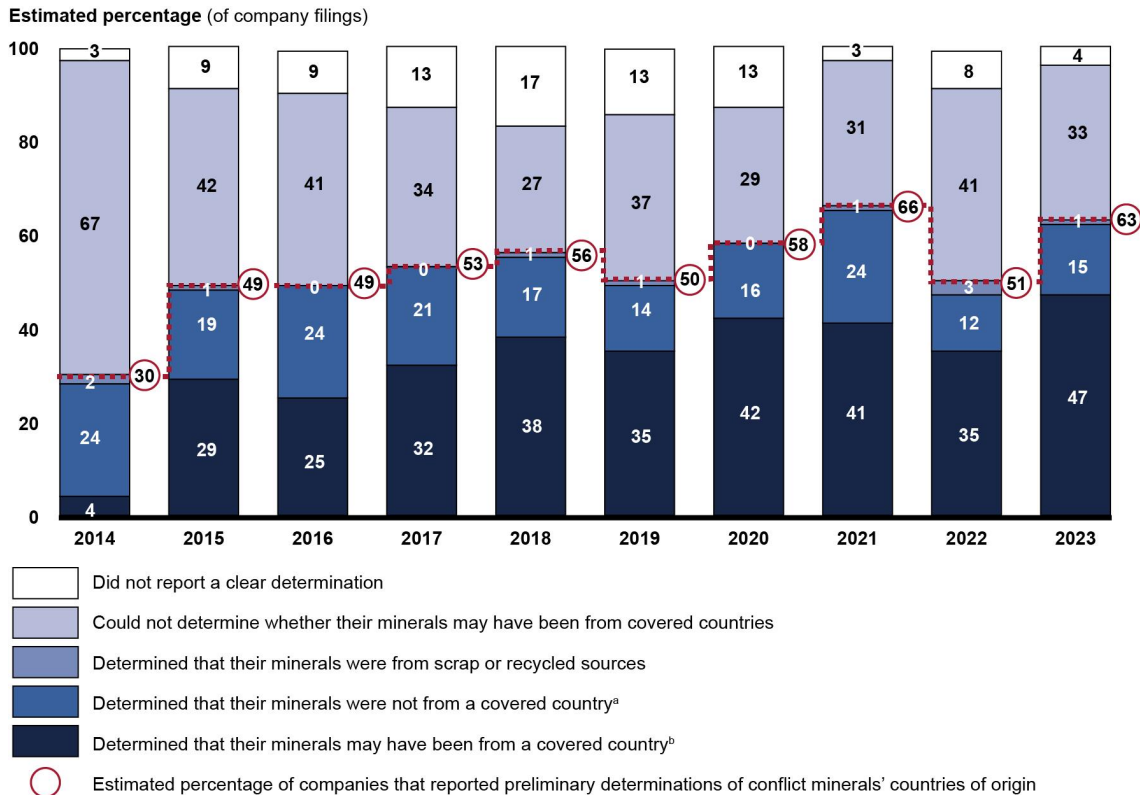
whether any of the conflict minerals in their products may have originated in covered countries and may not be from recycled or scrap sources. Although the rule does not prescribe an RCOI process, many companies described conducting RCOIs in similar ways. For example, one of the filings we reviewed stated that the company had asked its suppliers to collect information about the presence and sourcing of conflict minerals used in the products supplied. We found that an estimated 97 percent of companies reported conducting an RCOI in 2023.⁹⁹ This percentage is similar to the estimated percentages that have reported conducting an RCOI since companies began filing in 2014.

Of companies that filed disclosures in 2023, an estimated 63 percent reported preliminary determinations of their conflict minerals' origins after conducting an RCOI—14 percentage points higher than the percentage that reported such determinations in 2015. This statistically significant increase has been driven by an increase in the percentage of companies that preliminarily determined their conflict minerals may have originated from covered countries. The percentage of companies that preliminarily determined their conflict minerals were not from covered countries or were from scrap or recycled materials has remained generally consistent since 2015.¹⁰⁰ Figure 10 shows the percentages of companies that reported various determinations about their conflict minerals' sources after conducting RCOIs from 2014 through 2023.

⁹⁹Our review of a generalizable sample of 100 companies' 2023 disclosures found that an estimated 71 percent of companies reported using tin in their products, an estimated 68 percent reported using gold, an estimated 59 percent reported using tantalum, and an estimated 57 percent reported using tungsten. Some companies did not specify the conflict minerals they used.

¹⁰⁰Because we followed a probability procedure based on random selections, our annual sample is one of a large number of samples that we might have drawn. Since each sample could have provided different estimates, we express our confidence in the precision of our particular sample's results as a 95 percent confidence interval (e.g., plus or minus 10 percentage points). This interval would contain the actual population value for 95 percent of the samples we could have drawn. We expected that 5 percent of the confidence intervals from the samples in any particular year would not reflect the true percentage of companies making such a determination.

Figure 10: Estimated Percentages of Companies Reporting Various Determinations after Conducting “Reasonable Country-of-Origin Inquiries” about Conflict Minerals’ Sources, 2014–2023



Source: GAO analysis of U.S. Securities and Exchange Commission (SEC) filings. | GAO-25-107018

Accessible Data for Figure 10: Estimated Percentages of Companies Reporting Various Determinations after Conducting “Reasonable Country-of-Origin Inquiries” about Conflict Minerals’ Sources, 2014–2023

Year	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Determined that their minerals might have been from a covered country	4	29	25	32	38	35	42	41	35	47
Determined that their minerals were not from a covered country	24	19	24	21	17	14	16	24	12	15
Determined that their minerals were from scrap or recycled sources	2	1	0	0	1	1	0	1	3	1
Could not determine whether their minerals might have been from covered countries	67	42	41	34	27	36	29	31	41	33
Did not report a clear RCOI determination	2.5	9	9	13	17	14	13	3	8	4
Estimated percentage of companies that reported preliminary determinations of conflict minerals’ countries of origin	30	49	49	53	56	50	58	66	51	63

Source: GAO analysis of Securities and Exchange Commission filings. GAO-25-107018

Notes: To comply with the SEC’s conflict minerals disclosure rule, companies conduct a “reasonable country-of-origin inquiry” to preliminarily determine whether conflict minerals used in their products may have originated in covered countries—that is, the Democratic Republic of the Congo and adjoining countries—and may not be from recycled or scrap sources. 77 Fed. Reg. 56274 (Sept. 12, 2012). “Adjoining countries” is defined in section 1502 of the Dodd-Frank Wall Street Reform and Consumer Protection Act. Pub. L. No. 111-203, § 1502(e)(1), 124 Stat. 1376, 2217 (2010). For the purposes of the SEC disclosure rule, SEC refers to the DRC and its adjoining countries as “covered countries.”

Data shown are estimates with a margin of error of no more than plus or minus 10 percentage points at the 95 percent confidence level.

Percentages shown for each year may not sum to 100 because of rounding.

^aA determination that conflict minerals are not from a covered country means that the filing company determined either that (1) the conflict minerals in its products did not originate in a covered country or (2) it had no reason to believe the conflict minerals originated in a covered country.

^bA preliminary determination that conflict minerals may have been from a covered country means the company conducted a reasonable country-of-origin inquiry and determined that it knew or had reason to believe the conflict minerals in its products originated in a covered country.

Our analysis of disclosures filed by companies that conducted an RCOI in 2023 found the following:

- An estimated 47 percent of the companies reported having preliminarily determined that conflict minerals in their products may have come from covered countries.
- An estimated 33 percent of the companies reported that after conducting an RCOI, they were preliminarily unable to determine whether any of their conflict minerals may have originated in covered countries.
- An estimated 15 percent of the companies reported having determined that the conflict minerals in their products did not come from covered countries.
- An estimated 1 percent of the companies reported having determined that all conflict minerals in their products came from scrap or recycled sources.¹⁰¹

Most Companies That Performed Due Diligence in 2023 Could Not Determine Origin of Conflict Minerals

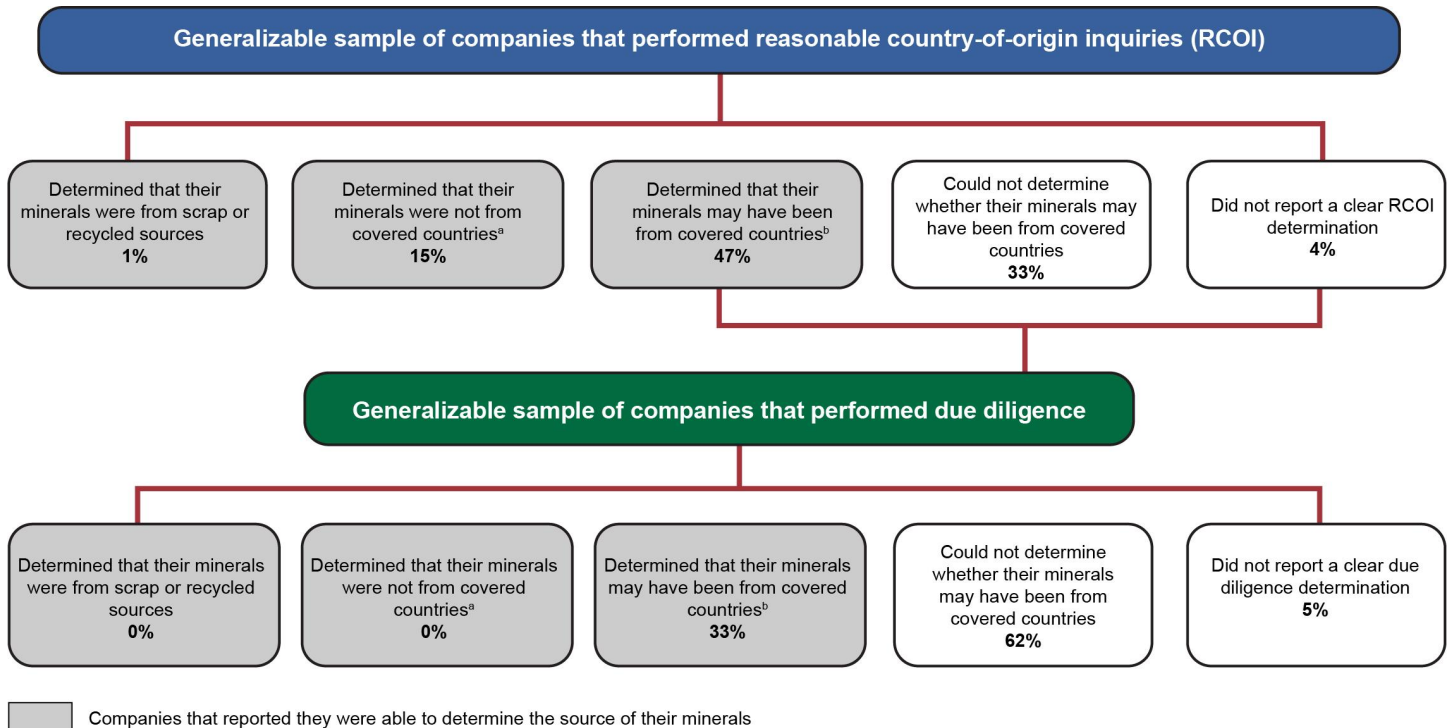
A majority of the companies that conducted due diligence to determine the source of their conflict minerals reported being unable to make such a determination. The SEC disclosure rule requires a company to exercise due diligence on the source and chain of custody of its conflict minerals and provide a conflict minerals report, if its RCOI gives reason to believe that any necessary conflict minerals may have originated from covered countries and may not have come from recycled or scrap sources. Our analysis of disclosures filed in 2023 found that an estimated 94 percent of the filing companies conducted due diligence after conducting an RCOI.¹⁰² This percentage is higher than the percentages that conducted due diligence in 2022 and 2021, although the differences are not statistically significant.

As figure 11 shows, our analysis determined that an estimated 62 percent of companies that conducted due diligence reported being ultimately unable to determine whether the conflict minerals in their products originated in covered countries. An estimated 33 percent of companies that conducted due diligence determined that their minerals may have originated in covered countries, and an estimated 5 percent did not clearly report a determination. None of the companies that conducted due diligence reported that their minerals were not from covered countries, and none reported that their minerals came from scrap or recycled sources.

¹⁰¹An estimated 4 percent of companies did not report a clear RCOI determination. According to SEC staff, companies that reported conducting due diligence are not required to report an RCOI determination. All companies in our sample that did not report a clear RCOI determination reported conducting due diligence.

¹⁰²We also found that an estimated 94 percent of the companies that conducted due diligence in 2023 reported using the Organisation for Economic Co-operation and Development's (OECD) due diligence framework. The framework includes five steps: (1) establish strong company management systems, (2) identify and assess risks in the supply chain, (3) design and implement a strategy to respond to identified risks, (4) carry out an independent third-party audit of smelters' and refiners' due diligence practices, and (5) report annually on supply chain due diligence. See Organisation for Economic Co-operation and Development, *OECD Due Diligence Guidance for Responsible Supply Chains of Minerals from Conflict-Affected and High-Risk Areas*, 3rd ed. (Paris: OECD Publishing, 2016).

Figure 11: Estimated Percentages of Companies Reporting Various Determinations of Conflict Minerals' Sources on the Basis of RCOIs and Due Diligence in 2023



Source: GAO analysis of U.S. Securities and Exchange Commission (SEC) filings submitted in 2023. | GAO-25-107018

Notes: To comply with the Securities and Exchange Commission's (SEC) conflict minerals disclosure rule, companies conduct a "reasonable country-of-origin inquiry" to preliminarily determine whether conflict minerals used in their products may have originated in covered countries—the Democratic Republic of the Congo and adjoining countries—and may not be from recycled or scrap sources. 77 Fed. Reg. 56274 (Sept. 12, 2012). "Adjoining countries" are defined in section 1502 of the Dodd-Frank Wall Street Reform and Consumer Protection Act. Pub. L. No. 111-203, § 1502(1), 124 Stat. 1376, 2217 (2010). For the purposes of the SEC disclosure rule, SEC refers to the DRC and its adjoining countries as "covered countries."

We randomly sampled 100 of the 1,017 Forms SD submitted in 2023 to create estimated results generalizable to the population of all companies that filed in response to the SEC disclosure rule. Data shown are estimates with a margin of error of no more than plus or minus 10 percentage points at the 95 percent confidence level. In addition to the data shown, an estimated 0 percent of companies that performed due diligence determined that their minerals were not from covered countries, and an estimated 0 percent reported that all of their conflict minerals were from scrap or recycled sources.

^aA determination that conflict minerals were not from a covered country means the company determined that (1) the conflict minerals in its products did not originate in a covered country or (2) it had no reason to believe the conflict minerals originated in a covered country.

^bA determination that conflict minerals may have been from a covered country means the company determined that it knew or had reason to believe the conflict minerals in its products originated in a covered country.

Of companies that performed due diligence, 15 percent reported that they were able to determine whether conflict minerals in their products benefitted or financed armed groups. This percentage is higher than the percentage that reported this information in 2022 and 2021, although the difference is not statistically significant. All companies that reported such a determination also reported that their conflict minerals did not benefit armed groups.

Most Companies Used Standard Tools and Programs in 2023 to Support Due Diligence Efforts, but Limitations Persisted

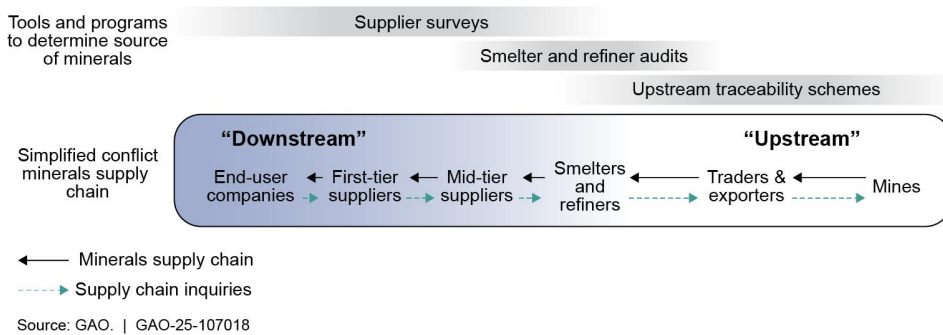
Most companies that submitted disclosures in 2023 used standardized tools and programs to determine the sources of their conflict minerals and to assess the risk that the trade of these minerals had benefitted armed

groups, according to our analysis and industry stakeholders. These tools and programs generally fall into one of three categories:

- **Supplier surveys.** Companies may survey their suppliers to trace conflict minerals back through the supply chain to the smelters or refiners that processed them.
- **Smelter and refiner audit programs.** Companies may use smelter and refiner audit programs to ascertain whether the processing smelters and refiner sourced the conflict minerals responsibly.
- **Upstream traceability schemes.** Companies may use these schemes to trace minerals through the upstream portion of their supply chain—that is, from the mines, traders, and exporters to the smelters and refiners. They may also use the schemes to identify risks such as human rights abuses and interference by armed groups.

Figure 12 shows these three categories of tools and programs in relation to a simplified conflict minerals supply chain.

Figure 12: Tools and Programs That Companies May Use to Determine Sources of Conflict Minerals, in Relation to Simplified Supply Chain



Supplier Surveys

To collect information about the presence and source of conflict minerals in their products, some companies survey the suppliers in the downstream portion of their supply chains. According to our analysis, an estimated 95 percent of companies reported surveying suppliers. Among companies that reported using a supplier survey, 93 percent indicated using the Conflict Minerals Reporting Template.¹⁰³

However, using supplier surveys to determine minerals’ origins may involve challenges, according to industry stakeholders and filings we reviewed. Our analysis of companies’ 2023 disclosures found that an estimated 66 percent of companies identified navigating complex supply chains or not receiving product-level information as a challenge. For example:

- Collecting supply chain information, including through a supplier survey, can be difficult for companies that are many tiers removed from the processing smelter or refiner, according to industry stakeholders. We have previously reported that, according to an industry stakeholder, companies may work with about 1,000

¹⁰³The Conflict Minerals Reporting Template was developed by the Responsible Minerals Initiative, which provides tools and resources to facilitate companies’ sourcing decisions and to support responsible sourcing from conflict-affected and high-risk areas.

suppliers throughout many tiers in the supply chain.¹⁰⁴ Industry stakeholders told us that some supply chains, such as those for electronics components, feature arrangements in which products cycle between two or three facilities repeatedly before advancing to the next stage, making it difficult to identify minerals' chain of custody.

- Some suppliers completing the survey provide information about all of their products, regardless of whether they supplied these products to the company requesting the survey, according to industry stakeholders. Consequently, the company may receive sourcing information that is not relevant to its products.
- Suppliers' lack of response to survey requests may hamper the use of surveys. An industry stakeholder told us that some distributors did not complete the surveys, arguing they did not need to participate because they were not the manufacturer. Our analysis of companies' 2023 disclosures found that among companies that conducted a survey, an estimated 42 percent reported a response rate of less than 100 percent.
- Suppliers may respond to survey requests but provide incomplete or erroneous information. Our analysis of 2023 disclosures found that an estimated 43 percent of companies identified incomplete or inaccurate survey responses as a challenge. Some companies that reported receiving such responses described directing the suppliers to training resources to improve their understanding of reporting requirements.

Smelter and Refiner Audit Programs

To better understand risks associated with smelters and refiners, many companies refer to information provided by smelter and refiner audit programs. These programs provide companies with reasonable assurance that conflict minerals sourced from a particular smelter or refiner did not benefit or finance armed groups. As we reported in 2016, smelters and refiners represent a "choke point" in the supply chain because a limited number of such facilities process conflict minerals worldwide.¹⁰⁵

Some smelter and refiner audit programs, such as the Responsible Minerals Assurance Process (RMAP), maintain lists of facilities found to conform to the program's responsible sourcing standards.¹⁰⁶ Filing companies often cross-reference audit program conformance lists against lists of smelters and refiners in their supply chain to determine which facilities source responsibly. According to our analysis, an estimated 79 percent of companies that filed in 2023 reported using data from a smelter and refiner audit program, such as the RMAP, as part of their efforts to determine the source of conflict minerals in their products. Further, an estimated 42 percent of companies reported the number or percentage of smelters and refiners in their supply chains that conformed to the RMAP standards.

However, industry stakeholders said that the withdrawal of some smelters and refiners from audit programs creates uncertainty about supply chain risks. An industry stakeholder told us that some smelters and refiners argue they do not need to participate in audit programs because the SEC disclosure rule does not apply to many companies that purchase conflict minerals directly from smelters and refiners. Another stakeholder said

¹⁰⁴[GAO-21-531](#).

¹⁰⁵GAO, *SEC Conflict Minerals Rule: Companies Face Continuing Challenges in Determining Whether Their Conflict Minerals Benefit Armed Groups*, [GAO-16-805](#) (Washington D.C.: Aug. 25, 2016).

¹⁰⁶The Responsible Minerals Initiative's RMAP uses independent third-party assessments of smelters' or refiners' management processes and sourcing practices to validate the smelters' and refiners' conformance with the program's standards for responsible mineral procurement.

downstream companies that conduct due diligence may be putting less pressure on smelters and refiners to participate in the audit programs. On the other hand, we heard that some companies continue to require conformance from smelters and refiners. For example, one company reported removing from its supply chain all processing facilities that did not conform to RMAP standards.

In addition to providing lists of conforming processing facilities, some audit programs provide information about the countries from which smelters and refiners source minerals. This information can help companies identify the countries from which they ultimately sourced their conflict minerals and, as relates to the rule, determine whether they sourced their minerals from any covered countries.

However, because smelters and refiners consider such details to be commercially sensitive, organizations conducting audit programs may limit the information they share with downstream companies, according to industry stakeholders. To address sensitivity concerns, some organizations conducting audit programs categorize certain countries as high-risk or low-risk sources, among other categories. The organizations then designate risk categories for sources used by a particular smelter or refiner but do not identify the countries from which minerals are sourced. A stakeholder told us that other organizations conducting audit programs provide an aggregated list of all countries from which the smelters and refiners in their audit programs source minerals, so that a company cannot know the specific countries where its minerals originated.

Upstream Traceability Schemes

Many companies' due diligence processes involve upstream traceability schemes. Some schemes involve a "bag-and-tag" process, in which minerals from a validated conflict-free mine site are placed in a bag with an identifying tag. This documentation establishes the minerals' chain of custody from the mine site to the point of export and facilitates the collection of data that may be useful for evaluating upstream risks.

These schemes can provide companies with information about the minerals' chain of custody through the upstream supply chain. For example, some upstream traceability schemes collect data on incidents, such as improper chain-of-custody protocol, interference by armed groups, or use of forced labor, that occur at the mine sites and in the supply chains the schemes monitor. Upstream traceability schemes may release these data publicly, including the location and a brief summary of the incident, or send risk alerts to members of the scheme when incidents occur.

In general, smelters and refiners, rather than the companies required to file with SEC, participate in upstream traceability schemes.¹⁰⁷ Some smelters may use data provided by upstream traceability schemes to meet audit programs' requirements, according to industry stakeholders. However, stakeholders told us that several factors limit the effectiveness of upstream traceability schemes. For example:

- Smuggling persists despite the presence of traceability schemes, according to stakeholders.
- Upstream traceability schemes provide less coverage of supply chains for gold than for tantalum, tin, and tungsten because of the challenges involved in tracing gold, according to stakeholders.

¹⁰⁷Membership in traceability schemes is not exclusive to smelters and refiners and may include mining cooperatives, trading companies, or manufacturing companies, among others.

- Some countries limit access to mine sites, which can hinder efforts to assess upstream risks, according to an industry stakeholder.
- Mine locations are often remote and difficult to access, and visiting them can therefore be expensive, according to experts.

Industry stakeholders told us that blockchain technology may support upstream traceability efforts.¹⁰⁸ According to an industry expert, this technology can allow companies to compile supply chain information, including mine-level sourcing data, in the form of a secure digital trail. However, some industry stakeholders noted that the use of blockchain technology as a due diligence tool has potential weaknesses, such as its reliance on the accuracy of information initially entered in the system. Further, some stakeholders noted that blockchain technology can be expensive and that few companies may be willing to take on this cost.

According to an industry stakeholder, upstream traceability efforts specific to gold have been enhanced by the development of a “geoforensic passport”—a scientific tool used to validate the claimed origin of any mined gold and monitor supply chain risks.¹⁰⁹ The tool generates a complex georeferenced profile of the composition and characteristics of gold by analyzing samples of gold ore from mine sites. Gold in the supply chain can then be compared to these georeferenced profiles to authenticate its claimed origin.

Some Companies Report Limited Information, Citing SEC Staff Guidance, while Others Report More Than Disclosure Rule Requires

Companies’ disclosures and industry stakeholders indicated that guidance issued by SEC staff in 2014 and 2017 may have contributed to some companies’ limiting the information in their conflict minerals disclosures or choosing not to file.¹¹⁰ We found that of the 1,017 companies that submitted conflict minerals disclosures in 2023, approximately 1 percent (seven companies) submitted an independent private sector audit (IPSA).¹¹¹ Conversely, 11 percent (114 companies) reported that, pursuant to SEC guidance, the company did not file an IPSA of their due diligence activities. None of the 100 companies that submitted the disclosures in our sample labeled their products “DRC conflict free,” and therefore, according to the 2014 guidance, none were required to file an IPSA.¹¹²

Some industry stakeholders told us that companies have interpreted the 2017 SEC staff guidance to mean that SEC will not enforce penalties related to the rule. Consequently, some companies may choose not to comply

¹⁰⁸A blockchain is a type of distributed ledger technology consisting of digital information (blocks) recorded in a public or private database in the format of a distributed ledger (chain). The ledger permanently records the history of transactions that take place among the participants in the network in a chain of cryptographically secured blocks. Distributed ledger technology allows users across a computer network to verify the validity of transactions, potentially without a central authority.

¹⁰⁹Metalor Technologies and the University of Lausanne developed the tool in collaboration and, according to a Metalor press release, unveiled it in March 2021. See Metalor, “Press Release: ‘Geoforensic Passport’ to Validate the Origin of Every Gold Doré,” Mar. 16, 2021, <https://metalor.com/geoforensic-passport-to-validate-the-origin-of-every-gold-dore/>.

¹¹⁰As we reported in 2021, SEC staff stated that the 2017 staff guidance is not binding on the commission, which can initiate enforcement action if companies do not report on their due diligence in accordance with the rule. See [GAO-21-531](#).

¹¹¹We analyzed the disclosures of all 1,017 companies that reported in 2023, to determine the number that conducted an IPSA. To conduct this analysis, we searched the content of all submitted filings to find any mention of “IPSA” or “independent private-sector audit.” We then reviewed those filings to identify those that included IPSAs.

¹¹²One of the companies that submitted the disclosures in our sample also submitted an IPSA.

with the conflict minerals disclosure requirements. Conversely, some stakeholders said they had not observed reporting changes as a result of the 2017 SEC guidance. For example, an industry stakeholder told us that companies continue reporting information about conflict minerals because of market pressure and fear of losing business.

Although some companies may limit the information they report, others have reported more than the SEC conflict minerals disclosure rule requires—for example, collecting information about minerals, such as cobalt, that are not covered by the rule. We found that of the 1,017 companies that submitted a disclosure in 2023, 42 companies (about 4 percent) reported due diligence efforts related to cobalt and 12 companies (about 1 percent) reported using the Extended Minerals Reporting Template, an extension of the Conflict Minerals Reporting Template.¹¹³

Moreover, an industry stakeholder told us that some companies reported on the conflict-affected and high-risk areas defined in the European Union Conflict Mineral Regulation.¹¹⁴ Industry stakeholders noted that some companies may share this broader information with customers directly or post it on their websites rather than report it in their SEC disclosures.

Sexual Violence Persists in DRC and Adjoining Countries, and Governments Have Taken Some Steps to Address It

Sexual violence in the DRC and adjoining countries remains a significant concern,¹¹⁵ according to surveys and reports published by the UN, USAID, State, academic researchers, and others since April 2022.¹¹⁶ U.S. agencies and the UN have also documented some steps that the DRC and adjoining countries have taken to address sexual violence as well as factors that have hindered their progress.

¹¹³The Responsible Minerals Initiative developed the Extended Minerals Reporting Template for the collection of due-diligence information in the cobalt and mica supply chains. According to the initiative, it formally launched the template in October 2021.

¹¹⁴The EU Conflict Mineral Regulation, also known as Regulation (EU) 2017/821, came into effect in January 2021. According to the European Commission, the regulation aims to ensure that EU importers of tin, tungsten, tantalum, and gold meet international responsible sourcing standards set by the OECD. 2021 O.J. (L130) 1.

¹¹⁵Our analysis of information about sexual violence in adjoining countries focused on the three countries that adjoin eastern DRC—Rwanda, Uganda, and Burundi. We last reported on sexual violence in the DRC and adjoining countries in September 2022, discussing information that had become available from April 2020 through March 2022 (see [GAO-22-105411](#)). For our current report, we reviewed existing population-based survey data and new information that became available from April 2022 through March 2024. For more information about our scope and methodology, see appendix I.

¹¹⁶Two types of information quantify sexual violence in eastern DRC and adjoining countries: (1) data from population-based surveys and (2) case-file data, such as data collected by international entities, law enforcement agencies, or medical service providers on sexual violence victims. Of these two types, data from population-based surveys provide a more appropriate basis for deriving a rate of sexual violence because such surveys are conducted with random sampling techniques and their results are generalizable to the target population from which a representative sample was surveyed. Several factors make case-file information unsuitable for estimating rates of sexual violence. For example, because case-file data are not aggregated across various sources and because the extent to which various reports overlap is unclear, it is difficult to obtain complete data or a sense of magnitude from case files. However, case-file data can provide indicators that sexual assaults are occurring in certain locations.

Population-Based Data about Rates of Sexual Violence Are Limited, but Case-File Reports Suggest Rates Have Risen

Prior-Year Data Show Consistent or Decreasing Rates of Sexual Violence in DRC, Rwanda, and Uganda, but New Data Are Not Available

Available data from population-based Demographic and Health Surveys (DHS) indicate that the incidence of sexual violence in the DRC, Rwanda, and Uganda has remained consistent or decreased since 2007.¹¹⁷ The most recent DHS data for the DRC were published in 2014; for Rwanda, in 2021; and for Uganda, in 2018. The only DHS data for Burundi were published in 2017. We did not identify any new reports or other population-based surveys providing comprehensive rates of sexual violence in eastern DRC and the three countries that adjoin it—Burundi, Rwanda, or Uganda—that had been published since our September 2022 report.¹¹⁸

Figure 13 shows information from DHS reports published from 2007 through 2021 about the incidence of sexual violence in the DRC, Burundi, Rwanda, and Uganda. The host country governments conducted these population-based surveys with technical assistance from ICF.¹¹⁹ Five surveys found statistically significant decreases.¹²⁰

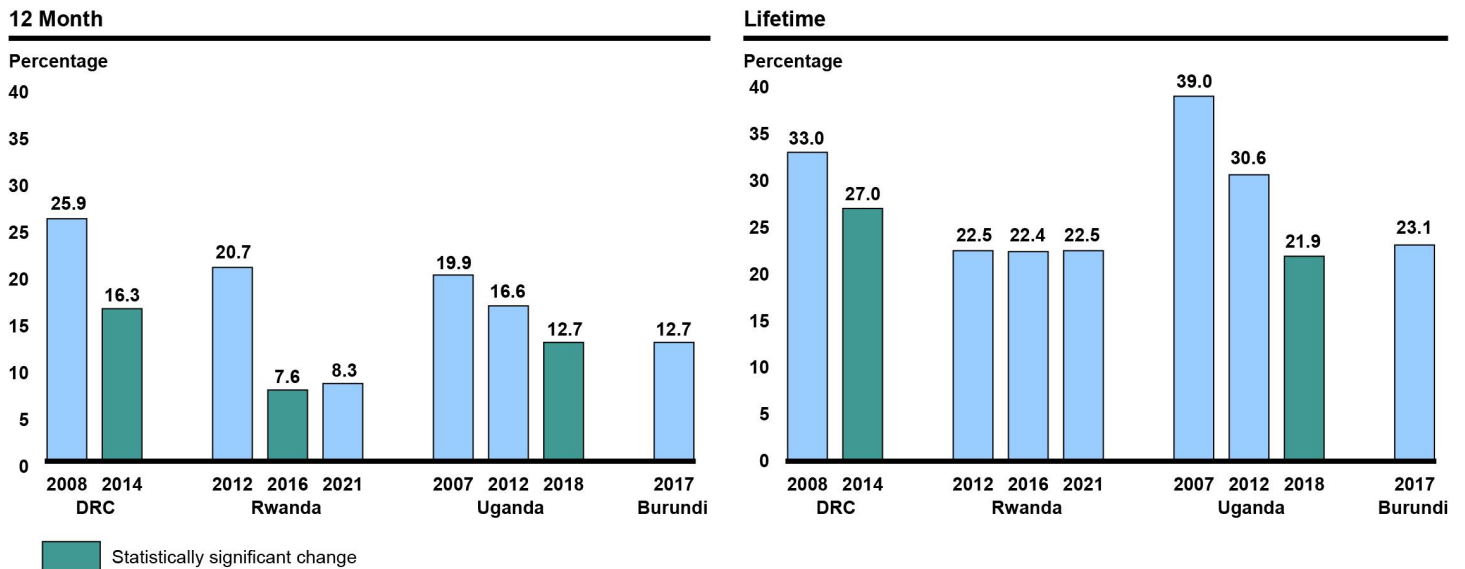
¹¹⁷The DHS Program, which USAID launched in 1984, has provided technical assistance for more than 450 surveys in over 90 countries, according to USAID. The program collaborates with survey implementers, national governments, and international organizations to collect, analyze, and disseminate accurate and representative demographic and health data in countries worldwide. Because only one DHS survey has been conducted for Burundi since 2007, we cannot comment on changes in the rate of sexual violence in the country over time.

¹¹⁸We have reported on sexual violence rates derived from DHS reports and other population-based surveys for the DRC, Burundi, Rwanda, and Uganda since 2011. See the list of related GAO products at the end of this report.

¹¹⁹ICF, a global consulting and technology services provider, is the prime contractor for the DHS Program, according to USAID.

¹²⁰As we reported in 2022, ICF calculated the statistical significance of the increase for Rwanda between 2016 and 2021, and we calculated statistical significance for all other years. See [GAO-20-595](#) and [GAO-22-105411](#). Statistical significance was calculated at the 95 percent confidence level for all years.

Figure 13: Demographic Household Survey (DHS) Data Showing Percentages of Women in the DRC, Burundi, Rwanda, and Uganda Who Reported Experiencing Sexual Violence in Previous 12 Months (Left) and in Their Lifetime (Right), 2007–2021



Legend: DRC = Democratic Republic of the Congo.
 Source: GAO analysis of DHS data. | GAO-25-107018

Accessible Data for Figure 13: Demographic Household Survey (DHS) Data Showing Percentages of Women in the DRC, Burundi, Rwanda, and Uganda Who Reported Experiencing Sexual Violence in Previous 12 Months (Left) and in Their Lifetime (Right), 2007–2021 (Table 1 of 2)

Country	Report Publication date	Estimated rate of sexual violence reported by women (percentage) 12 months
DRC	2014	16.3
	2008	25.9
Rwanda	2021	8.3
	2016	7.6
	2012	20.7
Uganda	2018	12.7
	2012	16.6
	2007	19.9
Burundi	2017	12.7

Accessible Data for Figure 13: Demographic Household Survey (DHS) Data Showing Percentages of Women in the DRC, Burundi, Rwanda, and Uganda Who Reported Experiencing Sexual Violence in Previous 12 Months (Left) and in Their Lifetime (Right), 2007–2021 (Table 2 of 2)

Country	Report Publication date	Estimated rate of sexual violence reported by women (percentage) Lifetime
DRC	2014	27
	2008	33

Country	Report Publication date	Estimated rate of sexual violence reported by women (percentage) Lifetime
Rwanda	2021	22.5
	2016	22.4
	2012	22.5
Uganda	2018	21.9
	2012	30.6
	2007	39
Burundi	2017	23.1

Source: GAO analysis of DHS data. GAO-25-107018

Notes: The data shown are the percentages of women, aged 15 to 49 years, who responded to the survey in each of the four countries and reported having experienced sexual violence in the previous 12 months (left) and in their lifetime (right). The years shown are the years of publication of the most recent DHS reports, as of May 2024, for each country since 2007. These data are generalizable to the populations of the respective countries. We did not calculate the statistical significance in the change in sexual violence rates in Uganda between 2007 and 2012 because the necessary data were not available. Statistical significance was calculated at the 95 percent confidence level.

Reports and Experts Described Continuing Sexual and Gender-Based Violence in DRC and Continued Abuses in Adjoining Countries since 2022

The UN, State, USAID, and others, including experts we interviewed, have documented additional information about cases of sexual violence and gender-based violence as well as other abuses in the DRC and the three countries adjoining eastern DRC since we last reported on this topic in 2022.

UN Agencies Addressing Sexual Violence in the DRC and Adjoining Countries

The **United Nations (UN) Joint Human Rights Office**, created in February 2008, consists of the MONUSCO Human Rights Division and the former Office of the UN High Commissioner for Human Rights in the Democratic Republic of the Congo (DRC) and functions in response to that division's and former office's mandates.

The **UN Office of the Special Representative of the Secretary-General on Sexual Violence in Conflict**, which was established by resolution in 2009, consists of the UN Team of Experts on Rule of Law and Sexual Violence in Conflict as well as UN Action Against Sexual Violence in Conflict, a network of 25 UN entities.

The **UN Protection Cluster in Democratic Republic of the Congo**, established in 2006, is led by the UN High Commissioner for Refugees and comprises the Gender-Based Violence Area of Responsibility for the DRC and other areas of responsibility.

The **UN Population Fund** leads the Gender-Based Violence Area of Responsibility for the DRC, which coordinates the collection and validation of gender-based violence incident data.

Source: GAO analysis of UN documents. | GAO-25-107018

DRC

According to the UN and numerous other sources, gender-based violence remains a concern in the DRC.¹²¹ In eastern provinces, the main risk factors for gender-based violence are armed conflict and armed groups, internal displacement, and food insecurity, according to the UN.¹²² In addition, the UN reported that economic

¹²¹UN reporting on gender-based violence includes both sexual violence and other types of nonsexual violence against women.

¹²²Protection Cluster République Démocratique Du Congo, *Cluster Protection DR Congo: Annual Report 2023*, accessed Apr. 5, 2024, <https://globalprotectioncluster.org/publications/1820/reports/annual-report/rapport-annuel-du-cluster-protection-en-republique>.

precariousness contributes to survival sex and prostitution among women and girls in internally displaced and returnee populations.

The resurgence of M23 in eastern DRC, which has prompted people to flee conflict areas, has triggered an increase in the number of internally displaced persons and a resulting increase in sexual violence, according to sexual violence experts.¹²³ More specifically:

- In 2023, the UN High Commissioner for Refugees reported an increased number of brothels in North Kivu Province.¹²⁴ According to the report, mapping of certain territories in North Kivu Province, including the city of Goma, identified 145 brothels, 67 of them located in camps for internally displaced persons.
- A 2023 State cable noted that the UN and nongovernmental organizations have reported allegations that some FARDC members or relatives own and operate certain brothels established in North Kivu Province since the M23 resurgence.
- An expert on sexual violence from a USAID implementing partner in eastern DRC told us that families in camps for internally displaced persons use sex with young girls and women as currency to acquire resources.

Further, the UN Office of the Special Representative of the Secretary-General on Sexual Violence in Conflict reported that MONUSCO had documented 701 confirmed cases of conflict-related sexual violence affecting women, young girls, and men in 2022 as well as 733 confirmed cases in 2023.¹²⁵ Most violations occurred in the context of clashes between armed groups and FARDC or retaliatory attacks against civilians by Congolese security forces or armed groups, according to the reports.

In addition, State's 2022 and 2023 Human Rights Reports for the DRC described significant human rights issues.¹²⁶ These issues include sexual violence as a tactic of war, perpetrated by FARDC soldiers, the Congolese national police, the Congolese national intelligence agency, and armed groups.¹²⁷ Up to 18 percent of conflict-related sexual violence in the first 6 months of 2022 and approximately 17 percent of such violence in the first 6 months of 2023 was attributable to Congolese security forces, according to the reports.

Moreover, 119,394 survivors of gender-based violence were treated in 2022 and 122,960 survivors were treated in 2023, according to the Global Protection Cluster's Gender-Based Violence Area of Responsibility for

¹²³According to the UN Office of the High Commissioner, people forced to flee or leave their homes, particularly in situations of armed conflict, are generally subject to heightened vulnerability in a number of areas, including sexual violence.

¹²⁴Global Protection Cluster, *Sexual Exploitation of Minors in Brothels and Survival Sex in North-Kivu* (ReliefWeb, June 30, 2023).

¹²⁵For 2022 data, see UN Security Council, *Report of the Secretary-General: Conflict-Related Sexual Violence* (June 2023); for 2023 data, see UN Security Council, *Report of the Secretary-General: Conflict-Related Sexual Violence* (April 2024). According to the UN Office of the Special Representative of the Secretary-General on Sexual Violence in Conflict, "conflict-related sexual violence" refers to rape, sexual slavery, forced prostitution, forced pregnancy, forced abortion, enforced sterilization, forced marriage, and any other form of sexual violence of comparable gravity perpetrated against women, men, girls, or boys that is directly or indirectly linked to a conflict.

¹²⁶Department of State, Bureau of Democracy, Human Rights, and Labor, *2022 Country Reports on Human Rights Practices: Democratic Republic of the Congo* (Washington, D.C.: Mar. 20, 2023); *2023 Country Reports on Human Rights Practices: Democratic Republic of the Congo* (Washington, D.C.: Apr. 22, 2024). The reports for the DRC do not enumerate specific cases of sexual violence.

¹²⁷According to State, gender-based violence includes domestic and intimate partner violence; sexual violence; workplace violence; child, early, and forced marriage; female genital mutilation or cutting; and other forms of such violence.

the DRC.¹²⁸ Women and girls accounted for 96 percent of survivors who received treatment in 2022, and 70 percent of these survivors had been raped. In a 2023 report, Médecins Sans Frontières (MSF)—also known as Doctors without Borders—stated that the number of patients who accessed care for sexual violence in 2022 remained high in DRC provinces where MSF had dedicated projects for victims. Over 10,000 victims of sexual violence in the DRC received medical or psychological care from MSF during 2022.¹²⁹ However, continued armed conflict and intercommunal violence posed major challenges by limiting humanitarian groups’ ability to reach vulnerable populations exposed to gender-based violence, according to the Global Protection Cluster’s 2023 Gender-Based Violence Area of Responsibility report for the DRC.

Representatives of eight of the nine organizations that administer programs addressing sexual violence in the region told us during interviews that they had seen an increase in cases of sexual violence in 2024, particularly conflict-related sexual violence in eastern DRC. According to one of these experts, various armed groups use sexual violence as a form of collective punishment for communities suspected of supporting opposing armed groups.

Burundi

State’s 2022 and 2023 Human Rights Reports for Burundi described significant human rights concerns, including sexual violence.¹³⁰ Both reports stated that rape and other forms of sexual violence were serious problems in the country and that the government did not enforce laws against rape consistently.

In addition, a 2023 annual report from EngenderHealth—the implementing partner of USAID’s GIR’ITEKA (Be Respected) Health Activity, a program intended to reduce sexual violence in Burundi—documented the provision of services to 5,864 survivors of sexual violence. Of these survivors, 86 percent were female.

Rwanda

State’s 2023 Human Rights Report for Rwanda described significant human rights concerns, including sexual violence.¹³¹ State’s 2022 report observed that although no laws criminalize sexual orientation or consensual same-sex conduct between adults, law enforcement officials were previously reported to have abused LGBTQI+ persons, targeting transgender persons in particular with sexual violence. The Rwandan government did not report investigating these cases.

¹²⁸Protection Cluster République Démocratique Du Congo, *Protection Cluster Annual Report, Year 2022: Democratic Republic of Congo*, accessed April 6, 2024, <https://globalprotectioncluster.org/publications/reports/annual-report>; *Cluster Protection DR Congo: Annual Report 2023*. The 2022 and 2023 reports collected data from an additional four provinces in the DRC. According to the UN Population Fund, the Gender-Based Violence Area of Responsibility, in collaboration with the DRC Ministry of Gender and service providers, coordinates the collection of incident data, which are validated through a multi-step process to ensure accuracy.

¹²⁹Médecins Sans Frontières, *International Activity Report 2022* (July 13, 2023).

¹³⁰Department of State, Bureau of Democracy, Human Rights, and Labor, *2022 Country Reports on Human Rights Practices: Burundi* (Washington, D.C.: Mar. 20, 2023); *2023 Country Reports on Human Rights Practices: Burundi* (Washington, D.C.: Apr. 22, 2024). The reports for Burundi do not enumerate specific cases of sexual violence.

¹³¹Department of State, Bureau of Democracy, Human Rights, and Labor, *2022 Country Reports on Human Rights Practices: Rwanda* (Washington, D.C.: Mar. 20, 2023); *2023 Country Reports on Human Rights Practices: Rwanda* (Washington, D.C.: Apr. 22, 2024). The reports for Rwanda do not enumerate specific cases of sexual violence.

State's 2023 report noted that the Rwandan government had supported M23 forces that committed human rights abuses in eastern DRC, including conflict-related sexual violence, and had not prosecuted these abuses.

Uganda

State's 2022 and 2023 Human Rights Reports for Uganda described significant human rights concerns, including sexual violence.¹³² For example, according to the 2022 report, human rights organizations and political opposition parties had documented rape and sexual abuse of detainees committed by government agents. Additionally, State and USAID reported that the Ugandan government's Anti-Homosexuality Act in 2023 expressly criminalizes consensual same-sex sexual conduct between adults and prescribes the death penalty for "aggravated homosexuality" and life imprisonment for "homosexuality."¹³³ According to State, the act did not address "corrective rape" of LGBTQI+ persons, which, according to a Ugandan civil society organization, may be inflicted on lesbian and transgender women in attempts to alter their sexual identity.

In a 2023 report, MSF reported treating 1,760 survivors of sexual violence in the seven regions of Uganda where it provided assistance in 2022.¹³⁴ The report also noted that MSF sent a team to southwest Uganda to set up a health center and assist Congolese refugees from North Kivu Province.

Recently Published Academic Research Discusses Sexual Violence in the DRC and Adjoining Countries

Academic researchers have continued to publish articles and studies about sexual violence in the DRC and adjoining countries since we last reported in 2022.¹³⁵ We reviewed 63 abstracts and, from these, identified six articles and studies relevant to sexual violence in the DRC and adjoining countries. These studies discuss recurring concerns, such as lack of access to support services for victims of sexual violence; stigmatization; and the multigenerational negative impacts of sexual violence on women, men, and their families. For example, a quantitative study conducted in eastern DRC discusses perceptions of rape as a weapon of war as well as rape's impact on communities. The study found that over 70 percent of rapes took place at the victims' homes in the presence of family members and were perpetrated by members of the military or armed groups.¹³⁶

For a population-based study conducted in Uganda, the authors interviewed male refugees, primarily from North and South Kivu Provinces in eastern DRC, about their experiences with sexual violence, among other

¹³²Department of State, Bureau of Democracy, Human Rights, and Labor, *2022 Country Reports on Human Rights Practices: Uganda* (Washington, D.C.: Mar. 20, 2023); *2023 Country Reports on Human Rights Practices: Uganda* (Washington, D.C.: Apr. 22, 2024). The reports for Uganda do not enumerate specific cases of sexual violence.

¹³³U.S. Agency for International Development, Office of Press Relations, "U.S. Urges Uganda to Reconsider Dangerous Law Targeting LGPTQI+ that Jeopardizes Assistance," press release, May 30, 2023; Department of State, Bureau of Democracy, Human Rights, and Labor, *2023 Country Reports on Human Rights Practices: Uganda* (Washington, D.C.: Apr. 5, 2024).

¹³⁴Médecins Sans Frontières, *International Activity Report 2022*.

¹³⁵[GAO-22-105411](#).

¹³⁶Mapendo M. Koya and Emmanuel K. Mpinga, "Perceptions of the Rape Crisis in the Eastern Democratic Republic of Congo: A Community-Based Approach Using an Opportunistic Design," *African Journal of Reproductive Health*, vol. 26, no. 4 (April 2022): 42–56.

indicators. The study found that a quarter of the men had been raped, half of these victims had been raped on multiple occasions, and about three quarters of the victims had been gang raped.¹³⁷

DRC and Adjoining Countries Have Taken Some Steps to Address Sexual Violence since 2022, but Several Factors Have Hindered Progress

The governments of the DRC, Burundi, Rwanda, and Uganda have taken some steps to address sexual violence since we last reported in 2022, but several challenges—underreporting, limited capacity, and limited political will—have hindered their efforts.

Steps Countries Have Taken to Address Sexual Violence

DRC

State's 2022 Human Rights Report for the DRC observed that the national police had increased training to address sexual and gender-based violence, providing training to mining police and community policing programs. In 2023, the national police and FARDC continued nationwide efforts to eliminate gender-based violence perpetrated by state security forces, including reducing impunity for such offenses, according to State's 2023 Human Rights report. However, the report noted that few efforts were made to implement a national action plan against gender-based violence.

Recently, the DRC government has taken actions to strengthen accountability for high-level military officials, according to UN officials. For example:

- Many FARDC unit commanders signed commitments not to perpetrate sexual violence, following a UN Joint Communiqué in 2013 and an addendum in 2019, according to UN officials. In December 2022, the DRC government adopted legislation that defined the implementation plan for the Joint Communiqué, established legal protection for victims and witnesses of sexual violence, and established a reparations fund for victims, according to the UN.¹³⁸
- The DRC government, through a military court supported by the UN, has prosecuted members of state security forces and armed groups for committing acts of sexual violence, according to UN officials. In 2023, DRC judicial authorities prosecuted 47 members of the Congolese military and police forces and 20 members of armed groups in cases involving conflict-related sexual violence, according to a UN report.¹³⁹ In May 2023, the DRC national court prosecuted the crime of forced pregnancy, according to the report. The prosecution resulted in the conviction and life imprisonment of a former leader of a Mai Mai group for crimes against humanity.

¹³⁷The study also reported experiences of nonsexual violence, such as beatings and torture. Wolfgang Hladik et al., "Sexual and Nonsexual Violence and Mental Health Among Male Refugees from the Democratic Republic of Congo Residing in Kampala, Uganda: A Population-Based Survey," *Medicine, Conflict and Survival*, vol. 39, no. 4 (Oct. 2023) 389–411.

¹³⁸United Nations Team of Experts on the Rule of Law and Sexual Violence in Conflict, *Interim Narrative Report Democratic Republic of the Congo*, accessed May 1, 2024, <https://mpf.undp.org/>.

¹³⁹United Nations Security Council, *Conflict-Related Sexual Violence: Report of the Secretary-General, S/2024/292* (April 4, 2024).

Burundi

According to State's 2022 Human Rights Report for Burundi, the country's National Independent Commission on Human Rights documented an increased number of human rights abuses, including gender-based violence, relative to previous years when the commission did not document any such abuses. The commission used its authority to summon senior officials and order corrective action, according to State's report.

Rwanda

State's 2022 Human Rights Report for Rwanda observed that, as in previous years, the government conducted a high-profile public awareness campaign against gender-based violence and child abuse. According to the report, the government supported a network of one-stop centers and hospital facilities that offered integrated police, legal, medical, and counseling services to victims of gender-based violence and child abuse. Additionally, the report stated that training addressing gender-based violence was required for police and military at all levels.

State's 2023 Human Rights Report for Rwanda also noted that the police and military were required to undergo gender-based violence training. Further, according to the report, the Rwandan police maintained free gender-based violence hotlines, a public outreach program, and staffed police stations nationwide with officers trained to handle gender-based violence cases.

Uganda

State's 2022 Human Rights Report for Uganda observed that Uganda's Minister of Gender, Labor, and Social Development had complained that judicial officers denied justice to victims of gender-based violence by choosing to pursue out-of-court settlements or by delaying adjudication. Subsequently, according to the report, judicial officials introduced special month-long court sessions to hear exclusively gender-based violence cases and increase victims' access to justice.

According to State's 2023 Human Rights Report for Uganda, local government leaders collaborated with women's rights activists to identify practitioners of female genital mutilation and hold them accountable. Local government leaders also worked with civil society organizations to identify girls at risk of mutilation and relocate them to shelters.

Challenges That Have Hindered Steps to Address Sexual Violence

State has documented credible reports that investigation of, and accountability for, sexual violence were lacking in each of these countries in 2022 and 2023. For example, according to State, Ugandan authorities did not effectively enforce the law in cases of rape, and local media reported that alleged perpetrators were often local government officials, police, or intelligence and military officers.¹⁴⁰ Although rape is criminalized in the DRC and Burundi, the governments did not consistently enforce the laws, according to State.¹⁴¹

¹⁴⁰Department of State, *2023 Country Reports on Human Rights Practices: Uganda* (April 22, 2024).

¹⁴¹Department of State, *2023 Country Reports on Human Rights Practices: Democratic Republic of the Congo; 2023 Country Reports on Human Rights Practices: Burundi* (April 22, 2024). In contrast, State reported the Rwandan government handled rape cases as a judicial priority. Department of State, *2023 Country Reports on Human Rights Practices: Rwanda* (April 22, 2024).

In addition, State, USAID, and the UN have reported challenges to documenting sexual violence and providing services to survivors. These challenges include absence of faith in government institutions, according to State;¹⁴² fear of authorities, according to USAID;¹⁴³ and poor infrastructure in rural areas as well as fear of stigmatization and retaliation, according to the UN.¹⁴⁴ The UN report states that limited infrastructure is a long-standing challenge that prevents survivors of sexual violence from accessing services, and the MONUSCO withdrawal from eastern DRC has exacerbated the challenge. Moreover, sexual violence experts described police and judicial capacity in North Kivu as deficient and said that weak state governance in eastern DRC provinces results in impunity for perpetrators of sexual violence.

Concluding Observations

The DRC has faced years of ongoing violence that has resulted in significant hardships for the Congolese people. A complex patchwork of armed groups and the Congolese security forces have contributed to this violence, battling each other and committing human rights violations against civilians. The DRC's neighboring countries have also continued to participate in the conflict both directly and indirectly. Sensing that the exploitation and trade of conflict minerals from the DRC was helping to finance this conflict, Congress, through the Dodd-Frank Act, required SEC to promulgate a conflict minerals disclosure rule. Proponents of the rule that SEC later finalized believed the disclosure process would contribute to greater transparency about conflict minerals' origins and would pressure companies to ensure that the mining and trade of minerals in their supply chains were not benefiting armed groups in the DRC.

However, 10 years after companies first submitted disclosures under the SEC rule, conflict persists and evidence indicates that the rule has not contributed to a measurable improvement in peace and security in the DRC. This result is likely driven by the fact that although conflict minerals play an important role in the conflict's dynamics, they are but one of a number of interdependent factors. Experts on the DRC have noted that even if the SEC rule had successfully cut off armed groups' access to revenues from the minerals trade, conflict would persist until other entrenched issues—such as a lack of economic opportunities, lack of capacity in the DRC government, corruption, ethnic tensions, and geopolitical competition between the DRC and its neighbors—were more comprehensively addressed. Further, even if armed groups' revenues from the conflict minerals trade were reduced, evidence indicates that such groups would find other means of financing themselves, such as extorting residents of the areas they control.

The U.S. government has noted its commitment to partner with the DRC government in efforts to address the range of factors contributing to the conflict. Promoting transparency in conflict minerals supply chains and encouraging the private sector to adopt reliable due diligence systems will likely continue to be important aspects of these efforts. However, the accumulation of evidence since SEC implemented its rule indicates that the rule alone has not been sufficient to meaningfully improve peace and security for the Congolese people.

¹⁴²Department of State, *2022 Country Reports on Human Rights Practices: Uganda*.

¹⁴³USAID, *USAID/Burundi Integrated Country Strategy Gender Analysis Report* (Aug. 10, 2022).

¹⁴⁴United Nations Security Council, *Conflict-Related Sexual Violence: Report of the Secretary-General*.

Agency Comments and Our Evaluation

We provided a draft of this report to SEC, State, and USAID for review and comment. SEC and USAID provided comments that we have summarized below and reproduced in appendixes V and VI, respectively. SEC, State, and USAID also provided technical comments that we incorporated as appropriate.

SEC. In its comments, SEC raised concerns about several aspects of our findings, methodology, and analysis. We addressed these concerns by making certain adjustments to our report; however, these adjustments did not materially affect our findings.

The following summarizes SEC's comments and our evaluation of them. (See app. V for more details.)

- SEC commented that many of our report's conclusions about violence in the DRC and adjoining countries are improperly attributed to the SEC conflict minerals disclosure rule rather than to Section 1502 of the Dodd-Frank Act. The act requires us to assess the effectiveness of section 13(p) of the Securities Exchange Act of 1934, as added by section 1502(b) of the Dodd-Frank Act, in promoting peace and security in the DRC and adjoining countries. Section 13(p) requires SEC to promulgate regulations requiring disclosure about certain conflict minerals, which the SEC did when it adopted its conflict minerals disclosure rule in 2012. Therefore, we assessed the effectiveness of the disclosure rule in promoting peace and security in the DRC and adjoining countries. Once the act was enacted in 2010, companies, governments, and others began to take action in anticipation of the rule. To capture all of the rule's effects, we focused our analysis on the period following July 2010—the month when the Dodd-Frank Act was enacted—as do most relevant peer-reviewed empirical studies. In discussing our analysis and its results in the report, we clearly state this methodological choice and its rationale.
- SEC commented that our statistical analyses are flawed, lack transparency, and inappropriately infer causation. We based these analyses on four peer-reviewed studies, and we met with the authors of all four studies to gather further information about their methodologies, limitations, and results. In addition, we consulted with other GAO economists and technical experts to validate our analytical approach. Conducting empirical analysis to assess the effect of particular policies or actions in complex, real-world situations is inherently challenging and comes with limitations; however, we maintain that our model is appropriately designed and sufficiently robust to support the findings presented in our report. In addition, we have conducted a range of checks to assess the consistency of our results across different scenarios and methodological assumptions.

To further strengthen our analysis, we made certain changes to our model in response to SEC's technical comments. For example, we revised our main treatment variable to more closely reflect similar, peer-reviewed, empirical studies. We also added new robustness tests, including limiting the time period to understand the potential effect of increased violence beginning in 2017. We believe the changes SEC proposed helped strengthen our analysis. However, these changes did not significantly affect our results.

In response to SEC's comment about the need for further transparency, we have included the statistical model's underlying equations and summary statistics in appendix II. Finally, in response to SEC's comments, we have reviewed and adjusted our presentation of our analyses' results, where appropriate, to make certain that the statements are proportionate to the evidence.

- SEC commented that our report selectively cites studies that support our conclusions and omits or inaccurately references studies that reach different conclusions. Our report cites quantitative data from other reports and findings from empirical studies that we determined were relevant and objective and that met our evidentiary standards. Other studies that SEC cited in its comments did not meet these standards or were not relevant to our analysis.
- SEC commented that our report fails to fully discuss the limitations of the ACLED data we used in our analysis. We used these data because they are the most comprehensive conflict data available. Notwithstanding, we agree that the data have limitations, as we note throughout the report. We accounted for the evolution of the measurement of violence in ACLED's data over time by including a robustness test designed to determine the effect of violence reports contributed by ACLED's primary partner in the DRC—an important local reporting organization. This robustness test supported our findings. In addition, in response to SEC's comment, we expanded our discussion of the potential effects of measurement error in the ACLED data, including our discussion of the robustness test examining the potential effect of the data from ACLED's primary DRC partner. We also added more information about the ACLED data's limitations and the reasons we used the data.

USAID. In its comments, USAID stated that it concurred with the observations in our report and appreciated our extensive work. In addition, USAID noted its commitment to incorporating the knowledge gained from our work into its programming. USAID also highlighted a number of ways that the observations in our report are already built into its strategies and programming for the DRC and the region more broadly.

We are sending copies of this report to the appropriate congressional committees, the Chair of the Securities and Exchange Commission, the Secretary of State, the USAID Administrator, and other interested parties. In addition, the report is available at no charge on the GAO website at <https://www.gao.gov>.

If you or your staff have any questions about this report, please contact me at (202) 512-8612 or gianopoulosk@gao.gov. Contact points for our Offices of Congressional Relations and Public Affairs may be found on the last page of this report. GAO staff who made key contributions to this report are listed in appendix VII.



Kimberly M. Gianopoulos
Managing Director, International Affairs & Trade

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Chairman

Letter

The Honorable Gregory Meeks
Ranking Member
Committee on Foreign Affairs
House of Representatives

The Honorable Jason Smith
Chairman
The Honorable Richard Neal
Ranking Member
Committee on Ways and Means
House of Representatives

Appendix I: Objectives, Scope, and Methodology

This report examines (1) what can be determined about the effectiveness of the Securities and Exchange Commission’s (SEC) disclosure rule in promoting peace and security in the Democratic Republic of the Congo (DRC) and adjoining countries, (2) how companies responded to the disclosure rule when filing with SEC in 2023, and (3) what is known about the incidence of sexual violence in the DRC and adjoining countries since April 2022.¹

To examine what can be determined about the disclosure rule’s effectiveness in promoting peace and security, we collected and analyzed data from Armed Conflict Location and Event Data (ACLED) about violent events from 2004—after the Second Congo War ended—through 2022. ACLED data are based on media reports, reports from nongovernmental and international organizations, selected social media accounts, and information provided through partnerships with local conflict observatories. We used these data because ACLED, which gathers nonpublic information from local conflict observatories in addition to information from media reports, is more likely to capture events that are not covered by the media. However, while local organizations gather primary data and have coverage that is more reflective of local realities, these initiatives are often limited in scope, according to ACLED. Additionally, ACLED states that media reports may not capture all events. Consequently, ACLED may underreport events such as violent events and battles.

To assess the reliability of ACLED data, we reviewed related documentation, interviewed knowledgeable officials, and conducted electronic data testing. We found these data to be sufficiently reliable for the purpose of describing conflict trends in eastern DRC from 2004 through 2022. We excluded data for 2023 because one of the local organizations supplying conflict information to ACLED had ceased reporting; as a result, ACLED data on events in the DRC for 2023 are not comparable to such data for previous years.

We designed statistical models to assess the effectiveness of the SEC disclosure rule in promoting peace and security. We reviewed relevant empirical studies that we identified by searching the internet and databases, including Scopus, Proquest Sociology Collection, and Social SciSearch®, to conduct a literature review. We also asked experts to recommend empirical studies. On the basis of these searches and recommendations, we identified four peer-reviewed studies designed to measure the effect of the SEC disclosure rule on violence in the DRC and adjoining countries. We interviewed the studies’ lead authors regarding their methodological choices, including the types of statistical model, time periods, and geographical and temporal units used. We also discussed the studies’ results and the models’ data sources and potential limitations with the studies’ authors.

¹The 2010 Dodd-Frank Wall Street Reform and Consumer Protection Act defines “adjoining country” as a country that shares an internationally recognized border with the DRC. Pub. L. No. 111-203, § 1502(e)(1), 124 Stat. 1376, 2213-18 (2010). When SEC issued its conflict minerals disclosure rule, Angola, Burundi, the Central African Republic, the Republic of the Congo, Rwanda, South Sudan, Tanzania, Uganda, and Zambia shared an internationally recognized border with the DRC. 77 Fed. Reg. 56, 274, 56,275 (Sept. 12, 2012), codified at 17 C.F.R. § 240.13p-1. For the purposes of the disclosure rule, SEC refers to these countries, along with the DRC itself, as “covered countries.”

To evaluate the effectiveness of the SEC disclosure rule in promoting peace and security in the DRC, we assessed the rule's effect on the number and occurrence of violent events in the country's eastern region.² We used a fixed-effects regression model to compare the number and occurrence of such events before and after the enactment of the Dodd-Frank Act in July 2010 in territories that were likely to be most or less likely affected by the SEC rule.³ Although SEC finalized its disclosure rule in August 2012, our analysis uses the enactment of the Dodd-Frank Act as a proxy for the rule because companies, governments, and others began to take steps after the act's enactment in anticipation of the disclosure rule.

We examined the occurrence and number of violent events from July 2004 through December 2022. We used data about

- violent events and battles from ACLED;
- locations of artisanal and small-scale tantalum, tin, tungsten, and gold mines from the International Peace Information Service;
- the DRC's subnational administrative boundaries (specifically, the second administrative level), provided by the United Nations (UN) Office for the Coordination of Humanitarian Affairs from the Humanitarian Data Exchange;
- monthly rainfall totals and the average of monthly totals from 1982 through 2022, provided by the Climate Hazards group at the University of California, Santa Barbara, from the Climate Hazards Group InfraRed Precipitation with Stations; and
- monthly prices of tantalum, tin, tungsten, and gold from the Bloomberg Terminal.

To assess the reliability of these data, we reviewed related documentation and interviewed knowledgeable officials as necessary. We also conducted electronic testing of the data pertaining to mine locations, administrative boundaries, and rainfall. We found the data to be sufficiently reliable for the purposes of conducting this statistical analysis of the rule's effect on the number and occurrence of violent events in the DRC.

Our model isolated the effects of the SEC disclosure role from factors that remained constant or slowly evolved over time, such as governance, ethnic tensions, and the presence of natural resources. Similarly, the model accounted for time-specific factors that affected the territories in eastern DRC equally, such as macroeconomic conditions and the proximity to elections. Further, the model controlled for certain factors that varied across territories and time that we identified as likely affecting violence, such as mineral prices, historical violence, proximity of violence, and precipitation patterns. (Other variables for which our model did not control may also have affected violence in the DRC.) For further details of this analysis, including potential limitations, see appendix II.

²For the purpose of this analysis, we defined "violence" and "violent events" as comprising battles, explosions and remote violence, or violence against civilians. We defined eastern DRC as the second-level administrative units (i.e., territories and cities, which this report refers to collectively as territories) included in the Department of State's 2011 "Conflict Minerals Map," which identifies the mining areas affected by armed groups. The map covers Ituri, North Kivu, and South Kivu Provinces and parts of Upper Katanga, Lualaba, Upper Lomami, Maniema, Tanganyika, Tshopo, Lower Uele, and Upper Uele Provinces.

³Like the related empirical literature, we defined the territories likely to be most affected by the SEC rule as those in Maniema, North Kivu, and South Kivu Provinces, where the President of the DRC announced a ban on mining from September 2010 until March 2011, and those containing at least one mine with geocoordinates in State's 2011 Conflict Minerals Map.

To evaluate the effectiveness of the SEC disclosure rule in promoting peace and security in the countries adjoining the DRC, we assessed the rule's effect on levels of violence in eight of the nine adjoining countries from August 2010 through August 2015. We used a synthetic control model, which created a data-driven, artificial control country to represent each country's counterfactual experience without the SEC disclosure rule. Specifically, we compared the number of violent events that occurred in each of the eight countries—Angola, Burundi, the Central African Republic, the Republic of the Congo, Rwanda, Tanzania, Uganda, and Zambia—during the 5 years after the enactment of the Dodd Frank Act with the number of violent events that would have occurred without the SEC disclosure rule. We excluded South Sudan, the ninth adjoining country, because it did not exist before the act's July 2010 enactment. We ended our analysis with August 2015 because the quality of the synthetic control degrades over time.

To create each artificial control country, we used data for January 2004 through August 2015 showing

- violent events, from ACLED;
- ethnic fractionalization, from a 2003 study;⁴ and
- average gross domestic product levels and total natural resource rents as a percentage of gross domestic product, from the World Bank's World Development Indicators.

To assess the reliability of these data, we reviewed related documentation and conducted electronic data testing as necessary. We determined that the data were sufficiently reliable for the purposes of conducting this statistical analysis of the rule's effect on the levels of violence in DRC's adjoining countries. For further details of this analysis, see appendix III.

To obtain qualitative information about the effectiveness of the SEC disclosure rule, we conducted fieldwork in Kinshasa and conducted 15 semistructured interviews with experts on conflict minerals and the DRC. We identified the experts for these interviews by reviewing our prior work on the topics, conducting background research, and using an expert referral process. We selected these experts from a variety of organizations, including research institutions and international NGOs, to ensure a range and cross-section of views. Eight of the 15 interviews included more than one participant. The results of these interviews are not generalizable.

We interviewed U.S. government officials based in Kinshasa from the U.S. Department of State's Eastern Congo Unit and the U.S. Agency for International Development's (USAID) Economic Growth Office. We also interviewed DRC government officials from the Ministry of Mines and Ministry of Regional Integration. In addition, we interviewed officials from the UN Organization Stabilization Mission in the DRC. Further, we interviewed DRC and conflict minerals experts from three research institutions—two based in Europe and one in the DRC—and from two nongovernmental organizations—one based in Europe and one in Washington, D.C. We interviewed additional State and USAID officials based in Washington, D.C., to obtain background information.

In addition, we reviewed reports and other sources to identify other relevant findings about conflict minerals and peace and security in the DRC. For example, we reviewed the midterm and annual reports by the UN Group of Experts from 2022 through 2024, reports from nongovernmental organizations such as the International Peace Information Service and International Crisis Group, and information from the U.S. government and UN. We also reviewed the findings of the four empirical studies we selected to design our

⁴Alberto Alesina et al., "Fractionalization," *Journal of Economic Growth*, vol. 8 (2003).

statistical models. We selected these reports, information sources, and empirical studies after determining that they were relevant and objective and met our evidentiary standards.

To examine how companies responded to the SEC disclosure rule when filing in 2023, we analyzed disclosures downloaded from SEC's Electronic Data Gathering, Analysis, and Retrieval (EDGAR) database.⁵ To verify the completeness and accuracy of the EDGAR database, we reviewed relevant documentation, interviewed knowledgeable SEC officials, and reviewed data reliability assessments from our prior reports that used data from EDGAR for similar purposes. We determined that the EDGAR database was sufficiently reliable for identifying the universe of companies' conflict minerals disclosures.

We downloaded the specialized disclosure forms, known as Forms SD, from EDGAR filed by 1,017 companies in 2023.⁶ Companies filed the forms, along with related conflict minerals reports in some instances, to provide information in response to the SEC disclosure rule.⁷ We randomly sampled 100 of these disclosures to create estimates generalizable to the population of all companies that filed in response to the SEC disclosure rule from January 1 through September 30, 2023. We selected this sample size to achieve a margin of error of no more than plus or minus 10 percentage points at the 95 percent confidence level, which applies to all our estimates. Because we followed a probability procedure based on random selection, our sample is one of a large number of samples we might have drawn. Since each sample could have generated different estimates, we express our confidence in our sample results' precision as a 95 percent confidence interval. This interval would contain the actual population value for 95 percent of the samples we could have drawn.

We reviewed relevant portions of the Dodd-Frank Act⁸ and the requirements of the SEC disclosure rule⁹ to develop a data collection instrument that guided our analysis of the disclosures in our sample. The data collection instrument contained a number of questions related to companies' disclosures. Using this instrument, we reviewed the disclosures in our sample to identify, among other things, the companies' determinations of their conflict minerals' origins on the basis of their reasonable-country-of-origin inquiries and, if reported, their due diligence. We did not use the data collection instrument to conduct a compliance review of the companies' disclosures.

We categorized companies according to whether they (1) reported that their minerals came from covered countries, (2) reported that their minerals did not come from covered countries, (3) reported that their minerals came from scrap or recycled sources, (4) reported that they could not determine the origin of their minerals, or (5) did not report a clear determination. For example, we concluded that a company did not report a clear determination if it made statements related to more than one determination or if its filing—that is, its Form SD and, if applicable, its conflict minerals report—did not mention a determination. For each company in the

⁵Conflict minerals disclosures filed with SEC in a given year contain information about conflict minerals used in the previous year. For this report, we reviewed disclosures that companies filed in 2023 about conflict minerals used in 2022. All years cited in this report are calendar years unless otherwise noted.

⁶For 2023, companies were required to file their conflict mineral disclosure by May 31, 2023. We downloaded all disclosures filed from January 1, 2023, through October 1, 2023. Two disclosures were filed after October 1, 2023, and were not included in our analysis. We also excluded other disclosures that we determined to be outside the scope of our review, such as disclosures filed for previous reporting years or disclosures made obsolete by a subsequent updated submission.

⁷77 Fed. Reg. 56,274 (Sept. 12, 2012), codified at 17 C.F.R. § 240.13p-1.

⁸Pub. L. No. 111-203, § 1502.

⁹17 C.F.R. § 240.13p-1.

sample, an analyst reviewed the company’s filing and recorded responses to the data collection instrument. A second analyst reviewed the filing and verified the responses recorded by the first analyst. The analysts then discussed and resolved any discrepancies.

After using the data collection instrument to analyze the sample of disclosures filed from January 1 through September 30, 2023, we compared the resulting estimates with our estimates regarding disclosures filed in prior years, to identify any statistically significant changes. We also analyzed all 1,017 disclosures submitted before October 1, 2023, to identify the number of companies that filed an independent private sector audit (IPSA). To conduct this analysis, we searched the content of all companies’ disclosures for “IPSA” or “independent private sector audit.” We then reviewed those disclosures to identify those that included an IPSA. Additionally, we conducted similar content searches to analyze all disclosures submitted before October 1, 2023, to identify the number of companies that used the Extended Minerals Reporting Template and the number that voluntarily reported information about cobalt in their disclosures.

In addition, we interviewed SEC staff about the SEC disclosure rule and their understanding of companies’ response to the rule. We also selected and interviewed a nongeneralizable sample of 13 industry stakeholders, including representatives of filing companies, business organizations, and a nongovernmental organization, to obtain their perspectives related to meeting disclosure requirements. We identified stakeholders through our prior work on conflict minerals, background research on companies and organizations involved in responsible sourcing efforts, and their participation in an annual industry conference, as well as an expert referral process that included asking experts to recommend other experts.

To obtain information about sexual violence in the DRC and three adjoining countries—Burundi, Rwanda, and Uganda—from April 2022 through March 2024, we searched research databases, including Scopus, MEDLINE, and Policy File Index, to identify academic articles, books, and reports and think-tank publications.¹⁰ We identified 63 abstracts and, from these, identified six articles and studies relevant to sexual violence in the DRC and adjoining countries by considering a variety of factors. We were particularly interested in studies that included original research or primary data collection. We considered a study relevant if it

- included quantitative data about the incidence of sexual violence or information related to conflict-related sexual violence or gender-based violence other than intimate-partner violence;
- had a geographic scope that included the DRC, Burundi, Rwanda, or Uganda; and
- contained information from April 2022 or later.

We did not identify any new reports or population-based surveys providing comprehensive rates of sexual violence in the DRC, Burundi, Rwanda, or Uganda that had been published since we issued our September 2022 report.¹¹ We reviewed available data from our prior reports and Demographic Household Surveys that

¹⁰The Dodd-Frank Act includes a provision requiring us to report on the rates of sexual and gender-based violence in war-torn areas of the DRC and adjoining countries. See Pub. L. No. 111-203, § 1502(d)(1). According to UN officials, sexual violence is a form of gender-based violence. For the purposes of our analysis of information about sexual violence, we focus on the three countries that adjoin eastern DRC—Rwanda, Uganda, and Burundi. We last reported on these matters in September 2022. See GAO, *Conflict Minerals: Overall Peace and Security Has Not Improved in the Democratic Republic of the Congo since 2014*, [GAO-22-105411](#) (Washington, D.C.: Sept. 14, 2022). Our 2022 report discussed sexual violence in the DRC, Burundi, Rwanda, and Uganda on the basis of information that had become available from March 2020 through April 2022.

¹¹[GAO-22-105411](#).

reported on rates of sexual violence for DRC, Burundi, Rwanda, and Uganda and that identified statistically significant changes in these rates between years for which the data were comparable.¹²

We reviewed documents and case-file reports published by State, USAID and its implementing partner organizations, UN agencies, and nongovernmental organizations.¹³ We analyzed these documents and reports for information related to sexual violence, conflict-related sexual violence, and gender-based violence in the DRC and adjoining countries. We also analyzed these documents and reports to identify actions taken by the DRC and adjoining countries to address sexual and gender-based violence and challenges that affect their efforts.

In addition, we conducted semistructured interviews with representatives of USAID's Bureau of Humanitarian Affairs and the UN's Joint Human Rights Organization in Kinshasa as well as representatives of six international and national nongovernmental organizations in the DRC. Further, we interviewed officials of the UN's Office of the Special Representative to the Secretary-General for Sexual Violence in Conflict. We identified these organizations through our prior work regarding sexual violence in the region and our background research. Findings from these interviews are not generalizable to other officials or organizations.

We conducted this performance audit from August 2023 to October 2024 in accordance with generally accepted government auditing standards. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objectives.

¹²The DHS Program, which USAID launched in 1984, has provided technical assistance for more than 450 surveys in over 90 countries, according to USAID. The DHS Program collaborates with survey implementers, national governments, and international organizations to collect, analyze, and disseminate accurate and representative demographic and health data in countries worldwide.

¹³Two types of information quantify sexual violence in eastern DRC and adjoining countries: (1) data from population-based surveys and (2) case-file data, such as data collected by international entities, law enforcement agencies, or medical service providers on sexual violence victims. Of these two types, data from population-based surveys provide a more appropriate basis for deriving a rate of sexual violence because such surveys are conducted with random sampling techniques and their results are generalizable to the target population from which a representative sample was surveyed. Several factors make case-file information unsuitable for estimating rates of sexual violence. For example, because case-file data are not aggregated across various sources and because the extent to which various reports overlap is unclear, it is difficult to obtain complete data or a sense of magnitude from case files. However, case-file data can provide indicators that sexual assaults are occurring in certain locations.

Appendix II: Regression Analysis of SEC Conflict Minerals Disclosure Rule's Effect on Violence in Eastern DRC

This appendix describes our analysis—its methods, data, results, and limitations—of the effectiveness of the U.S. Securities and Exchange Commission's (SEC) conflict minerals disclosure rule in promoting peace and security in eastern Democratic Republic of the Congo (DRC).¹

Methods

We conducted a regression analysis to estimate the association of the SEC conflict minerals disclosure rule with violence in eastern DRC, controlling for related factors.² We focused on eastern DRC because the majority of violent events are concentrated in this region and it is the location of many mines that produce conflict minerals—tantalum, tin, tungsten, and gold.³ We focused on artisanal mines because armed groups are more likely to interfere with them than with industrial mines.⁴ Similar to previous empirical studies, our analysis examined violence in second-level administrative units.⁵

¹The Dodd-Frank Wall Street Reform and Consumer Protection Act (Dodd-Frank Act) defines conflict minerals as columbite-tantalite (coltan), cassiterite, wolframite, gold, or their derivatives, or any other mineral or its derivatives that the Secretary of State determines to be financing conflict in the DRC or an adjoining country. See Pub. L. No. 111-203, § 1502(e)(4), 124 Stat. 1376, 2218. Tantalum, tin, and tungsten—the derivatives of columbite-tantalite (coltan), cassiterite, wolframite, respectively—and gold are used in industrial and other applications. In this appendix, "conflict minerals" refers to either these ores or these metals.

²The Dodd-Frank Act required us to assess the effectiveness of section 13(p) of the Securities Exchange Act of 1934, as added by section 1502(b) of the Dodd-Frank Act, in promoting peace and security in the DRC and adjoining countries. Pub. L. No. 111-203, § 1502. Section 13(p) requires SEC to promulgate regulations requiring disclosure about certain conflict minerals, which the SEC did when it adopted its conflict minerals disclosure rule in 2012. Pub. L. No. 111-203, § 1502(b). Therefore, we assessed the effectiveness of the SEC disclosure rule in promoting peace and security in the DRC and adjoining countries. SEC's rule can be found at 77 Fed. Reg. 56,274 (Sept. 12, 2012), codified at 17 C.F.R. § 240.13p-1. For our analysis of the disclosure rule's effectiveness in promoting peace and security, we defined "violent events" and "violence" as comprising battles, explosions and remote violence, or violence against civilians.

³We define eastern DRC as the territories and cities shown on the Department of State's 2011 "Conflict Minerals Map," which identifies mining areas affected by armed groups. The map covers Ituri, North Kivu, and South Kivu Provinces and parts of Upper Katanga, Lualaba, Upper Lomami, Maniema, Tanganyika, Tshopo, Lower Uele, and Upper Uele Provinces. The International Peace and Information Service, a Belgian research institute, has mapped approximately 2,800 gold, tantalum, tin, and tungsten mines in eastern DRC. Throughout this appendix, "mines" refers to artisanal mines. During the period we studied, approximately 95 percent of the violent events and battles in the DRC occurred in the eastern region, according to our analysis of data from Armed Conflict Location and Event Data (ACLED) data.

⁴Artisanal and small-scale mining sites are small, typically labor-intensive mining operations characterized by a lack of mechanization and capital investment.

⁵For previously published studies that used the second-level administrative unit as the unit of analysis, see Bok Baik et al., "The Real Effects of Supply Chain Transparency Regulation: Evidence from Section 1502 of the Dodd-Frank Act," *Journal of Accounting Research*, vol. 62, no. 2 (May 2024); Jeffrey R. Bloem, "Good Intentions Gone Bad? The Dodd-Frank Act and Conflict in Africa's Great Lakes Region," *Economic Development and Cultural Change*, vol. 71, no. 2 (Chicago: January 2023); Dominic P. Parker and Bryan Vadheim, "Resource Cursed or Policy Cursed? U.S. Regulation of Conflict Minerals and Violence in the Congo," *Journal of the Association of Environmental and Resource Economists*, vol. 4, no. 1 (Dec. 7, 2016); and Nik Stoop, Marijke Verpooten, and Peter van der Windt, "More Legislation, More Violence? The Impact of Dodd-Frank in the DRC," *PLoS ONE* (Aug. 9, 2018).

The analysis allowed us to isolate the SEC disclosure rule's association with violence in eastern DRC from factors, such as geographical characteristics, that remained constant across time within second-level administrative units and from time-specific factors, such as elections, that affected each unit. The model also held constant other factors associated with violence—specifically, rainfall patterns; spillovers of violence across time and space; mineral prices; and the interactive effects between mines, policy, and mineral prices.

We selected these control variables because previous empirical literature found them to be associated with violence, both in the DRC and more generally.⁶ Table 1 lists the variables we used in the regression analysis.

⁶For previously published studies, see Parker and Vadheim, "Resource Cursed or Policy Cursed?" and Stoop, Verpoorten, and van der Windt, "More Legislation, More Violence?"

Appendix II: Regression Analysis of SEC Conflict Minerals Disclosure Rule’s Effect on Violence in Eastern DRC

Table 1: Variables Used in Regression Analysis to Estimate Association between SEC Conflict Minerals Disclosure Rule and Violence in Eastern DRC

Outcome (or dependent) variable	Description	Source
Violent event indicator	We measured violent events by using the "event_type" variable, which we created by combining the "Battles," "Explosions/Remote violence," and "Violence against civilians" categories.	ACLED
Battle indicator	We measured battles by using the "event_type" variable.	ACLED
Number of violent events	We measured violent events by using the "event_type" variable, which we created by combining the "Battles," "Explosions/Remote violence," and "Violence against civilians" categories.	ACLED
Number of battles	We measured battles by using the "event_type" variable.	ACLED
Independent variable	Description	
Policy indicator	The variable takes non-zero values for policy-treated second-level administrative units, beginning in July 2010. In the month, the variable takes a value of 0.33 because the Dodd-Frank Act—which required the U.S. Securities and Exchange Commission (SEC) to promulgate the conflict minerals disclosure rule—was enacted July 21, 2010. ^a For subsequent months, the variable takes a value of one.	N/A
Interaction between policy indicator and number of gold mines	The variable is the product of the policy indicator and the total number of artisanal gold mines within the second-level administrative unit. We used the count of unique mines in 2004–2022.	IPIS
Interaction between policy indicator and number of 3T mines	The variable is the product of the policy indicator and the total number of artisanal tantalum, tin, or tungsten mines with the second-level administrative unit. We used the count of unique mines in 2004–2022.	IPIS
Interaction between mineral prices and number of mines	The variable is the product of the monthly price of each mineral and the total number of artisanal mines of the same mineral within the same second-level administrative unit. We used the count of unique mines in 2004–2022. For each unit, there are separate variables for tantalum, tin, tungsten, and gold.	Bloomberg Terminal and IPIS
Number of violent events in neighboring locations	The variable is the sum of violent events in contiguous second-level administrative units.	ACLED
Number of battles in neighboring locations	The variable is the sum of battles in contiguous second-level administrative units.	ACLED
Rainfall levels	The variable is the difference between monthly precipitation and the monthly average specific to each second-level administrative unit for 1982–2022.	CHIRPS
Wet season indicator	The variable takes a value of 1 for the 3 months with the greatest average precipitation, based on unit-specific monthly precipitation averages for 1982–2022.	CHIRPS
Dry season indicator	The variable takes a value of 1 for the 3 months with the lowest average precipitation, based on unit-specific monthly precipitation averages for 1982–2022.	CHIRPS
Location indicators	There is a variable for each of the 90 second-level administrative units.	ACLED
Time indicators	There is a variable for each month except the first, which is omitted.	N/A

Legend: ACLED = Armed Conflict Location and Event Data; CHIRPS = Climate Hazards group InfraRed Precipitation with Stations; DRC = Democratic Republic of the Congo; IPIS = International Peace Information Service; N/A = not applicable; SEC = Securities and Exchange Commission.

Source: GAO analysis of data from ACLED, CHIRPS, Bloomberg Terminal, and IPIS. | GAO-25-107018

Note: The variables are measured for second-level administrative units for each month from July 2004 through December 2022. The policy-treated second-level administrative units are Bafwasende; Kalemie; Mambasa; Manono; Nyunzu; and all of the second-level administrative units in Maniema, North Kivu and South Kivu.

^aPub. L. No. 111-203, 124 Stat. 1376 (2010).

We used July 2010—the enactment date of the Dodd-Frank Act, which required SEC to promulgate the conflict minerals disclosure rule—as the intervention’s starting date.⁷ We chose this date because, although SEC finalized the rule in 2012 and began requiring disclosures in 2014, stakeholders began taking actions in anticipation of the rule immediately after the act’s enactment.⁸ Using July 2010 as the intervention’s starting date allowed us to estimate the disclosure rule’s overall association with violence.⁹ We defined the preintervention period as July 2004 through June 2010 and the postintervention period as August 2010 through December 2022.¹⁰

We analyzed two sets of outcomes:

- **Indicator outcomes.** Following the empirical literature we reviewed, we used a linear probability regression model with indicator outcomes of (1) the occurrence of any violent event and (2) the occurrence of any battle.¹¹ Using the estimated model coefficients allowed us to quantify a positive or negative association with the occurrence of violent events or battles as well as the strength of that relationship.
- **Count outcomes.** We also modeled the number of violent events and battles using a generalized linear count model. Specifically, the Poisson model provides an estimated ratio of event rates between two groups (i.e., an incidence rate ratio). This estimate quantifies the magnitude and direction of the association with the number of violent events and battles. To test the sensitivity of our results to this choice, we used ordinary least squares regressions.

The linear probability model with indicator outcomes was our preferred specification because it minimized the effect that any changes in reporting due to the enactment of the Dodd-Frank Act might have had on our analysis.¹² For example, increased reporting could have led us to conclude erroneously that violence increased over time. A linear probability model reduces vulnerability to measurement error because its outcome measures the presence of any violence rather than the number of violent events.

Our model draws on a 2013 study that examines the effect of Section of 1502 of the Dodd-Frank Act¹³ on violence in eastern DRC.¹⁴ Specifically, we estimated variants of the following:

⁷Pub. L. No. 111-203, § 1502.

⁸77 Fed. Reg. 56,274 (Sept. 12, 2012). For example, President Joseph Kabila announced a ban on artisanal mineral exploitation in eastern DRC that lasted from September 2010 until March 2011. Similarly, two global coalitions of major electronic companies announced in 2011 that they had stopped buying affected minerals from smelters that could not prove their source minerals were not connected to conflict in the DRC. Moreover, during our interviews with industry stakeholders, company representatives said they began preparing for the SEC disclosure rule before 2012.

⁹Because of the absence of systematic data on peace and security, we focus on the rule’s association with violence, including any associated diplomatic efforts and responses by governments, companies, and actors, to the extent that these are not captured by the fixed effects.

¹⁰We began our analysis with 2004 to avoid including violence from the Second Congo War, which ended in 2003. We use July 2004 as the starting date because data about mineral prices was not available for earlier dates. Similar empirical studies also begin with 2004. See Bloem, “Good Intentions Gone Bad?”; Parker and Vadheim, “Resource Cursed or Policy Cursed?”; and Stoop, Verpoorten, and van der Windt, “More Legislation, More Violence?”

¹¹Bloem, “Good Intentions Gone Bad?”; Parker and Vadheim, “Resource Cursed or Policy Cursed?”; and Stoop, Verpoorten, and van der Windt, “More Legislation, More Violence?”

¹²The empirical literature used indicator outcomes for similar reasons. See Bloem, “Good Intentions Gone Bad?”; Parker and Vadheim, “Resource Cursed or Policy Cursed?”; and Stoop, Verpoorten, and van der Windt, “More Legislation, More Violence?”

¹³Pub. L. No. 111-203, § 1502.

¹⁴Parker and Vadheim, “Resource Cursed or Policy Cursed?”

$$E(\text{violence}_{itk}) = \delta_i + \mu_t + \beta_1 \text{policy}_{it} + \beta_2 (\text{policy}_{it} * \text{gold}_i) + \beta_3 (\text{policy}_{it} * 3T_i) + \sum_{m=1}^4 \lambda_m (\text{mine}_{im} * \text{price}_{tm}) + \sum_{k=1}^3 \gamma_k \text{season}_i + \sum_{x=0}^2 \eta_x \text{rain}_{i,t-x} + \sum_{x=1}^3 \alpha_x \text{violence}_{i,t-x} + \sum_{x=0}^1 \theta_x \text{adj. violence}_{i,t-x}$$

Here, *i* denotes the 90 second-level administrative units; *t* denotes the maximum 222 months spanning July 2004 through December 2022; *k* denotes the season (wet, dry, neither); and *m* denotes the four minerals—gold, tantalum, tin, and tungsten. E(.) is the expectation of the relevant outcome distribution, conditional on the covariates and parameters.

The notation δ_i represents the maximum 90 second-level administrative unit fixed effects and μ_t represents the maximum 222 month time fixed effects. (The fixed-effects model controls for factors that remained constant across time within each second-level administrative unit, such as geographical characteristics, and for time-specific countrywide factors that affected each unit, such as elections.)

The coefficients λ_m measure the relationships between violence and monthly world mineral prices for each of the *m* minerals—tantalum, tin, tungsten, and gold—interacted with the number of each type of mine in the second-level administrative unit. The coefficients γ_k measure seasonal rainfall patterns, while the η_x coefficients measure the effects of contemporaneous and lagged rainfall anomalies on violence.¹⁵ Finally, α_x and θ_x respectively control for the local persistence of violence by including lags for the amount of violence in previous months and potential spatial spillovers, using the aggregate amount of violence in all adjacent units.¹⁶ Our regression analysis clustered standard errors at the second-level administrative unit to account for possible serial correlation within units.¹⁷

The primary factors of interest in our regression models were as follows:

- **Policy indicator.** The β_1 coefficient represents the average association of the SEC disclosure rule with violence—whether the presence of any violence or the amount of violence—in each “treated” second-level

¹⁵Rainfall anomalies were measured using deviations from normal rainfall conditions for each unit. We included the deviation and its square. See Table 1 for further information.

¹⁶The use of dynamic and spatial lags of violence in our model tests for robustness of the estimated effect of the policy, and our results are robust to the exclusion of these variables. However, the use of these lags also introduces bias in the estimates of the lags. The use of dynamic lags introduces the “Nickell Bias.” To the extent to which violence across time is positively serially correlated, the estimated effect of lagged violence will understate the true persistence of violence by a factor that decreases with the number of time periods. Because the number of time periods is relatively large in our case, this bias is likely small. The use of spatial lags of violence also introduces a simultaneity or reflection problem. If violence among neighbors is positively serially correlated, the estimated effect of spillovers of violence will overstate the true effect of violence in the neighboring territories. Controlling for total violence in adjacent areas could also understate the estimated effect of the policy variable if the policy indicator is positively correlated with adjacent violence. For more information about Nickell Bias, see Stephen Nickell, “Biases in Dynamic Models with Fixed Effects,” *Econometrica*, vol. 49, no. 6 (1981); and Luc Anselin, “Under the Hood: Issues in the Specification and Interpretation of Spatial Regression Models,” *Agricultural Economics*, vol. 27 (2002).

¹⁷Serial or autocorrelation occurs in time-series data when the residual error for one time period is correlated with that of another time period. This could occur due to a relationship between a variable in one time period and the same variable in earlier time periods. For example, the current value of a mineral partially reflects its value in prior time periods. Not accounting for serial correlation could result in estimates of variance which are too small, which increases the chance of detecting a significant effect when the effect is not actually significant.

administrative unit, all else equal, from July 2010 through December 2022.¹⁸ The coefficient assigns “treatment” to the units that were likely to be most affected by the disclosure rule. We followed the empirical literature by defining treatment as the union of second-level administrative units for which mining was banned and the units containing at least one mine with geocoordinates as shown in State’s 2011 Section 1502 map of conflict mining zones.¹⁹

- **Interaction of the policy indicator and the number of gold mines.** The β_2 coefficient represents the additional effect of the SEC disclosure rule for each additional gold mine within a treated second-level administrative unit. This coefficient allows the association of the disclosure rule with violence to vary on the basis of the number of gold mines.
- **Interaction of the policy indicator and the number of tantalum, tin, and tungsten (3T) mines.** The β_3 coefficient represents the additional effect of the SEC disclosure rule for each 3T mine within the treated second-level administrative unit. This coefficient allows the association of the disclosure rule with violence to vary on the basis of the number of 3T mines. Table 2 provides summary statistics for the variables we used in the regression analysis.

Table 2: Summary Statistics of Variables Used in Regression Analysis to Estimate Association between SEC Conflict Minerals Disclosure Rule and Violence in Eastern DRC

Number of observations: 19,710

Variable	Mean	Standard deviation	Minimum value	Maximum value
Violent event indicator	0.18	0.38	0	1
Battle indicator	0.11	0.32	0	1
Number of violent events	0.87	3.94	0	96
Number of battles	0.44	2.22	0	79
Policy indicator	0.27	0.44	0	1
Interaction between policy indicator and number of gold mines	13.04	45.13	0.00	279.00
Interaction between policy indicator and number of 3T mines	6.58	20.96	0.00	131.00
Interaction between gold prices and number of gold mines	536.24	669.64	0.00	1975.86
Interaction between tantalum prices and number of tantalum mines	17.45	32.87	0.00	131.00
Interaction between tin prices and number of tin mines	2.63	4.38	0.00	20.49
Interaction between tungsten prices and number of tungsten mines	39.58	100.70	0.00	473.00

¹⁸In the models with indicator outcomes, a statistically significant positive coefficient indicates an associated increase in the likelihood of any violence. In the ordinary least squares models with count outcomes, a statistically significant positive coefficient indicates an associated increase in the amount of violence. In the negative binomial and Poisson models with count outcomes, a statistically significant coefficient greater than one indicates an association with increased rate of violence. This also applies for the interactions between the policy indicator and the number of mines. We use the 5 percent level as the threshold for statistical significance in the analysis.

¹⁹Mining was banned in all of the second-level administrative units in Maniema, North Kivu and South Kivu Provinces. Bafwasende, Kalemie, Mambasa, Manono, and Nyunzu had at least one mine with geocoordinates with State’s map of conflict mining zones.

administrative unit, all else equal, from July 2010 through December 2022.¹⁸ The coefficient assigns “treatment” to the units that were likely to be most affected by the disclosure rule. We followed the empirical literature by defining treatment as the union of second-level administrative units for which mining was banned and the units containing at least one mine with geocoordinates as shown in State’s 2011 Section 1502 map of conflict mining zones.¹⁹

- **Interaction of the policy indicator and the number of gold mines.** The XX coefficient represents the additional effect of the SEC disclosure rule for each additional gold mine within a treated second-level administrative unit. This coefficient allows the association of the disclosure rule with violence to vary on the basis of the number of gold mines.
- **Interaction of the policy indicator and the number of tantalum, tin, and tungsten (3T) mines.** The XX coefficient represents the additional effect of the SEC disclosure rule for each 3T mine within the treated second-level administrative unit. This coefficient allows the association of the disclosure rule with violence to vary on the basis of the number of 3T mines. Table 2 provides summary statistics for the variables we used in the regression analysis.

Table 2: Summary Statistics of Variables Used in Regression Analysis to Estimate Association between SEC Conflict Minerals Disclosure Rule and Violence in Eastern DRC

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Variable	Mean	Standard deviation	Minimum value	Maximum value
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Battle indicator	0.11	0.32	0	1
Number of violent events	0.87	3.94	0	96
Number of battles	0.44	2.22	0	79
Policy indicator	0.27	0.44	0	1
Interaction between policy indicator and number of gold mines	13.04	45.13	0.00	279.00
Interaction between policy indicator and number of 3T mines	6.58	20.96	0.00	131.00
Interaction between gold prices and number of gold mines	536.24	669.64	0.00	1975.86
Interaction between tantalum prices and number of tantalum mines	17.45	32.87	0.00	131.00
Interaction between tin prices and number of tin mines	2.63	4.38	0.00	20.49
Interaction between tungsten prices and number of tungsten mines	39.58	100.70	0.00	473.00

¹⁸In the models with indicator outcomes, a statistically significant positive coefficient indicates an associated increase in the likelihood of any violence. In the ordinary least squares models with count outcomes, a statistically significant positive coefficient indicates an associated increase in the amount of violence. In the negative binomial and Poisson models with count outcomes, a statistically significant coefficient greater than one indicates an association with increased rate of violence. This also applies for the interactions between the policy indicator and the number of mines. We use the 5 percent level as the threshold for statistical significance in the analysis.

¹⁹Mining was banned in all of the second-level administrative units in Maniema, North Kivu and South Kivu Provinces. Bafwasende, Kalemie, Mambasa, Manono, and Nyunzu had at least one mine with geocoordinates with State’s map of conflict mining zones.

Appendix II: Regression Analysis of SEC Conflict Minerals Disclosure Rule's Effect on Violence in Eastern DRC

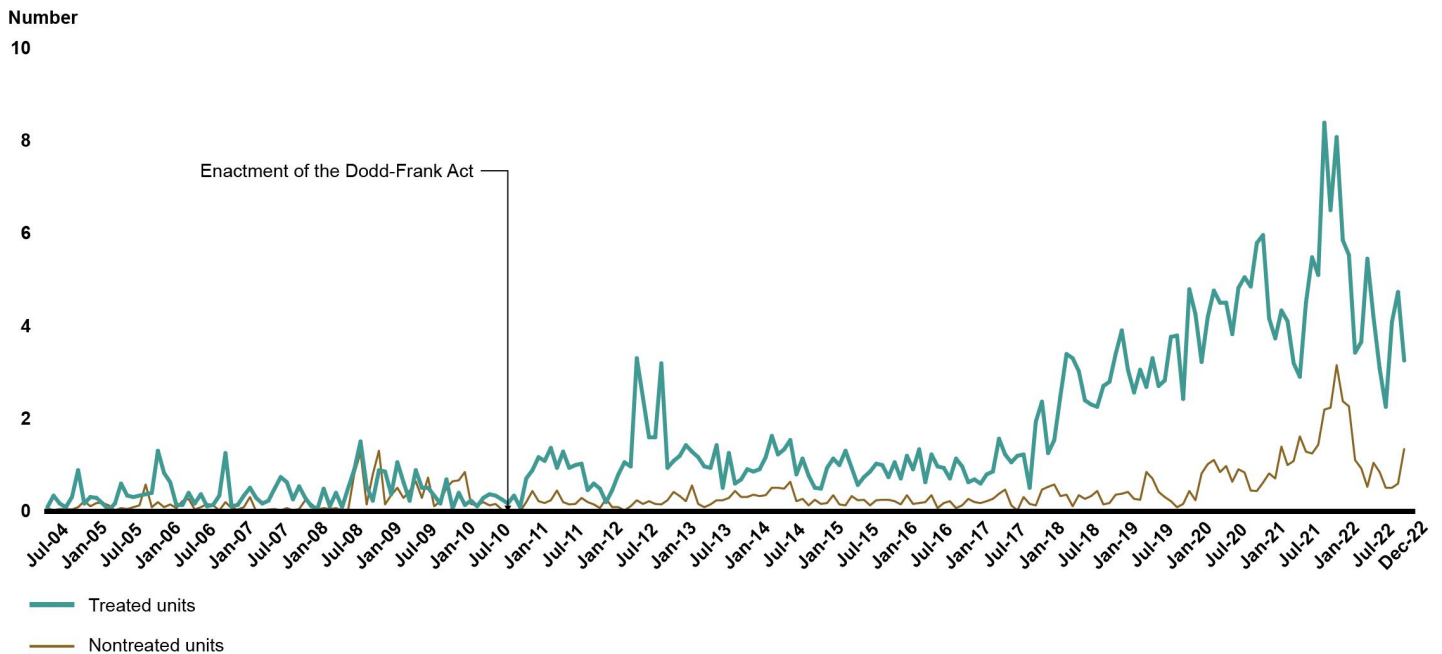
Variable	Mean	Standard deviation	Minimum value	Maximum value
Number of violent events in neighboring locations	3.80	9.89	0	149
Number of battles in neighboring locations	1.97	5.46	0	82
Rainfall levels	-0.01	0.36	-1.91	2.89
Wet season indicator	0.25	0.44	0	1
Dry season indicator	0.25	0.43	0	1

Source: GAO analysis of data from Armed Conflict Location and Event Data, Climate Hazards group InfraRed Precipitation with Stations, Bloomberg Terminal, and International Peace Information Service. | GAO-25-107018

Note: The SEC Disclosure Rule can be found at 77 Fed. Reg. 56,274 (Sept 12, 2012), codified at 17 C.F.R. § 240.13p-1.

The identifying assumption is the parallel trends assumption: In the absence of treatment, the difference in violence between the treated and nontreated groups would remain constant over time. Figures 14 and 15 show the average monthly number of violent events and battles, respectively, for treated and nontreated second-level administrative units. As the figures show, we found no evidence of an upward trend in the period immediately preceding the enactment of the Dodd-Frank Act. While there is no one-to-one relationship, we generally found similar trends in violent events and battles before the Dodd-Frank Act's enactment. After its enactment, the number of violent events and battles in treated units increased compared with nontreated units.

Figure 14: Average Monthly Number of Violent Events in Treated and Nontreated Second-Level Administrative Units of Eastern DRC, July 2004–Dec. 2022



DRC = Democratic Republic of the Congo.

Source: GAO analysis of data from the Armed Conflict Location & Event Data. | GAO-25-107018

Appendix II: Regression Analysis of SEC Conflict Minerals Disclosure Rule's Effect on Violence in Eastern DRC

Accessible Data for Figure 14: Average Monthly Number of Violent Events in Treated and Nontreated Second-Level Administrative Units of Eastern DRC, July 2004–Dec. 2022

Date	More directly affected territories	Less directly affected territories
Jul-04	0.09	0.07
Aug-04	0.34	0.02
Sep-04	0.17	0.05
Oct-04	0.09	0.05
Nov-04	0.31	0.04
Dec-04	0.89	0.09
Jan-05	0.17	0.22
Feb-05	0.31	0.11
Mar-05	0.29	0.18
Apr-05	0.17	0.18
May-05	0.03	0.13
Jun-05	0.17	0.02
Jul-05	0.60	0.07
Aug-05	0.34	0.05
Sep-05	0.31	0.09
Oct-05	0.34	0.13
Nov-05	0.37	0.58
Dec-05	0.40	0.09
Jan-06	1.31	0.20
Feb-06	0.83	0.09
Mar-06	0.63	0.15
Apr-06	0.14	0.07
May-06	0.14	0.22
Jun-06	0.40	0.27
Jul-06	0.17	0.04
Aug-06	0.37	0.09
Sep-06	0.11	0.16
Oct-06	0.14	0.13
Nov-06	0.34	0.02
Dec-06	1.26	0.20
Jan-07	0.11	0.07
Feb-07	0.14	0.04
Mar-07	0.34	0.09
Apr-07	0.51	0.31
May-07	0.29	0.00
Jun-07	0.17	0.02
Jul-07	0.23	0.04
Aug-07	0.49	0.05

Appendix II: Regression Analysis of SEC Conflict Minerals Disclosure Rule's Effect on Violence in Eastern DRC

Date	More directly affected territories	Less directly affected territories
Sep-07	0.74	0.02
Oct-07	0.63	0.07
Nov-07	0.26	0.02
Dec-07	0.54	0.05
Jan-08	0.29	0.24
Feb-08	0.11	0.16
Mar-08	0.06	0.04
Apr-08	0.49	0.07
May-08	0.11	0.05
Jun-08	0.40	0.07
Jul-08	0.09	0.02
Aug-08	0.51	0.04
Sep-08	0.91	0.82
Oct-08	1.51	1.27
Nov-08	0.54	0.15
Dec-08	0.23	0.80
Jan-09	0.89	1.31
Feb-09	0.86	0.15
Mar-09	0.37	0.35
Apr-09	1.06	0.51
May-09	0.63	0.29
Jun-09	0.23	0.44
Jul-09	0.89	0.65
Aug-09	0.51	0.29
Sep-09	0.51	0.73
Oct-09	0.34	0.11
Nov-09	0.17	0.22
Dec-09	0.69	0.51
Jan-10	0.06	0.65
Feb-10	0.40	0.67
Mar-10	0.14	0.85
Apr-10	0.23	0.16
May-10	0.11	0.13
Jun-10	0.29	0.20
Jul-10	0.37	0.13
Aug-10	0.34	0.16
Sep-10	0.26	0.04
Oct-10	0.17	0.00
Nov-10	0.34	0.00
Dec-10	0.09	0.00

Appendix II: Regression Analysis of SEC Conflict Minerals Disclosure Rule's Effect on Violence in Eastern DRC

Date	More directly affected territories	Less directly affected territories
Jan-11	0.71	0.20
Feb-11	0.89	0.44
Mar-11	1.17	0.22
Apr-11	1.09	0.18
May-11	1.37	0.24
Jun-11	0.94	0.45
Jul-11	1.29	0.20
Aug-11	0.94	0.15
Sep-11	1.00	0.16
Oct-11	1.03	0.29
Nov-11	0.46	0.20
Dec-11	0.60	0.15
Jan-12	0.49	0.07
Feb-12	0.20	0.27
Mar-12	0.46	0.09
Apr-12	0.80	0.09
May-12	1.06	0.02
Jun-12	0.97	0.11
Jul-12	3.31	0.24
Aug-12	2.46	0.16
Sep-12	1.60	0.22
Oct-12	1.60	0.16
Nov-12	3.20	0.15
Dec-12	0.94	0.24
Jan-13	1.09	0.42
Feb-13	1.20	0.33
Mar-13	1.43	0.22
Apr-13	1.29	0.56
May-13	1.17	0.16
Jun-13	0.97	0.09
Jul-13	0.94	0.15
Aug-13	1.43	0.24
Sep-13	0.51	0.24
Oct-13	1.26	0.29
Nov-13	0.60	0.44
Dec-13	0.69	0.31
Jan-14	0.91	0.31
Feb-14	0.86	0.36
Mar-14	0.91	0.33
Apr-14	1.17	0.35

Appendix II: Regression Analysis of SEC Conflict Minerals Disclosure Rule's Effect on Violence in Eastern DRC

Date	More directly affected territories	Less directly affected territories
May-14	1.63	0.51
Jun-14	1.23	0.51
Jul-14	1.34	0.49
Aug-14	1.54	0.64
Sep-14	0.80	0.22
Oct-14	1.14	0.27
Nov-14	0.77	0.13
Dec-14	0.51	0.25
Jan-15	0.49	0.16
Feb-15	0.94	0.18
Mar-15	1.14	0.35
Apr-15	1.00	0.15
May-15	1.31	0.13
Jun-15	0.94	0.33
Jul-15	0.57	0.24
Aug-15	0.74	0.25
Sep-15	0.86	0.13
Oct-15	1.03	0.24
Nov-15	1.00	0.25
Dec-15	0.74	0.25
Jan-16	1.06	0.22
Feb-16	0.71	0.15
Mar-16	1.20	0.35
Apr-16	0.91	0.16
May-16	1.34	0.18
Jun-16	0.63	0.20
Jul-16	1.23	0.35
Aug-16	0.97	0.07
Sep-16	0.94	0.18
Oct-16	0.71	0.22
Nov-16	1.14	0.07
Dec-16	0.97	0.13
Jan-17	0.63	0.27
Feb-17	0.69	0.20
Mar-17	0.60	0.18
Apr-17	0.80	0.22
May-17	0.86	0.27
Jun-17	1.57	0.38
Jul-17	1.23	0.47
Aug-17	1.06	0.13

Appendix II: Regression Analysis of SEC Conflict Minerals Disclosure Rule's Effect on Violence in Eastern DRC

Date	More directly affected territories	Less directly affected territories
Sep-17	1.20	0.02
Oct-17	1.23	0.31
Nov-17	0.51	0.16
Dec-17	1.94	0.13
Jan-18	2.37	0.47
Feb-18	1.26	0.53
Mar-18	1.54	0.58
Apr-18	2.49	0.33
May-18	3.40	0.36
Jun-18	3.31	0.11
Jul-18	3.03	0.35
Aug-18	2.40	0.27
Sep-18	2.31	0.33
Oct-18	2.26	0.44
Nov-18	2.71	0.15
Dec-18	2.80	0.18
Jan-19	3.40	0.36
Feb-19	3.91	0.38
Mar-19	3.06	0.42
Apr-19	2.57	0.27
May-19	3.06	0.25
Jun-19	2.69	0.85
Jul-19	3.31	0.71
Aug-19	2.71	0.42
Sep-19	2.83	0.31
Oct-19	3.77	0.22
Nov-19	3.80	0.09
Dec-19	2.43	0.16
Jan-20	4.80	0.44
Feb-20	4.26	0.24
Mar-20	3.23	0.82
Apr-20	4.20	1.02
May-20	4.77	1.11
Jun-20	4.51	0.85
Jul-20	4.51	0.98
Aug-20	3.83	0.64
Sep-20	4.83	0.91
Oct-20	5.06	0.84
Nov-20	4.86	0.45
Dec-20	5.80	0.44

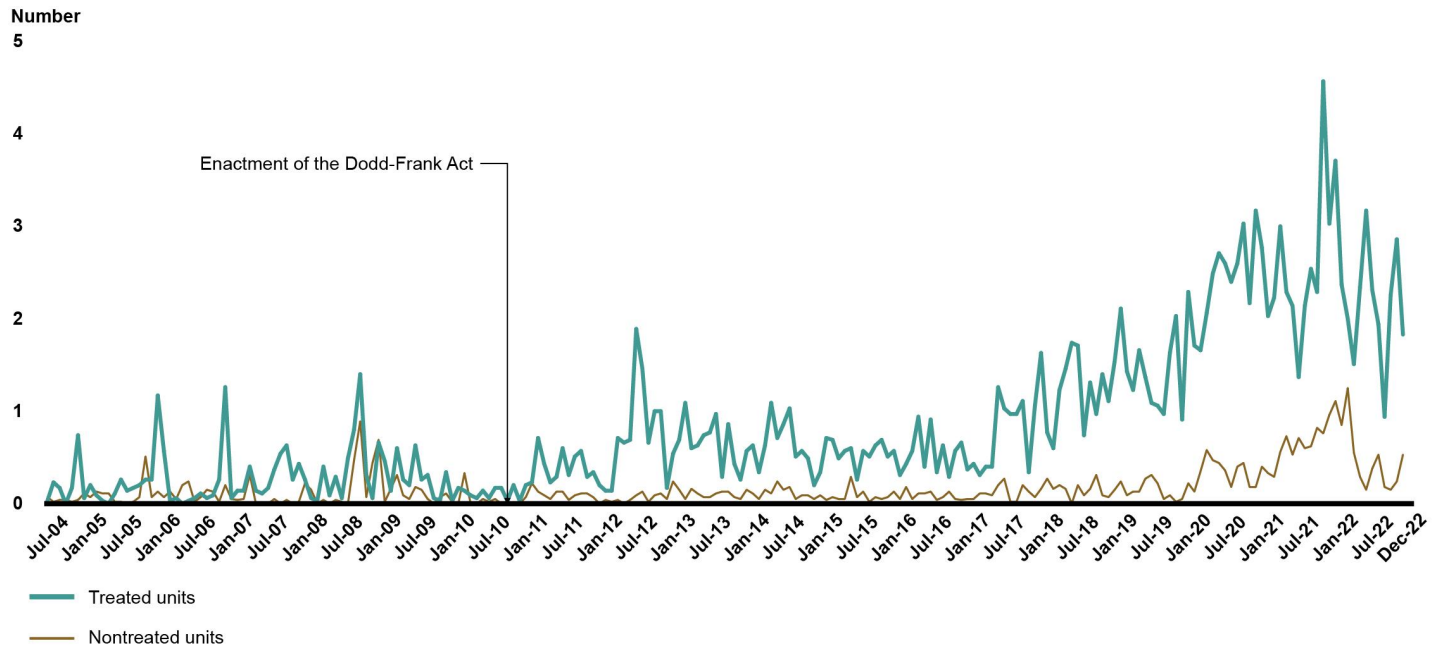
Appendix II: Regression Analysis of SEC Conflict Minerals Disclosure Rule's Effect on Violence in Eastern DRC

Date	More directly affected territories	Less directly affected territories
Jan-21	5.97	0.62
Feb-21	4.17	0.82
Mar-21	3.74	0.71
Apr-21	4.34	1.40
May-21	4.11	1.00
Jun-21	3.20	1.09
Jul-21	2.91	1.62
Aug-21	4.51	1.29
Sep-21	5.49	1.25
Oct-21	5.11	1.44
Nov-21	8.40	2.20
Dec-21	6.51	2.24
Jan-22	8.09	3.16
Feb-22	5.86	2.38
Mar-22	5.54	2.27
Apr-22	3.43	1.11
May-22	3.66	0.93
Jun-22	5.46	0.53
Jul-22	4.20	1.05
Aug-22	3.09	0.85
Sep-22	2.26	0.51
Oct-22	4.09	0.51
Nov-22	4.74	0.60
Dec-22	3.26	1.35

Source: GAO analysis of data from the Armed Conflict Location & Event Data. GAO-25-107018

Note: Violent events are measured at the second-level administrative unit (i.e., territory or city). Treated units are the second-level administrative units that were likely to be most affected by the Securities and Exchange Commission's conflict minerals disclosure rule. 77 Fed. Reg. 56,274 (Sept. 12, 2012), codified at 17 C.F.R. § 240.13p-1. Nontreated units are those that were likely to be less affected by the rule.

Figure 15: Average Monthly Number of Battles in Treated and Nontreated Second-Level Administrative Units of Eastern DRC, July 2004–Dec. 2022



DRC = Democratic Republic of the Congo.

Source: GAO analysis of data from the Armed Conflict Location & Event Data. | GAO-25-107018

Accessible Data for Figure 15: Average Monthly Number of Battles in Treated and Nontreated Second-Level Administrative Units of Eastern DRC, July 2004–Dec. 2022

Date	More directly affected territories	Less directly affected territories
Jul-04	0.03	0.07
Aug-04	0.23	0.02
Sep-04	0.17	0.04
Oct-04	0.00	0.04
Nov-04	0.17	0.02
Dec-04	0.74	0.04
Jan-05	0.06	0.11
Feb-05	0.20	0.07
Mar-05	0.09	0.13
Apr-05	0.03	0.11
May-05	0.00	0.11
Jun-05	0.11	0.02
Jul-05	0.26	0.02
Aug-05	0.14	0.00
Sep-05	0.17	0.02
Oct-05	0.20	0.07

Appendix II: Regression Analysis of SEC Conflict Minerals Disclosure Rule's Effect on Violence in Eastern DRC

Date	More directly affected territories	Less directly affected territories
Nov-05	0.26	0.51
Dec-05	0.26	0.07
Jan-06	1.17	0.13
Feb-06	0.57	0.07
Mar-06	0.03	0.13
Apr-06	0.06	0.05
May-06	0.00	0.20
Jun-06	0.03	0.24
Jul-06	0.06	0.02
Aug-06	0.11	0.07
Sep-06	0.06	0.15
Oct-06	0.09	0.13
Nov-06	0.26	0.02
Dec-06	1.26	0.20
Jan-07	0.06	0.05
Feb-07	0.14	0.04
Mar-07	0.14	0.05
Apr-07	0.40	0.31
May-07	0.14	0.00
Jun-07	0.11	0.00
Jul-07	0.17	0.00
Aug-07	0.37	0.05
Sep-07	0.54	0.00
Oct-07	0.63	0.04
Nov-07	0.26	0.00
Dec-07	0.43	0.02
Jan-08	0.26	0.22
Feb-08	0.06	0.15
Mar-08	0.03	0.00
Apr-08	0.40	0.04
May-08	0.09	0.00
Jun-08	0.29	0.04
Jul-08	0.06	0.02
Aug-08	0.49	0.00
Sep-08	0.80	0.47
Oct-08	1.40	0.89
Nov-08	0.31	0.07
Dec-08	0.06	0.44
Jan-09	0.66	0.69
Feb-09	0.46	0.02

Appendix II: Regression Analysis of SEC Conflict Minerals Disclosure Rule's Effect on Violence in Eastern DRC

Date	More directly affected territories	Less directly affected territories
Mar-09	0.14	0.16
Apr-09	0.60	0.31
May-09	0.26	0.09
Jun-09	0.20	0.05
Jul-09	0.63	0.18
Aug-09	0.26	0.15
Sep-09	0.31	0.05
Oct-09	0.06	0.00
Nov-09	0.03	0.07
Dec-09	0.34	0.11
Jan-10	0.03	0.02
Feb-10	0.17	0.00
Mar-10	0.14	0.33
Apr-10	0.09	0.00
May-10	0.06	0.00
Jun-10	0.14	0.05
Jul-10	0.06	0.02
Aug-10	0.17	0.05
Sep-10	0.17	0.00
Oct-10	0.03	0.00
Nov-10	0.20	0.00
Dec-10	0.03	0.00
Jan-11	0.20	0.07
Feb-11	0.23	0.22
Mar-11	0.71	0.13
Apr-11	0.43	0.09
May-11	0.23	0.05
Jun-11	0.29	0.13
Jul-11	0.60	0.13
Aug-11	0.31	0.04
Sep-11	0.51	0.09
Oct-11	0.57	0.11
Nov-11	0.29	0.11
Dec-11	0.34	0.07
Jan-12	0.20	0.00
Feb-12	0.14	0.04
Mar-12	0.14	0.02
Apr-12	0.71	0.04
May-12	0.66	0.00
Jun-12	0.69	0.04

Appendix II: Regression Analysis of SEC Conflict Minerals Disclosure Rule's Effect on Violence in Eastern DRC

Date	More directly affected territories	Less directly affected territories
Jul-12	1.89	0.09
Aug-12	1.46	0.13
Sep-12	0.66	0.02
Oct-12	1.00	0.09
Nov-12	1.00	0.11
Dec-12	0.17	0.05
Jan-13	0.54	0.24
Feb-13	0.69	0.15
Mar-13	1.09	0.05
Apr-13	0.60	0.16
May-13	0.63	0.11
Jun-13	0.74	0.07
Jul-13	0.77	0.07
Aug-13	0.97	0.11
Sep-13	0.29	0.13
Oct-13	0.86	0.13
Nov-13	0.43	0.07
Dec-13	0.26	0.05
Jan-14	0.57	0.15
Feb-14	0.63	0.11
Mar-14	0.34	0.05
Apr-14	0.63	0.15
May-14	1.09	0.11
Jun-14	0.71	0.24
Jul-14	0.86	0.15
Aug-14	1.03	0.18
Sep-14	0.51	0.05
Oct-14	0.57	0.09
Nov-14	0.49	0.09
Dec-14	0.20	0.05
Jan-15	0.34	0.09
Feb-15	0.71	0.04
Mar-15	0.69	0.07
Apr-15	0.49	0.05
May-15	0.57	0.05
Jun-15	0.60	0.29
Jul-15	0.26	0.07
Aug-15	0.57	0.13
Sep-15	0.51	0.02
Oct-15	0.63	0.07

Appendix II: Regression Analysis of SEC Conflict Minerals Disclosure Rule's Effect on Violence in Eastern DRC

Date	More directly affected territories	Less directly affected territories
Nov-15	0.69	0.05
Dec-15	0.51	0.07
Jan-16	0.57	0.13
Feb-16	0.31	0.05
Mar-16	0.43	0.18
Apr-16	0.57	0.05
May-16	0.94	0.11
Jun-16	0.40	0.11
Jul-16	0.91	0.13
Aug-16	0.34	0.04
Sep-16	0.63	0.07
Oct-16	0.29	0.13
Nov-16	0.57	0.05
Dec-16	0.66	0.04
Jan-17	0.37	0.05
Feb-17	0.43	0.05
Mar-17	0.31	0.11
Apr-17	0.40	0.11
May-17	0.40	0.09
Jun-17	1.26	0.20
Jul-17	1.03	0.27
Aug-17	0.97	0.02
Sep-17	0.97	0.02
Oct-17	1.11	0.20
Nov-17	0.34	0.13
Dec-17	1.06	0.07
Jan-18	1.63	0.16
Feb-18	0.77	0.27
Mar-18	0.60	0.16
Apr-18	1.23	0.20
May-18	1.46	0.16
Jun-18	1.74	0.00
Jul-18	1.71	0.20
Aug-18	0.74	0.09
Sep-18	1.31	0.16
Oct-18	0.97	0.31
Nov-18	1.40	0.09
Dec-18	1.11	0.07
Jan-19	1.54	0.15
Feb-19	2.11	0.24

Appendix II: Regression Analysis of SEC Conflict Minerals Disclosure Rule's Effect on Violence in Eastern DRC

Date	More directly affected territories	Less directly affected territories
Mar-19	1.43	0.09
Apr-19	1.23	0.13
May-19	1.66	0.13
Jun-19	1.37	0.27
Jul-19	1.09	0.31
Aug-19	1.06	0.22
Sep-19	0.97	0.05
Oct-19	1.63	0.09
Nov-19	2.03	0.02
Dec-19	0.91	0.05
Jan-20	2.29	0.22
Feb-20	1.71	0.13
Mar-20	1.66	0.35
Apr-20	2.06	0.58
May-20	2.49	0.47
Jun-20	2.71	0.44
Jul-20	2.60	0.36
Aug-20	2.40	0.18
Sep-20	2.60	0.40
Oct-20	3.03	0.44
Nov-20	2.17	0.18
Dec-20	3.17	0.18
Jan-21	2.77	0.40
Feb-21	2.03	0.33
Mar-21	2.23	0.29
Apr-21	3.00	0.56
May-21	2.29	0.73
Jun-21	2.14	0.53
Jul-21	1.37	0.71
Aug-21	2.14	0.60
Sep-21	2.54	0.62
Oct-21	2.29	0.82
Nov-21	4.57	0.76
Dec-21	3.03	0.96
Jan-22	3.71	1.11
Feb-22	2.37	0.85
Mar-22	2.00	1.25
Apr-22	1.51	0.55
May-22	2.34	0.29
Jun-22	3.17	0.15

Appendix II: Regression Analysis of SEC Conflict Minerals Disclosure Rule's Effect on Violence in Eastern DRC

Date	More directly affected territories	Less directly affected territories
Jul-22	2.31	0.38
Aug-22	1.94	0.53
Sep-22	0.94	0.18
Oct-22	2.26	0.15
Nov-22	2.86	0.24
Dec-22	1.83	0.53

Source: GAO analysis of data from the Armed Conflict Location & Event Data. GAO-25-107018

Note: Battles are measured at the second-level administrative unit (i.e., territory or city). Treated units are the second-level administrative units that were likely to be most affected by the Securities and Exchange Commission's conflict minerals disclosure rule. 77 Fed. Reg. 56,274 (Sept. 12, 2012), codified at 17 C.F.R. § 240.13p-1. Nontreated units are those that were likely to be less affected by the rule.

Results

To analyze the association of the SEC conflict minerals disclosure rule with violence in eastern DRC, we used both indicator and count outcomes for violent events and battles. Our analysis found that the rule was not associated with an overall decrease in the occurrence of any violence and was associated with an increased spread of violence in second-level administrative units containing gold mines treated by the policy.

Analysis of the Spread of Violence

Our preferred model, a linear probability model, estimated the association of the SEC disclosure rule with the occurrence of any violent event. The estimated coefficient for the policy indicator was not statistically significant, which implies that the rule was not associated with an overall increase in the occurrence of any violence. In second-level administrative units with gold mines, the effect of the rule was associated with an additional spread of violent events, with an estimated 69 percent increase in treated areas with an average number of gold mines.²⁰

We examined the robustness of the results from the linear probability model by testing alternative assumptions and found broadly comparable results.

- **Kivu Security Tracker.** We examined whether the disclosure rule's association with the spread of violence was due to the ACLED database's reliance on events data sourced from the Kivu Security Tracker.²¹ Established in 2017, the tracker quickly became one of the most important sources of events data in the ACLED database. Specifically, the percentage of data on violent events in eastern DRC in the ACLED

²⁰The 95 percent confidence interval for the additional spread of violent events is between 43 and 95 percent. The average occurrence of violent events for treated units with gold mines prior to July 2010 was 0.143. For treated areas with gold mines, the average number of gold mines was 74.8.

²¹Launched in 2017, the Kivu Security Tracker—a joint project of the Congo Research Group, Bridgeway Foundation, Human Rights Watch, and Ebuteli—maps violence in the eastern DRC to better understand trends, causes of insecurity, and serious violations of international human rights and humanitarian law.

database sourced from the tracker rose from 6 percent in 2017 to 38 percent in 2018.²² When we removed the events reported only by the Kivu Security Tracker, the estimated coefficient for the marginal effect of gold mines was similar in magnitude to the main specification.

- **Mines visited prior to 2011.** We examined the potential effect of violence on mining operations and on visits by teams from the International Peace Information Service. For instance, increases in violence might have precluded the organization from visiting particular areas, or violence may have affected whether new mines were opened.²³ To minimize the potential effect of violence arising from the SEC disclosure rule on the mining data, we limited the mining variable to mines that the teams visited before 2011. When we limited the mining variable, the estimated coefficient for the marginal effect of gold mines was notably larger than in the main specification. The estimated coefficient for the policy indicator became statistically significant, with a magnitude similar to the main specification.
- **Mining quartile.** The specification of the main regression, the linear probability model, assumed that the effect of additional mines was linear. We relaxed this assumption by dividing the variables for the interaction between policy and number of mines into quartiles, the first of which contained 25 percent of the second-level administrative units with the smallest number of mines. This resulted in no statistically significant difference in the strength of the rule's association with the likelihood of violence. We found an association with an increased likelihood of violent events for treated units with the smallest and largest number of 3T mines and those with the largest number of gold mines.
- **Medium run effects.** Our model used data from July 2004 through December 2022. We examined whether the associations were similar in the medium-term by limiting the time period to July 2004 through December 2016. We found that the marginal effect of gold mines for treated units remained significantly associated with increases in the likelihood of violence.
- **Linear time trends.** We included linear time trends for each second-level administrative unit to control for the possibility that violence in the unit was trending in a particular direction before the Dodd-Frank Act's enactment in July 2010. The estimated coefficient for the marginal effect of gold mines was similar in magnitude to the main specification.

Table 3 presents the estimation results for our linear probability model and alternative specifications.

²²The Kivu Security Tracker was the sole source of data for these events. The tracker was the only source of data for 25 percent or more of violent events, ranging as high as 44 percent in 2021, that were reported annually in eastern DRC from 2018 through 2022. In addition, the tracker was the only source of data for 4 percent of battles reported in the east in 2017, ranging up to 45 percent of battles reported in the east in 2021.

²³Officials from the International Peace Information Service explained that donor funding determined the number of mines that teams visited in a particular year and that most, but not all, mines were already operational before 2008. While teams initially collected data about the start date of mining at each mine, teams stopped asking the question because responses were not always consistent, according to organization officials.

Appendix II: Regression Analysis of SEC Conflict Minerals Disclosure Rule's Effect on Violence in Eastern DRC

Table 3: Results for Linear Probability Model Used to Estimate Association between SEC Conflict Minerals Disclosure Rule and Occurrence of Any Violent Events in Eastern DRC, July 2004–Dec. 2022

Dependent variable: indicator variable for any violent events

	Full sample	Without Kivu Security Tracker	Mines, pre-2011	Mining quartiles	2016 and earlier	Linear trends
Policy indicator	0.061* (0.035)	0.053 (0.032)	0.083** (0.038)	0.111** (0.052)	0.010 (0.029)	-0.049 (0.045)
Policy indicator x number of 3T mines	-0.001 (0.001)	-0.001 (0.001)	-0.002 (0.003)	—	0.000 (0.001)	0.001 (0.001)
Policy indicator x number of gold mines	0.001*** (0.000)	0.001*** (0.000)	0.006*** (0.002)	—	0.001*** (0.000)	0.001** (0.000)
Policy indicator x quartile 1 of 3T mines	—	—	—	-0.176*** (0.063)	—	—
Policy indicator x quartile 2 of 3T mines	—	—	—	-0.015 (0.093)	—	—
Policy indicator x quartile 3 of 3T mines	—	—	—	-0.099 (0.067)	—	—
Policy indicator x quartile 4 of 3T mines	—	—	—	-0.140** (0.063)	—	—
Policy indicator x quartile 1 of gold mines	—	—	—	0.054 (0.074)	—	—
Policy indicator x quartile 2 of gold mines	—	—	—	0.035 (0.070)	—	—
Policy indicator x quartile 3 of gold mines	—	—	—	0.012 (0.075)	—	—
Policy indicator x quartile 4 of gold mines	—	—	—	0.308*** (0.063)	—	—
Number of observations	19,710	19,710	19,710	19,710	13,230	19,710

Legend: * = statistically significant at the 10 percent level; ** = statistically significant at the 5 percent level; *** = statistically significant at the 1 percent level; † = absolute value less than 0.0004; — = not applicable; 3T = tantalum, tin, and tungsten; DRC = Democratic Republic of the Congo; SEC = Securities and Exchange Commission.

Source: GAO analysis of data from Armed Conflict Location and Event Data, Climate Hazards group InfraRed Precipitation with Stations, Bloomberg Terminal, and International Peace Information Service. | GAO-25-107018

Note: The variables are measured for second-level administrative units for each month from July 2004 through December 2022. The models also include variables for the rainfall patterns, spillovers of violence, and mineral prices as well as location and time fixed effects. Standard errors are clustered by the second-level administrative unit. For the purpose of this analysis, violent events consist of battles, explosions and remote violence, or violence against civilians. The SEC disclosure rule can be found at 77 Fed. Reg. 56,274 (Sept 12, 2012), codified at 17 C.F.R. § 240.13p-1.

We also used the linear probability model to estimate the association of the SEC disclosure rule with the occurrence of any battle. As table 4 shows, the estimated coefficient for the policy indicator was not statistically significant in any model specifications. In contrast, with the exception of the estimation with linear trends, the estimated coefficient for the effect of an additional gold mine was consistently statistically significant and implied an estimated 102 percent increase in the occurrence of any battle for policy-affected areas with the

Appendix II: Regression Analysis of SEC Conflict Minerals Disclosure Rule's Effect on Violence in Eastern DRC

mean level of gold mines.²⁴ Similar to the results of our linear probability analysis for violent events, when we introduced the interaction between the policy indicator and mining quartiles, we found an association of the SEC disclosure rule with battles in areas with the lowest number of tantalum, tin, and tungsten mines and areas with the greatest number of gold mines. We also found that the effect varied across quartiles for both sets of variables.

Table 4: Results for Linear Probability Model Used to Estimate Association between SEC Conflict Minerals Disclosure Rule and Occurrence of Any Battle in Eastern DRC, July 2004–Dec. 2022

Dependent variable: indicator variable for any battles

	Full sample	Without Kivu Security Tracker	Mines, pre-2011	Mining quartiles	2016 and earlier	Linear trends
Policy indicator	0.032 (0.030)	0.035 (0.029)	0.052 (0.034)	0.073 (0.046)	0.020 (0.027)	-0.017 (0.036)
Policy indicator x number of 3T mines	0.000 (0.001)	0.000 (0.001)	0.000 (0.003)	—	0.000 (0.000)	0.001 (0.001)
Policy indicator x number of gold mines	0.001*** (0.000)	0.001*** (0.000)	0.005*** (0.001)	—	0.001*** (0.000)	0.000* (0.000)
Policy indicator x quartile 1 of 3T mines	—	—	—	-0.155*** (0.056)	—	—
Policy indicator x quartile 2 of 3T mines	—	—	—	-0.034 (0.077)	—	—
Policy indicator x quartile 3 of 3T mines	—	—	—	-0.032 (0.060)	—	—
Policy indicator x quartile 4 of 3T mines	—	—	—	-0.077 (0.058)	—	—
Policy indicator x quartile 1 of gold mines	—	—	—	0.073 (0.063)	—	—
Policy indicator x quartile 2 of gold mines	—	—	—	0.010 (0.054)	—	—
Policy indicator x quartile 3 of gold mines	—	—	—	0.010 (0.072)	—	—
Policy indicator x quartile 4 of gold mines	—	—	—	0.279*** (0.046)	—	—
Number of observations	19,710	19,710	19,710	19,710	13,230	19,710

Legend: * = statistically significant at the 10 percent level; *** = statistically significant at the 1 percent level; 3T = tantalum, tin, and tungsten; — = not applicable; DRC = Democratic Republic of the Congo; SEC = Securities and Exchange Commission.

Source: GAO analysis of data from Armed Conflict Location and Event Data, Climate Hazards group InfraRed Precipitation with Stations, Bloomberg Terminal, and International Peace Information Service. | GAO-25-107018

Note: The variables are measured at the second-level administrative unit for each month from July 2004 through December 2022. The models also include variables for the rainfall patterns, spillovers of violence, and mineral prices as well as location and time fixed effects. Standard errors are clustered by the second-level administrative unit. The SEC disclosure rule can be found at 77 Fed. Reg. 56,274 (Sept. 12, 2012), codified at 17 C.F.R. § 240.13p-1.

²⁴The 95 percent confidence interval for the additional spread of battles was between 66 and 137 percent. The mean for all areas with gold mines prior to July 2010 was 0.085.

Analysis of the Levels of Violence

We used a Poisson regression to estimate the association of the SEC disclosure rule with the number of violent events, and we examined the robustness of the results in two ways. First, we tested the sensitivity of the results to the model specification itself by also using ordinary least squares regressions. Second, as when we analyzed the spread of violence, we tested the potential effects of including the Kivu Security Tracker reporting data and limiting the time period to the years before 2017. We also tested the potential effects of violence on mining operations and visits from the International Peace Information Service.

The estimated coefficient in the main specification implied that the SEC disclosure rule was associated with a higher rate of violent events.²⁵ However, the estimated coefficient was not consistently statistically significant across the robustness checks.

In contrast, the estimated coefficients for the interaction between the policy indicator and the number of gold mines was statistically significant across specifications, with the exception of the ordinary least squares specification (see table 5).²⁶ The estimated coefficient for the interaction between the policy indicator and the number of tantalum, tin, and tungsten mines was not consistently statistically significant across specifications.

Table 5: Results for Count Models Used to Estimate Association between SEC Conflict Minerals Disclosure Rule and Number of Violent Events in Eastern DRC, July 2004–Dec. 2022

	Poisson (IRR)				
	Poisson (IRR)	Ordinary least squares	Without Kivu Security Tracker	Mines, pre-2011	2016 and earlier
Policy indicator	2.528*** (0.901)	0.242 (0.160)	1.963* (0.692)	1.950* (0.771)	1.369 (0.400)
Policy indicator x number of 3T mines	0.994** (0.003)	0.000 (0.002)	0.994** (0.003)	0.982 (0.024)	0.997 (0.003)
Policy indicator x number of gold mines	1.004*** (0.001)	-0.001 (0.001)	1.004*** (0.001)	1.039*** (0.013)	1.006*** (0.001)
Number of observations	17,739	19,710	17,739	17,739	11,319

Legend: * = statistically significant at the 10 percent level; *** = statistically significant at the 1 percent level; 3T = tantalum, tin, and tungsten; DRC = Democratic Republic of the Congo; IRR = incidence rate ratio; SEC = Securities and Exchange Commission.

Source: GAO analysis of data from Armed Conflict Location and Event Data, Climate Hazards group InfraRed Precipitation with Stations, Bloomberg Terminal, and International Peace Information Service. | GAO-25-107018

Note: The variables are measured at the second administrative-level unit for each month from July 2004 through December 2022. The models also include variables for the rainfall patterns, spillovers of violence, and mineral prices as well as location and time fixed effects. Standard errors are clustered by the second administrative-level unit. For the purpose of this analysis, violent events consist of battles, explosions and remote violence, or violence against civilians. The SEC disclosure rule can be found at 77 Fed. Reg. 56,274 (Sept 12, 2012), codified at 17 C.F.R. § 240.13p-1.

We found similar results when we analyzed the number of battles. The estimated coefficient for the policy

²⁵The 95 percent confidence interval for the estimated association between the disclosure rule and the rate of violent events is 1.26 to 5.08 and is statistically significant at the 0.01 level.

²⁶The 95 percent confidence interval for the estimated association between the disclosure rule and the marginal effect of gold mines is 1.001 to 1.007 and is statistically significant at the 0.01 level.

indicator was statistically significant in the main specification but was not statistically significant in the robustness checks (see table 6).²⁷ The estimated coefficients for the interaction between the policy indicator and the number of gold mines was statistically significant across specifications, with the exception of the ordinary least squares specification.²⁸ The estimated coefficient for the interaction between the policy indicator and the number of tantalum, tin, and tungsten mines was never statistically significant.

Table 6: Results for Count Models Used to Estimate Association between SEC Conflict Minerals Disclosure Rule and Number of Battles in Eastern DRC, July 2004–Dec. 2022

Dependent variable: count variable for the number of battles

	Poisson (IRR)				
	Poisson (IRR)	Ordinary least squares	Without Kivu Security Tracker	Mines, pre-2011	2016 and earlier
Policy indicator	2.515** (1.085)	0.169 (0.114)	2.089* (0.914)	1.697 (0.793)	1.545 (0.570)
Policy indicator x number of 3T mines	0.994 (0.004)	0.001 (0.002)	0.995 (0.004)	0.996 (0.029)	0.999 (0.004)
Policy indicator x number of gold mines	1.006*** (0.002)	0.000 (0.001)	1.006*** (0.002)	1.050*** (0.018)	1.007*** (0.002)
Number of observations	17,301	19,710	17,301	17,301	10,584

Legend: * = statistically significant at the 10 percent level; ** = statistically significant at the 5 percent level; *** = statistically significant at the 1 percent level; 3T = tantalum, tin, and tungsten; DRC = Democratic Republic of the Congo; IRR = incidence rate ratio; SEC = Securities and Exchange Commission.

Source: GAO analysis of data from Armed Conflict Location and Event Data, Climate Hazards group InfraRed Precipitation with Stations, Bloomberg Terminal, and International Peace Information Service. | GAO-25-107018

Note: The variables are measured at the second-level administrative unit for each month from July 2004 through December 2022. The models also include variables for the rainfall patterns, spillovers of violence, and mineral prices as well as location and time fixed effects. Standard errors are clustered by the second-level administrative unit. The SEC disclosure rule can be found at 77 Fed. Reg. 56,274 (Sept 12, 2012), codified at 17 C.F.R. § 240.13p-1.

Limitations

Like all regression models, ours was subject to limitations, including the following:

- **Measurement of violence.** ACLED data are based on several sources: reports published by the media, reports by nongovernmental and international organizations, selected social media accounts, and information obtained through partnerships with local conflict observatories. However, ACLED may underreport violence, because, according to ACLED, local observatories' initiatives—although they gather primary data reflecting local realities—are often limited in scope, and media reports may not capture all events. Further, violence may be recorded more frequently in areas with artisanal mines because of additional attention due to the SEC conflict minerals disclosure rule. Measurement error is inherent in

²⁷The 95 percent confidence interval for the estimated association between the disclosure rule and the rate of battles is 1.08 to 5.86 and is statistically significant at the 0.01 level.

²⁸The 95 percent confidence interval for the estimated association between the disclosure rule and the marginal effect of gold mines is 1.003 to 1.009 and is statistically significant at the 0.01 level.

survey data.²⁹ For the measurement error to undermine our overall conclusions, violence would need to be better measured after the enactment of the Dodd-Frank Act.³⁰ For example, if ACLED data underreported violence prior to the enactment of the act in July 2010 and increased reporting of violence afterward, that would distort the overall trend of violence before and after the act's enactment and would bias our conclusions. The available evidence suggests that the opposite occurred—the ACLED data underreport violent events after the act's enactment.³¹ Moreover, we accounted for the possibility of inaccurate reporting of violent events in our robustness checks by accounting for the possibility of increased reporting of data by the Kivu Security Tracker after 2017.

- **Specifications.** Our model captured an average association over the time period for the measures of violence we used. Other measures of violence or time periods could produce different results. However, our results are broadly consistent with other empirical studies that used different measures of violence and time periods.
- **Types of mines.** Like other empirical studies, our analysis examined the SEC disclosure rule's association with violence around artisanal mines. We did not consider the potential effects of industrial mines, which could change the results our analysis.
- **Omitted variable bias.** Since we had access to only a selected set of possible variables, our model may not have accounted for other important variables associated with levels of violence. For example, our estimates assume that violence did not spill over from areas with mines to areas without mines. If there were a spillover of violence, we would underestimate the true association of the SEC disclosure rule with violence in areas with artisanal mines. However, the use of fixed effects partially accounted for this by controlling for some of these and other variables, particularly variables that do not change over time.
- **Comparison group.** The model assigns treatment over time and across second-level administrative units likely to be most directly affected by the SEC disclosure rule. The model compares these "treated" units with those likely to be less affected by the rule while controlling for other factors that could be associated with violence. Consequently, the estimated model coefficients capture the differential effect between the units likely to be more and less directly affected. To the extent that the SEC disclosure rule increased violence in areas classified as nontreated, we underestimate the overall effect of the rule.

²⁹While measurement error can be addressed through higher quality data, there are a limited number of conflict datasets. In the context of conflict minerals in the DRC, peer-reviewed studies use ACLED data. A 2024 working paper uses data from the Uppsala Conflict Data Program as a robustness check and finds broadly similar results. Because the program's data record only deadly events, some studies view these data as less comprehensive but potentially more accurate than the ACLED data. The distinction between fatal and nonfatal events may be particularly relevant in the DRC due to the proliferation of sexual violence related to the conflict and forced recruitment of youth. For the 2024 working paper, see Samuel Chang and Hans B. Christensen, "Can Audits Shift the Battleground? Supply Chain Certifications and Conflict Dynamics in the Congo," Working Paper no. 2023-144 (Chicago: University of Chicago, Becker Friedman Institute of Economics, June 2024). For comparisons of data from ACLED and the Uppsala Conflict Data Program, see Kristen Eck "In Data We Trust? A Comparison of UCDP GED and ACLED Conflict Events Datasets," *Cooperation and Conflict*, vol. 47, no. 1 (March 2012).

³⁰More broadly, our analysis addresses several other potential concerns. For instance, it is unlikely that we are incorrectly concluding that violence spread in treated second-level administrative units. The estimated coefficient is consistently statistically significant at the 1 percent level. Similarly, our results are statistically significant and similar across multiple models, which suggests that the results are not caused by the models' specifications.

³¹A 2019 study compares ACLED conflict data, aggregated to the annual level, with villager recollections of conflict in eastern DRC. For the sample of villages surveyed, the ACLED data track villager recollections very closely for 2008 and 2009. However, for 2010 and 2011, the ACLED data underreport conflicts relative to villager recollections. For further information, see Raul Sanchez de la Sierra, "On the Origins of the States: Stationary Bandits and Taxation in Eastern Congo," *Journal of Political Economy*, vol. 128, no. 1 (2020).

Appendix III: Synthetic Control Method Analysis of SEC Conflict Minerals Disclosure Rule's Effect on Violence in Countries

This appendix describes our synthetic control method analysis—its methods, data, results, and limitations—of the effectiveness of the Securities and Exchange Commission's (SEC) conflict minerals disclosure rule in promoting peace and security in the countries adjoining the Democratic Republic of the Congo (DRC). We focused this analysis on eight of the nine countries adjoining the DRC: Angola, Burundi, the Central African Republic, the Republic of the Congo, Rwanda, Tanzania, Uganda, and Zambia.¹ We did not examine the effect of the rule on violent events in South Sudan or Sudan, because the boundary changes resulting from South Sudan's 2011 succession from Sudan made it difficult to compare the rule's effect in those countries before and after the Dodd-Frank Act's enactment.

Methods

We used the synthetic control method to estimate the SEC conflict minerals disclosure rule's effect on violence in the countries adjoining the DRC (i.e., the treated countries).² This method allowed us to compare the adjoining countries with counterfactuals—that is, with hypothetical countries (i.e., the synthetic control countries) that had various characteristics similar to those of the treated countries but were not affected by the SEC disclosure rule (i.e., the intervention).

We matched the adjoining countries and the synthetic control countries on several variables—the outcome and selected covariates in the preintervention period—to minimize the mean squared prediction error (MSPE) of the covariates.³ We then interpolated changes in the number of violent events in the synthetic control countries after July 2010, when the Dodd-Frank Act was enacted, assuming it was never implemented. The key result of this analysis was the difference in outcome—the number of violent events—after the intervention between

¹The Dodd-Frank Wall Street Reform and Consumer Protection Act (Dodd-Frank Act) defines "adjoining country" as a country that shares an internationally recognized border with the DRC. Pub. L. No. 111-203, § 1502(e)(1), 124 Stat. 1376, 2217 (2010). When SEC finalized its disclosure rule, Angola, Burundi, the Central African Republic, the Republic of the Congo, Rwanda, South Sudan, Tanzania, Uganda, and Zambia shared an internationally recognized border with the DRC. 77 Fed. Reg. 56,274, 56,275 (Sept. 12, 2012), codified at 17 C.F.R. § 240.13p-1.

²The synthetic control method has two advantages. First, it allows for transparency and objectivity in the selection of controls. Second, by creating the synthetic control to match the case closely in the pre-intervention period, it safeguards against extrapolation bias that can occur when units with different pre-intervention characteristics are combined. For a discussion of the methodology, see Alberto Abadie, "Using Synthetic Controls: Feasibility, Data Requirements, and Methodological Aspects," *Journal of Economic Literature*, vol. 59, no. 2 (2021). For discussions of inference testing, see Alberto Abadie, Alexis Diamond, and Jens Hainmueller, "Synthetic Control Methods for Comparative Case Studies: Estimating the Effect of California's Tobacco Control Program," *Journal of the American Statistical Association*, vol. 105, no. 490 (2010); "Comparative Politics and the Synthetic Control Method," *American Journal of Political Science*, vol. 59, no. 2 (2005).

³The MSPE is a measure of the difference between the outcome that our model predicts and the true or observed outcome. We averaged the covariates over the preintervention period and divided the outcome into seven equal time periods with the exception of the last time period, which had one additional month. We used shorter time periods for the outcome to create a better preintervention match.

each adjoining country and its synthetic control. This difference served as an estimate of the extent to which the disclosure rule affected the number of violent events in the adjoining country.

We used July 2010—the enactment date of the Dodd-Frank Act, which required SEC to promulgate the conflict minerals disclosure rule—as the intervention’s starting date.⁴ Although SEC finalized the rule in 2012 and began requiring disclosures in 2014, stakeholders began taking actions in anticipation of the rule immediately after the act was enacted.⁵ For example, DRC President Joseph Kabila announced a ban on artisanal mineral exploitation in eastern DRC from September 2010 until March 2011. Similarly, two global coalitions of major electronic companies announced in 2011 that they had stopped buying affected minerals from smelters that could not prove their source minerals were not connected to conflict in the DRC. Moreover, during our interviews with industry stakeholders, company representatives said they began preparing for the disclosure rule before 2012. Using July 2010 as the intervention’s starting date allowed us to estimate the overall association of the SEC conflict minerals disclosure rule with violence.⁶

We defined the preintervention period as January 2004 through June 2010 and defined the postintervention period as August 2010 through August 2015, the 5 years that followed the Dodd-Frank Act’s enactment. We estimated effects for a longer postintervention period, from August 2010 through December 2022, as a robustness test, but we used the shorter period as our main specification because the quality of the synthetic control degrades over time.

Data

Our outcome was the monthly number of violent events in each country adjoining the DRC.⁷ We used data from Armed Conflict Location and Event Data (ACLED) on political violence, including events involving armed groups and one-sided violence against civilians. To select covariates relevant to violent events, we used a prominent theory on civil conflict, particularly Collier and Hoeffler’s “Greed versus Grievance” model, as well as knowledge of the specific context.⁸ We selected the following covariates:

- **Ethnic fractionalization.** This variable is widely used in the empirical conflict literature and represents the probability that two randomly selected individuals from a population belong to different ethnic groups (one minus the Herfindahl Index).⁹ We used data from a 2003 study.¹⁰

⁴Pub. L. No. 111-203, § 1502.

⁵77 Fed. Reg. 56, 274.

⁶Because of the absence of systematic data on peace and security, we focused on the association with violence.

⁷For the purpose of this analysis, we defined “violence” and “violent events” as comprising battles, explosions and remote violence, or violence against civilians.

⁸In Collier and Hoeffler’s model, “greed” stands for the argument that combatants in armed conflicts are motivated by a desire to better their situation and perform an informal cost-benefit analysis of whether the rewards of joining a rebellion are greater than not joining. “Grievance” stands for the argument that people rebel over issues of identity, such as ethnicity, religion, or social class, rather than over economics. See Paul Collier and Anke Hoeffler, “Greed and Grievance in Civil War,” *Oxford Economic Papers*, vol. 56, no. 4 (2004).

⁹The Herfindahl Index is a commonly accepted measure of market concentration that considers the relative size distribution of firms in a market.

¹⁰Alberto Alesina et al., “Fractionalization,” *Journal of Economic Growth*, vol. 8 (2003).

- **Gross domestic product (GDP) per capita.** This variable measures the opportunity cost of recruiting armed combatants. We used the World Development Indicators (WDI) data collected by the World Bank, measured in constant 2015 prices and U.S. dollars.
- **Total natural resources rent as a percentage of GDP.** This variable measures the contribution of natural resources to economic output, as collected in the WDI data.¹¹ Natural resources, including minerals, are often viewed as a “resource curse” that can lead to conflict.

To create the counterfactual for each adjoining country, the synthetic control method selected a weighted combination of countries from the global set of low-income and lower-middle-income countries as defined by the WDI.¹² We then calculated the difference between each adjoining and nonadjoining country and its matched synthetic country to determine whether adjoining countries’ rates of violence changed after the Dodd-Frank Act’s enactment.

Results

Our analysis found that, compared with the number of violent events in the synthetic control countries, the number of violent events in the DRC-adjoining countries likely did not change in the 5 years after the Dodd-Frank Act’s enactment. Specifically, the changes in violence in the adjoining countries after July 2010 were similar to the changes in violence in the low-income and lower-middle income countries.

To test whether the results in each adjoining country were likely to be found by chance, we conducted a series of placebo studies to estimate the rule’s effect by iteratively applying the synthetic control method to the countries that do not adjoin the DRC from the global set of low-income and lower-middle-income countries as defined by the WDI.¹³ In each iteration, we reassigned the intervention to each of these countries as if the rule applied to that country instead of the DRC-adjoining countries. We then computed the estimated effect associated with each placebo run. This iterative procedure produced a distribution of estimated differences between each placebo and its synthetic control after the intervention. If the placebo results resembled the differences we had found between the number of violent events in the adjoining countries and the original synthetic control countries, then we could not dismiss the possibility that these differences had occurred by chance rather than as an effect of the SEC conflict minerals disclosure rule.

To compare results across countries, we calculated the MSPE for each DRC-adjoining and nonadjoining countries both before and after the intervention. This provided a measure of the difference between the level of violence that our model predicts and the true or observed level of violence. We then calculated the ratios of

¹¹According to the WDI, total natural resources rent is the sum of oil rents, natural gas rents, coal rents (hard and soft), mineral rents, and forest rents. The WDI calculated estimates of natural resource rents as the difference between the price of a commodity and the average cost of producing it. This calculation consisted of estimating the price of units of specific commodities and subtracting estimates of average unit costs of extraction or harvesting costs. The WDI then multiplied these unit rents by the physical quantities that countries extract or harvest to determine the rents for each commodity as a percentage of GDP.

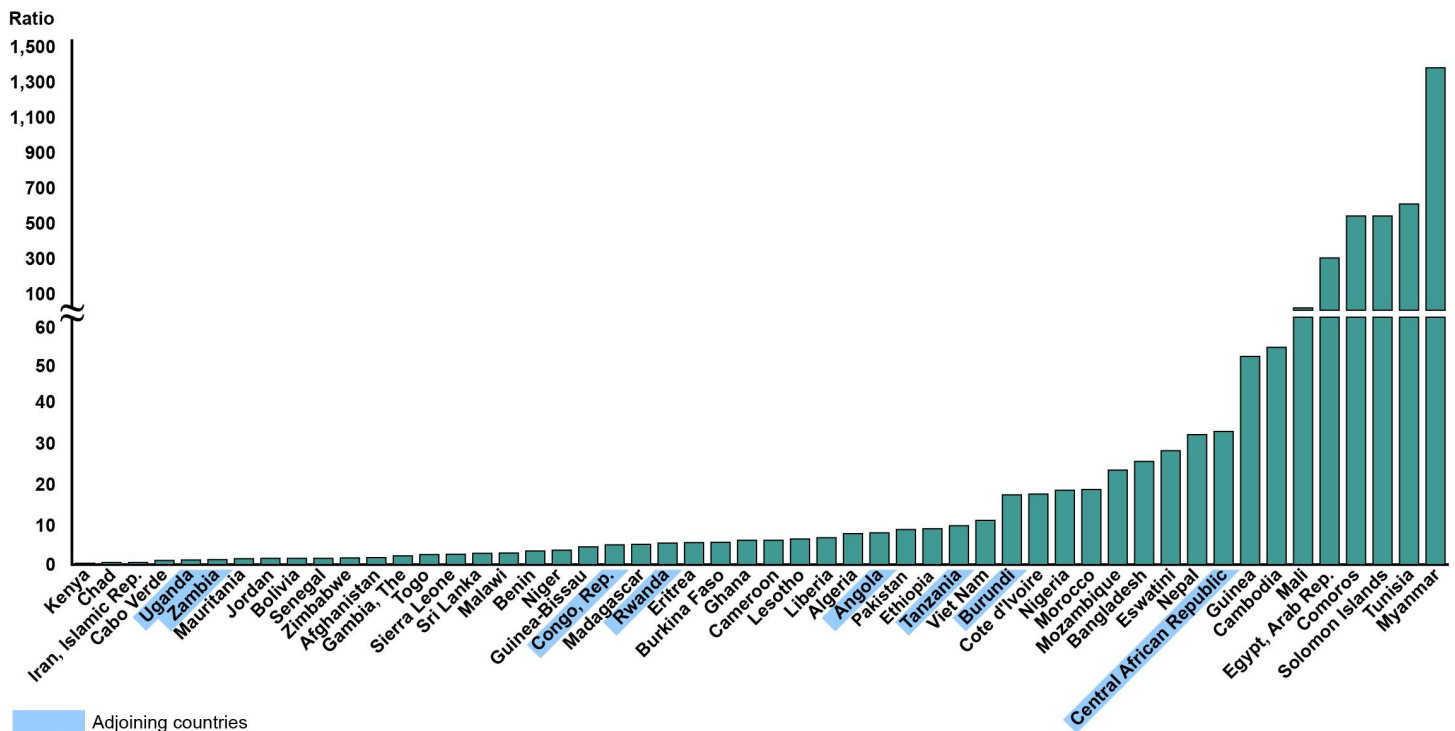
¹²Our analysis omitted any country without data for violent events throughout the selected time period or without preintervention data for any of the covariates.

¹³The synthetic control method does not generate a simple test statistic to determine whether the difference between the treated and synthetic control country is statistically significant.

post- and pre-intervention MSPEs. If the SEC disclosure rule changed the number of violent events in the adjoining countries, these countries would have the highest ratios.

The results showed that the number of violent events in the countries adjoining the DRC likely did not change in the 5 years after the Dodd-Frank Act's enactment, compared with the number of violent events in similar countries. Specifically, the DRC-adjointing countries did not have the highest ratios in comparison with other low-income and lower-middle income countries during the period from January 2004 through August 2015 (see fig. 16). We found a similar result when we extended the period through December 2022 or limited the sample to African low-income and lower-middle-income countries.

Figure 16: Ratio of Post-Intervention MSPE to Pre-Intervention MSPE for Countries Adjoining the Democratic Republic of the Congo and Other Low- or Lower-Middle-Income Countries, Jan. 2004–Aug. 2015



Source: GAO analysis of data from Armed Conflict Location & Event Data, the World Bank, and Alberto Alesina et al. | GAO-25-107018

Accessible Data for Figure 16: Ratio of Post-Intervention MSPE to Pre-Intervention MSPE for Countries Adjoining the Democratic Republic of the Congo and Other Low- or Lower-Middle-Income Countries, Jan. 2004–Aug. 2015

Country	Adjoining country	Ratio
Kenya	No	0.3
Chad	No	0.5
Iran, Islamic Rep.	No	0.5
Cabo Verde	No	1.0
Uganda	Yes	1.1
Zambia	Yes	1.2
Mauritania	No	1.4

Appendix III: Synthetic Control Method Analysis of SEC Conflict Minerals Disclosure Rule's Effect on Violence in Countries

Country	Adjoining country	Ratio
Jordan	No	1.5
Bolivia	No	1.5
Senegal	No	1.5
Zimbabwe	No	1.6
Afghanistan	No	1.7
Gambia, The	No	2.1
Togo	No	2.4
Sierra Leone	No	2.5
Sri Lanka	No	2.7
Malawi	No	2.8
Benin	No	3.3
Niger	No	3.5
Guinea-Bissau	No	4.3
Congo, Rep.	Yes	4.8
Madagascar	No	4.9
Rwanda	Yes	5.2
Eritrea	No	5.3
Burkina Faso	No	5.4
Ghana	No	5.9
Cameroon	No	5.9
Lesotho	No	6.2
Liberia	No	6.5
Algeria	No	7.5
Angola	Yes	7.7
Pakistan	No	8.5
Ethiopia	No	8.7
Tanzania	Yes	9.4
Viet Nam	No	10.7
Burundi	Yes	16.9
Cote d'Ivoire	No	17.1
Nigeria	No	18.0
Morocco	No	18.2
Mozambique	No	22.9
Bangladesh	No	25.0
Eswatini	No	27.6
Nepal	No	31.5
Central African Republic	Yes	32.3
Guinea	No	50.5
Cambodia	No	52.7
Mali	No	113.4
Egypt, Arab Rep.	No	396.5

Appendix III: Synthetic Control Method Analysis of SEC Conflict Minerals Disclosure Rule’s Effect on Violence in Countries

Country	Adjoining country	Ratio
Comoros	No	633.2
Solomon Islands	No	633.2
Tunisia	No	701.1
Myanmar	No	1,472.9

Source: GAO analysis of data from Armed Conflict Location & Event Data, the World Bank, and Alberto Alesina et al. | GAO-25-107018

Notes: Mean squared prediction error (MSPE) is a measure of the difference between the level of violence our model predicts and the true or observed level of violence.

We analyzed included data from Alesina et al., “Fractionalization,” *Journal of Economic Growth*, vol. 8 (2003): 155–194.

We conducted a series of placebo studies by iteratively applying the synthetic control method, which we had used to estimate the effect of the Securities and Exchange Commission’s (SEC) conflict minerals disclosure rule in the countries adjoining the DRC (i.e., the intervention), to every other country in a global set of low-income and lower-middle-income countries as defined by the WDI. In each iteration, we reassigned the intervention to one of these other countries and calculated the estimated gap in levels of violent events. This iterative procedure provided a distribution of estimated gaps for the countries where no intervention took place. To compare results across countries, we plotted the ratios of the postintervention to preintervention MSPEs for the adjoining countries and the other low- and lower-middle-income countries. We anticipated that if the 2010 enactment of the Dodd-Frank Wall Street Reform and Consumer Protection Act—which required SEC to promulgate the disclosure rule—changed the levels of violent events in the DRC’s adjoining countries, these countries would have the highest ratios. Pub. L. No. 111-203, § 1502(b), 124 Stat. 1376, 2213 (2010).

Limitations

Like all observational studies, ours was subject to limitations, including the following:

- **Measurement of violence.** ACLED data are based on reports published by the media and by nongovernmental and international organizations as well as on selected social media accounts and information obtained through partnerships with local conflict observatories. However, ACLED may underreport violence because, according to ACLED, local observatories’ initiatives—although they gather primary data reflecting local realities—are often limited in scope, and media reports may not capture all events. Consequently, to the extent that ACLED underreports violence, our results are underestimates of violence and our ability to detect actual differences is reduced.
- **Sensitivity to analytical choices.** Various analytical choices—for example, the selected time period, the pool of potential control countries, selected covariates, or model specification—could affect our results. To assess the extent of such potential effects, we assessed alternate models using a longer time period and different model specification as part of our robustness checks. We found no evidence that our results were sensitive to these factors.

Appendix IV: Related GAO Reports and Recommendations

From 2010 through 2023, we published 17 reports, with six recommendations, related to the Democratic Republic of the Congo and conflict minerals (see table 7).

Table 7: GAO Reports Related to Conflict Minerals in the DRC, including Recommendations and Status of Implementation, 2010–2023

Year	Report number and title	Recommendations	Agency concurrence	Status of recommendation implementation
2010	GAO-10-1030 <i>The Democratic Republic of the Congo: U.S. Agencies Should Take Further Actions to Contribute to the Effective Regulation and Control of the Minerals Trade in Eastern Democratic Republic of the Congo</i>	To respond to the urgent humanitarian crises and reinforce U.S. commitment to work for peace and security in eastern Democratic Republic of the Congo (DRC), in collaboration with the DRC government and international partners, the Secretary of State, in consultation with the heads of other relevant U.S. agencies, should provide Congress and other international stakeholders with concrete, actionable steps that the United States could take to help monitor, regulate, and control the minerals trade in eastern DRC, including steps to help address the challenges of lack of security, weak governance, and lack of infrastructure in eastern DRC.	The Department of State agreed with the recommendation.	Closed—implemented. In March 2010, the Secretary of State approved a strategic action plan concerning DRC conflict minerals. In July 2010, Congress passed the Dodd-Frank Wall Street Reform and Consumer Protection Act (Dodd-Frank Act), which required the Secretary of State to submit a strategy to Congress to (1) address the linkages between human rights abuses, armed groups, mining of conflict minerals, and commercial products and (2) promote peace and security in the DRC by supporting efforts to monitor and control the mineral trade and develop stronger governance to facilitate transparency within the minerals trade. State submitted an updated strategic action plan to Congress in the fall of 2010 that outlined five objectives for addressing linkages between human rights abuses, armed groups, mining of conflict minerals, and commercial products. The strategic action plan serves as a framework that guides State’s activities and funding in the DRC.

Appendix IV: Related GAO Reports and Recommendations

Year	Report number and title	Recommendations	Agency concurrence	Status of recommendation implementation
		Recognizing the role that timely information on mines and armed groups could play in monitoring, regulating and controlling the conflict minerals trade in eastern DRC, the Secretary of State, in consultation with the Secretary of Defense and working with other relevant international stakeholders, should make every effort to periodically update information based on the best available data on mines, armed groups, and mineral trading routes subject to illicit taxation by illegal armed groups or Congolese military units.	State agreed with the recommendation.	Closed—implemented. The Dodd-Frank Act required the Secretary of State to produce and periodically update a map of mineral-rich zones, trade routes, and areas under the control of armed groups in the DRC. State produced such a map for the first time in early 2010, before the act was enacted. State has since updated the map three times—in June 2011, May 2012, and June 2013.
2011	GAO-11-702 <i>The Democratic Republic of Congo: Information on the Rate of Sexual Violence in War-Torn Eastern DRC and Adjoining Countries</i>	—	—	—
2012	GAO-12-763 <i>Conflict Minerals Disclosure Rule: SEC's Actions and Stakeholder-Developed Initiatives</i>	To address the delay and uncertainty in finalizing a conflict minerals disclosure rule regarding what covered companies will be required to do, the Chairman of the Securities and Exchange Commission (SEC) should identify the remaining steps it needs to take and the associated time frames to finalize and issue such a conflict minerals disclosure rule.	SEC neither agreed nor disagreed with the recommendation.	Closed—implemented. SEC stated that it would continue its endeavor to complete the rule-making expeditiously to provide certainty. SEC reported that the recommended action had been completed and that SEC had adopted a final conflict minerals disclosure rule, which was published in the Federal Register on September 12, 2012. The new rule was effective November 13, 2012, with compliance required for covered companies beginning on January 1, 2013.
2013	GAO-13-689 <i>SEC Conflict Minerals Rule: Information on Responsible Sourcing and Companies Affected</i>	—	—	—

Appendix IV: Related GAO Reports and Recommendations

Year	Report number and title	Recommendations	Agency concurrence	Status of recommendation implementation
2014	GAO-14-575 <i>Conflict Minerals: Stakeholder Options for Responsible Sourcing Are Expanding, but More Information on Smelters Is Needed</i>	To give Congress a sense of the Department of Commerce's efforts to produce a listing of all known conflict minerals processing facilities worldwide, as required by section 1502 of the Dodd-Frank Act, the Secretary of Commerce should provide to Congress a plan that outlines the steps, with associated timeframes, to develop and report the required information about smelters and refiners of conflict minerals worldwide.	Commerce agreed with the recommendation.	Closed—implemented. In early September 2014, Commerce sent a letter to relevant congressional committees indicating that it had developed and sent a list of all known conflict mineral processing facilities worldwide to Congress on August 29, 2014. Commerce subsequently published this list on its website. The list includes all known processing facilities that process the minerals tantalum, tin, tungsten, or gold.
2015	GAO-15-561 <i>SEC Conflict Minerals Rule: Initial Disclosures Indicate Most Companies Were Unable to Determine the Source of Their Conflict Minerals</i>	—	—	—
2015	GAO-16-200T <i>SEC Conflict Minerals Rule: Insights from Companies' Initial Disclosures and State and USAID Actions in the Democratic Republic of the Congo Region</i>	—	—	—

Appendix IV: Related GAO Reports and Recommendations

Year	Report number and title	Recommendations	Agency concurrence	Status of recommendation implementation
2016	GAO-16-805 <i>SEC Conflict Minerals Rule: Companies Face Continuing Challenges in Determining Whether Their Conflict Minerals Benefit Armed Groups</i>	To improve the effectiveness of the SEC’s conflict minerals disclosure rule, the Secretary of Commerce should submit to the appropriate congressional committees a plan outlining steps that Commerce will take, with associated time frames, to (1) assess the accuracy of the independent private sector audits (IPSA) and other due diligence processes described under section 13(p) of the Securities Exchange Act of 1934; (2) develop recommendations for the process used to carry out such audits, including ways to improve the accuracy of the audits and establish standards of best practices for such audits; and (3) acquire the necessary knowledge, skills, and abilities to carry out these responsibilities.	Commerce agreed with the recommendation.	Open. Commerce indicated in October 2016 that it had developed a three-step approach that paralleled the recommendation’s three distinct elements. To fully implement this recommendation, Commerce needs to submit the said three-step plan, including associated timeframes for completing the steps, to the appropriate congressional committees. In 2018, a Commerce official said the agency had reviewed the IPSAs filed by companies in 2016 and planned to review the audits filed in 2017 by the end of fiscal year 2018. However, the official noted that the department would “not undertake the development of recommendations and best practices while the SEC is revising its rule.” Commerce officials cited SEC staff’s updated guidance and ongoing reviews, as well as judicial rulings as their primary reason for not implementing the recommendation. In 2021, Commerce officials stated that the department had not assessed IPSAs submitted to SEC from 2018 through 2020 and could not confirm how many were submitted in each of those years. In April 2024, Commerce reported that the status of the agency’s response to our recommendation had not changed.
2017	GAO-17-544T <i>Conflict Minerals: Insights from Company Disclosures and Agency Actions</i>	—	—	—
2017	GAO-17-517R <i>SEC Conflict Minerals Rule: 2017 Review of Company Disclosures in Response to the U.S. Securities and Exchange Commission Rule</i>	—	—	—
2017	GAO-17-733 <i>Conflict Minerals: Information on Artisanal Mined Gold and Efforts to Encourage Responsible Sourcing in the Democratic Republic of the Congo</i>	—	—	—

Appendix IV: Related GAO Reports and Recommendations

Year	Report number and title	Recommendations	Agency concurrence	Status of recommendation implementation
2018	GAO-18-457 <i>Conflict Minerals: Company Reports on Mineral Sources in 2017 Are Similar to Prior Years and New Data on Sexual Violence Are Available</i>	—	—	—
2019	GAO-19-607 <i>Conflict Minerals: 2018 Company Reports on Mineral Sources Were Similar in Number and Content to Those Filed in the Prior 2 Years</i>	—	—	—
2020	GAO-20-595 <i>Conflict Minerals: Actions Needed to Assess Progress Addressing Armed Groups' Exploitation of Minerals</i>	The Secretary of State, in consultation with the Administrator of USAID, should develop performance indicators that would enable State to assess progress toward the strategic objectives and goal of the U.S. conflict minerals strategy going forward.	State agreed with the recommendation.	Open. In February 2023, State said that department officials would be considering potential revisions to the 2011 conflict minerals strategy and that the department would seek to develop performance indicators, with support from USAID, as part of any updates to the strategy. In June 2024, State indicated that no further action had been taken regarding the strategy.
2021	GAO-21-531 <i>Conflict Minerals: 2020 Company SEC Filings on Mineral Sources Were Similar to Those from Prior Years</i>	—	—	—
2022	GAO-22-105411 <i>Conflict Minerals: Overall Peace and Security in Eastern Democratic Republic of the Congo Has Not Improved since 2014</i>	—	—	—
2023	GAO-23-106295 <i>Conflict Minerals: 2022 Company Reports on Mineral Sources Were Similar to Those Filed in Prior Years</i>	—	—	—

Legend: — = not applicable.

Source: GAO. | GAO-25-107018

Appendix V: Comments from the U.S. Securities and Exchange Commission

Note: GAO comments supplementing those in the report text appear at the end of this appendix.



UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
WASHINGTON, D.C. 20549

August 27, 2024

Kimberly M. Gianopoulos
Managing Director
International Affairs & Trade
U.S. Government Accountability Office
411 G Street, NW
Washington, DC 20548

Dear Ms. Gianopoulos:

Thank you for giving the Securities and Exchange Commission (“SEC” or “Commission”) staff the opportunity to share our significant concerns with the draft report entitled CONFLICT MINERALS: SEC DISCLOSURE RULE HAS NOT IMPROVED PEACE AND SECURITY IN THE DEMOCRATIC REPUBLIC OF THE CONGO (GAO-24-107018) (“Report”) submitted by the Government Accountability Office (“GAO”) to the SEC on July 23, 2024. The Report states that it assesses, among other things, the effectiveness of the SEC’s Conflict Minerals rule (“Rule” or “SEC Rule”),¹ adopted in August 2012, in promoting peace and security in the Democratic Republic of the Congo (“DRC”) and adjoining countries.

The Rule was adopted by the Commission to implement the requirements of the Dodd-Frank Wall Street Reform and Consumer Protection Act (“DFA”) Section 1502,² which specifically mandates that the Commission promulgate regulations requiring, among other matters, disclosure about “conflict minerals” (as defined by DFA Section 1502), including whether such conflict minerals originated in the DRC and “adjoining countries” (as defined by DFA Section 1502), and, if so, submission of a report relating to those conflict minerals, the requirements of which are detailed in DFA Section 1502.

Section 1502 of the DFA also requires the GAO to submit annually to the “appropriate congressional committees” a report that includes, among other things: (A) an “assessment of the effectiveness of section 13(p) of the Securities Exchange Act of 1934,” which directed the Commission to adopt the Rule, “in promoting peace and security in the [DRC] and adjoining countries;” and (B) a “description of issues encountered by the Securities and Exchange Commission in carrying out the provisions of such section 13(p).”³ The first GAO report relating

¹ Conflict Minerals, Release No. 34-67716 (Aug. 22, 2012), 77 Fed. Reg. 56,273 (Sept. 12, 2012) (codified at 17 CFR §§ 240.13p-1, 249b.400).

² Pub. L. 111-203, § 1502, 124 Stat. 1376, 2213-18 (2010).

³ DFA § 1502(d)(A), (B).

See comment 1.
See comment 2.

Ms. Kimberly Gianopoulos

Page 2

to the SEC was submitted in 2012. In recent years, Congress modified the annual reporting requirement and designated 2024 as the last year for GAO to submit a report.⁴

The 2024 Report makes assertions and reaches conclusions that rest on several erroneous factual assumptions, draws causal inferences that are not supported by the GAO's statistical analyses, and deviates significantly from the GAO's previously issued reports. As discussed in more detail below, the SEC staff have serious concerns about the Report that it shared with GAO staff through the commenting process. Because GAO has declined to share its revised draft in response to our technical comments, we cannot evaluate the degree to which GAO has addressed our many serious concerns. Our concerns with the draft provided to us include the following:

- Many conclusions expressed in the Report about violence in the DRC and adjoining countries are improperly attributed to the SEC Rule, as opposed to DFA Section 1502.
- The Report selectively cites studies that support GAO's conclusions, while omitting or inaccurately referencing studies (identified by SEC staff to GAO staff) that reach different conclusions.
- The statistical analyses are critically flawed and lack transparency. They inappropriately infer causation—that DFA Section 1502 was a sole or contributing cause of violence in the DRC—without sufficient evidence to establish causality. Moreover, multiple findings in the Report, including conclusions contained in section headings and on the Highlights page, are based on critically flawed statistical analyses.
- The Report fails to fully discuss important limitations of the ACLED data it uses.

The Commission's primary concerns with the Report are described in more detail below.

1. *The Report Misleadingly Conflates the Enactment of DFA Section 1502 and the SEC Disclosure Rule.*

The Report's statistical analyses on violence use "July 2010—the enactment date of the Dodd-Frank Act, which required the SEC to promulgate the conflict minerals disclosure rule—as the [policy] intervention's starting date."⁵ To be clear, July 2010 is the date that Congress enacted DFA Section 1502. By contrast, the SEC Rule was proposed in December 2010, adopted in August 2012, and did not require any disclosures until June 2014.⁶ Timing matters a great deal when making claims that disclosures caused effects in the real world. It is challenging to see how required disclosures caused impacts before those disclosures were made. Thus, the Report is mistaken in discussing the statistical results for the July 2010 policy intervention in terms of the "SEC rule."

⁴ GAO Mandates Revision Act of 2016, Pub. L. 114-301, § 3(b), 130 Stat. 1514, 1515 (2016).

⁵ Report at 71. The statistical models in Appendix II include a policy indicator variable, which is defined in Table 1 to take "a value of 1 for every month after July 2010. It takes a value of 0.33 for July 2010" and is presumably equal to zero for every month before July 2010. The statistical analyses in Appendix III use July 2010 as the intervention starting date. *Id.* at 82.

⁶ The Rule required affected companies to file their first specialized disclosure report on June 2, 2014, and annually on May 31 thereafter.

See comment 4.
See comment 3.
See comment 5.

Ms. Kimberly Gianopoulos
Page 3

To the extent that the statistical analyses purport to capture any associations at all, they are associations between the enactment of DFA Section 1502 and violence. The Report attempts to elide the distinction between the statute and the subsequent regulation by stating, “[a]lthough the SEC finalized its disclosure rule in 2012, our analysis used the enactment of the Dodd-Frank Act as a proxy for the rule because companies, governments, and others began to take action after the act’s enactment in anticipation of the SEC’s disclosure rule.”⁷ The clearer interpretation of any effects measured between 2010 and 2014 is that the Report’s analysis has captured effects of DFA’s Section 1502 being enacted, not anticipatory effects of the SEC Rule.⁸

The Report purports to cite studies attributing increases in violence in the DRC to the SEC Rule, when those studies do not make such an attribution. For example, the Report inaccurately invokes: (1) a Parker and Vadheim (2017) study that clearly associates any effects with DFA Section 1502 and a DRC governmental mining ban, not the SEC Rule,⁹ and (2) a Bloem (2023) study that associates any effects with DFA Section 1502, not the SEC Rule.¹⁰

2. *The Report Omits Studies in Conflict With Conclusions Reached in the Report*

The Report selectively cites the academic literature, omitting evidence and conclusions in competition with those claimed by the Report.¹¹ The Report omits multiple important studies that criticize the studies it does cite or from which it draws conclusions, including the following: (1) a Koch and Kinsbergen (2018) study, which analyzes the extent to which existing literature, including Parker and Vadheim (2017), has exaggerated unintended effects of conflict minerals legislation,¹² and (2) a Christensen (2022) study,¹³ which highlights limitations, caveats, and

⁷ Report at 16 n.42.

⁸ The Report selectively discusses one study that specifically examines the SEC Rule and finds that “the average number of conflicts in mining regions of covered countries declined by about 35% relative to other regions during the post-implementation period [after issuers were mandated to comply with the SEC Rule in 2014], suggesting that firms’ actions help mitigate conflicts.” Bok Baik et al., *The Real Effects of Supply Chain Transparency Regulation: Evidence from Section 1502 of the Dodd-Frank Act*, 62 *J. Accounting Research* 551, 556 (2024). The Report misleadingly omits this result from its discussion of Baik et al. (2024).

⁹ Report at 17 (stating “a study examining the rule’s [SEC Rule’s] short-term effects (those prior to 2013) found that, rather than reducing violence, it increased the likelihood that armed groups would loot civilians and commit violence against them”); see also Dominic P. Parker & Bryan Vadheim, *Resource Cursed or Policy Cursed? U.S. Regulation of Conflict Minerals and Violence in the Congo*, 4 *J. Ass’n Envtl. & Res. Economists* 1, 2-3 (2017) (stating “[o]ne interpretation is as follows: both the mining ban and the de facto boycott (Dodd-Frank) displaced militia groups and caused them to replace lost revenue by looting,” instead of attributing the finding to the SEC Rule). This study uses data from 2010 to 2012 and chooses “July 2010 as the time in which Dodd-Frank ‘treatment’ began” (at 22). The study mentions the SEC only twice.

¹⁰ Report at 17 (“The study found evidence suggesting that the SEC rule caused a reduction of workers employed at tantalum, tin, and tungsten mines”); see also Jeffrey R. Bloem, *Good Intentions Gone Bad? The Dodd-Frank Act and Conflict in Africa’s Great Lakes Regions*, 71 *Econ. Dev. & Cultural Change*, 654 (2023) (referring to “the passage of the Dodd-Frank Act,” not the SEC Rule). Bloem (2023) defines the start date of the conflict minerals policy as July 2010, two years before the SEC Rule was adopted.

¹¹ The SEC staff make no representation that they conducted an exhaustive literature search, and there may be additional studies that are relevant and neither cited nor discussed in the Report.

¹² Dirk-Jan Koch & Sara Kinsbergen, *Exaggerating Unintended Effects? Competing Narratives on the Impact of Conflict Minerals Regulation*, 57 *Res. Policy* 255 (2018).

¹³ Hans B. Christensen, *Is Corporate Transparency the Solution to Political Failure on Our Greatest Problems? A Discussion of Darendeli, Fiechter, Hitz, and Lehmann*, 74 *J. Accounting & Econ.* 101542, 5 (2022).

See comment 6.

Ms. Kimberly Gianopoulos
Page 4

competing evidence to three studies that the Report cited in support of the Report's findings.¹⁴ Further, the Report fails to mention an important result from a study that it does cite. The Baik, Even-Tov, Han, and Park (2024) study specifically examines the SEC Rule and finds that "the average number of conflicts in mining regions of covered countries declined by about 35% relative to other regions during the post-implementation period [after issuers were mandated to comply with the SEC Rule in 2014], suggesting that firms' actions help mitigate conflicts."¹⁵

3. *The Report's Statistical Analyses Have Critical Flaws.*

The Report fails to explain how its statistical analyses address the central question of causality. In asking whether the enactment of DFA Section 1502 or the SEC Rule caused or contributed to violence in the DRC, one important question is what would have been the level of violence absent a disclosure mandate: What would have happened to the affected regions of the DRC had DFA not included Section 1502? Section 1502 was adopted, in part, because of concerns that the exploitation and trade of conflict minerals by armed groups was used to finance conflict in the DRC and adjoining countries.¹⁶ Consistent with this concern, Figure 2 in the Report shows an increase in the total incidents of violence against civilians from 2007 to 2009, which predates the enactment of DFA.

In this regard, the Report does not address how its statistical analyses control for confounding temporal factors and events that could be associated with violence in the Eastern DRC. The Report states that, to control for "time-specific factors that affected the territories of Eastern DRC equally," the statistical models include time indicators, which means that "[t]here is a variable for each month except the first, which is omitted."¹⁷ These time indicators, however, do not control for factors or events that may have differentially affected violence across geographic areas in the Eastern DRC. For example, Hanai (2021) provides evidence that specific provinces in the Eastern DRC were, in fact, differentially affected by an increase in conflicts over time, such as North Kivu and South Kivu.¹⁸ Similarly, violence triggered by the M23 rebellion between 2012 and 2013 seemed to be concentrated around the city of Goma in the Eastern DRC.¹⁹ Under this approach, any violence following July 2010 that is caused by confounding factors or events and concentrated in the GAO's statistical analyses' policy territories²⁰ would be wrongly attributed to the enactment of DFA Section 1502, according to the logic of the Report's findings.

The Report does not explain how its statistical models control for confounding factors or events, including:

¹⁴ These studies are: Parker & Vadheim, *supra* note 9; Nik Stoop, Marijke Verpooten & Peter van der Windt, *More Legislation, More Violence? The Impact of Dodd-Frank in the DRC*, PLoS ONE, Aug. 9, 2018; and an earlier version of Bok Baik et al., *supra* note 8.

¹⁵ See, e.g., Bok Baik et al., *supra* note 8.

¹⁶ DFA § 1502(a).

¹⁷ Report at 71.

¹⁸ See Kazuyo Hanai, *Conflict Minerals Regulation and Mechanism Changes in the DR Congo*, 74 Res. Policy 102394 (2021).

¹⁹ See Actor Profile: The March 23 Movement (M23), ACLED (Mar. 23, 2023), <https://acleddata.com/2023/03/23/actor-profile-m23-drc/>.

²⁰ See *infra* policy territories (i.e., the treatment locations).

Ms. Kimberly Gianopoulos
Page 5

- (i) the 2008-2009 National Congress for the Defence of the People offensive in the Eastern DRC;²¹
- (ii) the Organization for Economic Co-operation and Development’s (“OECD”) guidelines for responsible sourcing of minerals, which were already underway prior to the passage of DFA and were adopted in 2010;²²
- (iii) the DRC’s governmental ban on artisanal mining from September 11, 2010, to March 2011, which covered three provinces—Maniema, North Kivu, and South Kivu;²³
- (iv) the Electronic Industry Citizenship Coalition boycott that took hold on April 1, 2011;²⁴
- (v) the rebellion of the armed group M23 between 2012 and 2013;²⁵
- (vi) the subdivision in 2015 of the DRC’s six largest provinces into twenty-one new provinces, which likely differentially impacted the administrations and related services across the new provinces;
- (vii) Regulation 2017/821 of the European Parliament and of the Council of May 17, 2017, laying down supply chain due diligence obligations for European Union importers of tin, tantalum, and tungsten, their ores, and gold originating from conflict-affected or high-risk areas, which obliges European Union importers to identify and mitigate risks in their supply chains;²⁶
- (viii) the significant increase in the level of violence in certain regions of the Eastern DRC that began in 2017 (e.g., see Figure 2 and accompanying text in the Report);²⁷

²¹ See 1960–2023 Eastern Congo: A Legacy of Intervention, Council of Foreign Relations (2024), <https://www.cfr.org/timeline/eastern-congo-legacy-intervention>.

²² See Melanie Gouby, The Problem with “Conflict-Free” Minerals, Foreign Policy (May 22, 2024), <https://foreignpolicy.com/2024/05/22/conflict-free-minerals-traceability-schemes-congo/>.

²³ See Sarah Zingg Wimmer & Filip Hilgert, Bisi. A One-Year Snapshot of the DRC’s Principal Cassiterite Mine 6, Int’l Peace Info. Serv. (Nov. 28, 2011), available at https://ipisresearch.be/wp-content/uploads/2011/11/20111128_Bisie_FHilgert_SZingg.pdf (“Given the close link between the illicit mining activities and insecurity in the area, some observers believe that the just-mentioned 4-day mass rape of last summer was the trigger for President Kabila’s imposition of an outright mining ban on the east of the country. Kabila had visited Walikale on 9 September and ordered the stop of mining activities in the territory the same day. Two days later, he suspended all exploitation and export of minerals from North Kivu and the neighbouring two provinces of South Kivu and Maniema, until further notice.”).

²⁴ See, e.g., Parker & Vadheim, *supra* note 9, at 9 (“The boycotting of eastern DRC minerals has been more explicit since April 1, 2011, when a coalition of large electronics and high-technology companies—the Electronic Industry Citizenship Coalition (EICC)—stopped buying the 3Ts from smelters unable to prove that their source minerals did not fund DRC conflict.”).

²⁵ See Center for Preventative Action, Conflict in the Democratic Republic of Congo, Council of Foreign Relations (updated June 20, 2024), <https://www.cfr.org/global-conflict-tracker/conflict/violence-democratic-republic-congo>.

²⁶ On January 1, 2021, the Conflict Minerals Regulation, Regulation (EU) 2017/821, also came into full force across the European Union.

²⁷ See Report, Figure 2, and accompanying text. The Report attributes this increase in violence in part to shifting alliances among various armed groups as well as the emergence of the armed group Cooperative for the Development of the Congo (CODECO) and the strengthening of a separate group, Allied Democratic Forces (ADF), according to experts that GAO staff interviewed. See *id.* at 11; see also Martins Abadias do Nascimento & Richard

See comment 7.

Ms. Kimberly Gianopoulos
Page 6

- (ix) the revived rebellion of the armed group M23 in 2021;²⁸ and
- (x) any other factor or event that could have triggered an increase in violence across specific areas in the Eastern DRC following DFA’s passage.

DFA Section 1502 applied across all territories in the Eastern DRC, making it impossible to distinguish locations within the Eastern DRC that were covered by DFA Section 1502 (“treatment locations”) from locations *not* covered by DFA Section 1502 (“control locations”). A set of control locations is necessary to separately identify the effects of DFA Section 1502 and the effects of confounding temporal factors and events. SEC staff were informed that the policy indicator defined the policy territories (i.e., the treatment locations) as the union of territories in which mining was banned and those containing at least one artisanal mine²⁹ with geocoordinates falling within the U.S. State Department’s Section 1502 map of conflict mining zones.³⁰ The basis for GAO’s methodology choice is the Parker and Vadheim (2017) study, which self-reports that this designation of treatment areas is problematic, as “the composition of the control and treatment areas—that is, the policy and nonpolicy areas—unlikely remained the same because miners likely relocated across territories for income opportunities.”³¹ Similarly, to the extent that DFA Section 1502 was enacted as a response to rising violence, the areas that are designated as treatment areas would be exactly the areas relatively more likely to see shifts in population, shifts in mining activity, shifts in violence, or other trends absent DFA Section 1502.³² More generally, this approach to defining the policy indicator is fundamentally flawed since all locations within the Eastern DRC were covered by Section 1502 (i.e., treated). The Report does not address these limitations.

Apau, CODECO Violent Extremism Activities in Eastern DRC: Analysis of Vulnerabilities, Response, and Resilience, African Centre for the Study & Res. on Terrorism (Apr. 2023), available at https://au.int/sites/default/files/documents/42722-doc-CODECO_Violent_Extremism_Activities_in_Eastern_DRC_Analysis_of_Vulnerabilities_Response_and_Resilience.pdf.

²⁸ See 1960–2023 Eastern Congo, *supra* note 21.

²⁹ The Report states that it focuses on violence in locations with artisanal mines “because armed groups are less likely to interfere with industrial mines.” Report at 69. The Report acknowledges “that the expansion of industrial mines decreased the number of battles among armed groups.” *Id.* at 21. The Report’s models fail to account for the location of industrial mining, and to the extent it is correlated with that of artisanal mining the models’ results on violence would be biased. For instance, if violence decreased around industrial mines after the enactment of DFA Section 1502, and industrial mines were principally located in territories classified by the Report as “control locations,” then the Report’s analyses would find a relative increase in violence in the treatment locations even if violence did not increase in those areas.

³⁰ The Report’s statistical analyses for the Eastern DRC, as of July 23, failed to distinguish between locations that were covered by DFA Section 1502 and locations not covered by Section 1502. Report Appendix II.

³¹ See Parker & Vadheim (2017), *supra* note 9, at 44. This serious problem with the designation of treatment areas is exacerbated in the Report as it examines a longer time period following the enactment of DFA 1502. While the Parker and Vadheim (2017) study²⁴ uses data through December 2012 (1.5 years after the enactment of DFA Section 1502), GAO’s statistical analyses use data through December 2016 as well as December 2022 (5.5 years and 11.5 years, respectively, after the enactment of DFA Section 1502).

³² As a closely related matter, to the extent that GAO’s statistical models fail to control for, over time, the number of industrial mines, economic activity in general, and population patterns, the Report’s methodology could misattribute the effects of these and related shifts on violence as effects of the enactment of DFA Section 1502 around artisanal gold mines on violence. The same problem applies to the Report’s analyses of artisanal mines of tantalum, tin, and tungsten.

See comment 8.
See comment 9.

Ms. Kimberly Gianopoulos
Page 7

Also, the policy indicator coefficient captures only a change in the difference in likelihood of violence across different areas (controlling for some factors), and does not, in fact, measure the likelihood of violence relative to a but-for world in which DFA Section 1502 (and, later on, the SEC Rule) had not been enacted. Any attempt to interpret this change as being *caused* by DFA Section 1502 is entirely predicated on the belief that DFA Section 1502, and not any of the myriad confounding events over the event window, drove this change. Whether this belief is warranted depends not only on how closely the designation of treatment and control territories is related to the actual relative effect of DFA Section 1502, but also how *unrelated* the designation of treatment and control territories is to other alternative explanations, as well as the relative magnitude of the impacts of these events on violence. All uncontrolled factors that drove changes in violence at regions with artisanal mines and regions subject to the ban (relative to regions both without artisanal mines and not subject to the ban) over the sample period are captured in the “policy indicator” coefficient. As presented, the Report cannot exclude the hypothesis that violence would have intensified even more in the treatment territories but for the enactment of DFA Section 1502, or that Section 1502 actually decreased violence in the control territories in GAO’s statistical analyses.

The discussion of the statistical results in the Report improperly asserts that a causal connection on the basis of its statistical models is warranted so long as any potential confounding factors and events, such as those listed above, are plausibly *related to* the treatment being studied (in this case, enactment of DFA). For example, the Report states “We chose this date [July 2010] because, although the SEC finalized the rule in 2012 and began requiring disclosures in 2014, stakeholders began taking actions in anticipation of the rule immediately after the act was enacted. For example, DRC President Joseph Kabila announced a ban on artisanal mineral exploitation in the eastern DRC from September 2010 until March 2011.”³³ In discussions with SEC staff, GAO staff confirmed that this assumption underlies the statistical analyses, stating that they are unable to rule out that the subsequent events were not themselves caused by DFA Section 1502 and the SEC Rule. This reasoning fundamentally misunderstands statistical analysis of causal relationships: Whether DFA Section 1502 (or the SEC Rule) caused these future events is a hypothesis that cannot be assumed – it must be tested and confirmed with appropriate analysis of treatment and control groups. In other words, to establish a causal relationship, the Report must demonstrate that the treatment being studied (in this case, enactment of DFA Section 1502) is a but-for cause of the outcome being studied (in this case, violence).³⁴ This is not feasible absent appropriately designating treatment and control groups. Doing so would require showing not only that certain events were caused by the enactment of DFA Section 1502, but also that the violence would not have increased even more absent DFA Section 1502. In sum, the statistical models in the Report do not allow for any causal inferences between DFA Section 1502 (let alone the SEC Rule) and violence.

4. The Report Fails to Fully Discuss Important Limitations of the ACLED Data It Uses.

The Report relies on ACLED data to identify violence. The Report acknowledges measurement error in the ACLED data, also stating “the SEC disclosure rule, by focusing

³³ Report at 82.

³⁴ For instance, the burden of proof is on the Report to show that events such as the presidential ban on artisanal mines or the OECD guidelines for responsible sourcing of minerals were caused by DFA and were not set into motion by factors outside of DFA.

Ms. Kimberly Gianopoulos
Page 8

additional attention on areas with artisanal mines, may have led to more accurate reporting of violence, causing us to conclude incorrectly that violence increased when in fact there was just better recording of the violence that was occurring.”³⁵

The Report does not provide sufficient context on the limitations related to ACLED’s dynamic sourcing of conflict data. The Report fails to address, for instance, the Raleigh, Kishi, and Linke (2023) study, which states: “ACLED’s dynamic sourcing model may help to ensure that conflict coverage validity as well as reliability across conflicts is maximized, but given the changes over time in the information environment more broadly, the comprehensiveness of its data collection can only be as good as the quality of information available at a given time. The availability of in-depth information, and the media environment more largely, in 1997 (the start of ACLED coverage for many African countries) is quite different from data availability in 2022.”³⁶

The Report also fails to address the Eck (2012) study, which highlights important limitations of the ACLED data, including for the Report’s *sub-national analyses* in Appendix II: “The aim of this article is to provide readers with some guidelines as to when these datasets should be used and when they should be avoided; it finds that *those interested in subnational analyses of conflict should be wary of ACLED’s data due to uneven quality-control issues which can result in biased findings if left unchecked by the researcher.*”³⁷ “First, ACLED’s unit of analysis is the event (violent or nonviolent), yet researchers rarely theorize about events per se, but rather the production and targets of violence. . . . It is conceptually problematic for many theories of civil war when no distinction is made in the intensity and nature of violence. Second, ACLED does not provide users with the information which is often needed to study theories of civil war: it provides no information distinguishing between whether the actor is connected to the state (i.e. military or police forces), nor does it provide Actor IDs which could be used to track the behavior of a warring party.”³⁸ Additionally, the Report fails to discuss limitations regarding the use of ACLED data that Parker and Vadheim (2017) and Chang and Christensen (2024) report.³⁹

These data issues are particularly relevant to the Report’s statistical analyses on the presence of *any* violence at the level of a second-level administrative unit across the Eastern

³⁵ Report at 79.

³⁶ See Clionadh Raleigh, Roudabeh Kishi & Andrew Linke, Political instability patterns are obscured by conflict dataset scope conditions, sources, and coding choices, 10 *Humanities & Soc. Sciences Commc’ns* 74 (2023). The Report uses ACLED data for the period 2004-2022.

³⁷ See Kristine Eck, In Data We Trust? A Comparison of UCDP GED and ACLED Conflict Events Datasets, 47 *Cooperation & Conflict* 124, 124 (2012) (emphasis added).

³⁸ See *id.* at 126.

³⁹ See Parker & Vadheim, *supra* note 9, at 44 (“[W]e recognize that the causes of violence in the eastern DRC are more complex than the theory we present (see, e.g., Austesserre 2012), and we concede that the ACLED data are not up to the task of precisely testing each alternative theory against one another.”); Samuel Chang & Hans Bonde Christensen, Can Audits Shift the Battleground? Supply Chain Certifications and Conflict Dynamics in the Congo 29 (Becker Friedman Institute for Economics Working Paper 2023-144, 2024), available at <https://ssrn.com/abstract=4609332> (“Eck (2012) points out various issues with ACLED including coverage inconsistencies and event coding errors which may interfere with the inference of results.”).

Ms. Kimberly Gianopoulos
Page 9

DRC.⁴⁰ In these analyses, properly identifying the presence of *any* violence at the level of a second-level administrative unit in a given year and month is critical. Misclassification in this identification process (i.e., the presence or absence of *any* violence) that is correlated with designation of treatment locations and control locations would lead to biased and inconsistent results in the Report's statistical analyses. In particular, treatment areas are exactly the areas more likely to incorrectly have no identification of violence pre-2010 and correct identification of violence post-2010, as they are the locations more likely to have mining-related violence. In such a situation, the Report's finding that the enactment of DFA Section 1502 was likely associated with a spread of violence would not be statistically valid.

In sum, given the limitations discussed above, the SEC staff strongly objected during the commenting process to language and conclusions in the draft Report that asserted, without sufficient support, a causal link (whether sole or contributory) between DFA—and the SEC Rule—and violence in the DRC. As GAO did not provide the SEC staff with a revised draft, we cannot know whether GAO has sufficiently addressed these objections. The final version of the report should not include any discussion of causal links between DFA Section 1502 (or the SEC Rule) and increased violence in the region because it lacks a sufficient analytical basis to reach such a conclusion. To the extent the final version of the report includes a discussion of “associations” between DFA Section 1502 (or the SEC Rule) and increased violence in the region, the final version of the report should appropriately acknowledge that these associations are not evidence of causal links.

Sincerely,



Melissa Duru
Deputy Director, Division of Corporation Finance

signing on behalf of

Erik Gerding
Director, Division of Corporation Finance

⁴⁰ See Report at 69. Specifically, at the level of a second-level administrative unit, in a given year and month, the statistical analysis' outcome variable is a 'violent event indicator', which equals 1 if there is any violence, and 0 otherwise. See also id. at 68 n.154 ("For the purpose of this analysis, we defined "violence" and "violent events" as battles, explosions and remote violence, or violence against civilians."). Figure 4 in the Report (at 18) also purports to show the geographic spread of violence across second-level administrative units in the eastern DRC from 2010 to 2022. But the figure is based on the presence or absence of any violence within each unit during the selected years, and thus it fails to show whether the geographic concentration of violence changed meaningfully over time. For transparency and greater contextual sophistication, the final report should include a table documenting the number of violent events in 2010 and 2012 in each second-level administrative units mapped in Figure 4. Lastly, in discussions with SEC staff, GAO staff stated that the words "spread of violence" are meant to convey that a consistent amount of violence was distributed in a larger geographic area rather than to suggest that the violence increased overall.

Accessible Text for Appendix V: Comments from the U.S. Securities and Exchange Commission

August 27, 2024

Kimberly M. Gianopoulos
Managing Director
International Affairs & Trade

U.S. Government Accountability Office
411 G Street, NW
Washington, DC 20548

Dear Ms. Gianopoulos:

Thank you for giving the Securities and Exchange Commission (“SEC” or “Commission”) staff the opportunity to share our significant concerns with the draft report entitled CONFLICT MINERALS: SEC DISCLOSURE RULE HAS NOT IMPROVED PEACE AND SECURITY IN THE DEMOCRATIC REPUBLIC OF THE CONGO (GAO-24-107018) (“Report”) submitted by the Government Accountability Office (“GAO”) to the SEC on July 23, 2024. The Report states that it assesses, among other things, the effectiveness of the SEC’s Conflict Minerals rule (“Rule” or “SEC Rule”),¹ adopted in August 2012, in promoting peace and security in the Democratic Republic of the Congo (“DRC”) and adjoining countries.

The Rule was adopted by the Commission to implement the requirements of the Dodd-Frank Wall Street Reform and Consumer Protection Act (“DFA”) Section 1502,² which specifically mandates that the Commission promulgate regulations requiring, among other matters, disclosure about “conflict minerals” (as defined by DFA Section 1502), including whether such conflict minerals originated in the DRC and “adjoining countries” (as defined by DFA Section 1502), and, if so, submission of a report relating to those conflict minerals, the requirements of which are detailed in DFA Section 1502.

Section 1502 of the DFA also requires the GAO to submit annually to the “appropriate congressional committees” a report that includes, among other things: (A) an “assessment of the effectiveness of section 13(p) of the Securities Exchange Act of 1934,” which directed the Commission to adopt the Rule, “in promoting peace and security in the [DRC] and adjoining countries;” and (B) a “description of issues encountered by the Securities and Exchange Commission in carrying out the provisions of such section 13(p).”³ The first GAO report relating to the SEC was submitted in 2012. In recent years, Congress modified the annual reporting requirement and designated 2024 as the last year for GAO to submit a report.⁴

The 2024 Report makes assertions and reaches conclusions that rest on several erroneous factual assumptions, draws causal inferences that are not supported by the GAO’s statistical analyses, and deviates significantly from the GAO’s previously issued reports. As discussed in more detail below, the SEC staff have serious concerns about the Report that it shared with GAO staff through the commenting process. Because GAO has declined to share its revised draft in response to our technical comments, we cannot evaluate the degree to which GAO has addressed our many serious concerns. Our concerns with the draft provided to us include the following:

¹ Conflict Minerals, Release No. 34-67716 (Aug. 22, 2012), 77 Fed. Reg. 56,273 (Sept. 12, 2012) (codified at 17 CFR §§ 240.13p-1, 249b.400).

² Pub. L. 111-203, § 1502, 124 Stat. 1376, 2213-18 (2010).

³ DFA § 1502(d)(A), (B).

⁴ GAO Mandates Revision Act of 2016, Pub. L. 114-301, § 3(b), 130 Stat. 1514, 1515 (2016).

- Many conclusions expressed in the Report about violence in the DRC and adjoining countries are improperly attributed to the SEC Rule, as opposed to DFA Section 1502.
- The Report selectively cites studies that support GAO’s conclusions, while omitting or inaccurately referencing studies (identified by SEC staff to GAO staff) that reach different conclusions.
- The statistical analyses are critically flawed and lack transparency. They inappropriately infer causation—that DFA Section 1502 was a sole or contributing cause of violence in the DRC—without sufficient evidence to establish causality. Moreover, multiple findings in the Report, including conclusions contained in section headings and on the Highlights page, are based on critically flawed statistical analyses.
- The Report fails to fully discuss important limitations of the ACLED data it uses.

The Commission’s primary concerns with the Report are described in more detail below.

1. The Report Misleadingly Conflates the Enactment of DFA Section 1502 and the SEC Disclosure Rule.

The Report’s statistical analyses on violence use “July 2010—the enactment date of the Dodd-Frank Act, which required the SEC to promulgate the conflict minerals disclosure rule—as the [policy] intervention’s starting date.”⁵ To be clear, July 2010 is the date that Congress enacted DFA Section 1502. By contrast, the SEC Rule was proposed in December 2010, adopted in August 2012, and did not require any disclosures until June 2014.⁶ Timing matters a great deal when making claims that disclosures caused effects in the real world. It is challenging to see how required disclosures caused impacts before those disclosures were made. Thus, the Report is mistaken in discussing the statistical results for the July 2010 policy intervention in terms of the “SEC rule.”

To the extent that the statistical analyses purport to capture any associations at all, they are associations between the enactment of DFA Section 1502 and violence. The Report attempts to elide the distinction between the statute and the subsequent regulation by stating, “[a]lthough the SEC finalized its disclosure rule in 2012, our analysis used the enactment of the Dodd-Frank Act as a proxy for the rule because companies, governments, and others began to take action after the act’s enactment in anticipation of the SEC’s disclosure

⁵ Report at 71. The statistical models in Appendix II include a policy indicator variable, which is defined in Table 1 to take “a value of 1 for every month after July 2010. It takes a value of 0.33 for July 2010” and is presumably equal to zero for every month before July 2010. The statistical analyses in Appendix III use July 2010 as the intervention starting date. Id. at 82.

⁶ The Rule required affected companies to file their first specialized disclosure report on June 2, 2014, and annually on May 31 thereafter.

rule.”⁷ The clearer interpretation of any effects measured between 2010 and 2014 is that the Report’s analysis has captured effects of DFA’s Section 1502 being enacted, not anticipatory effects of the SEC Rule.⁸

The Report purports to cite studies attributing increases in violence in the DRC to the SEC Rule, when those studies do not make such an attribution. For example, the Report inaccurately invokes: (1) a Parker and Vadheim (2017) study that clearly associates any effects with DFA Section 1502 and a DRC governmental mining ban, not the SEC Rule;⁹ and (2) a Bloem (2023) study that associates any effects with DFA Section 1502, not the SEC Rule.¹⁰

2. The Report Omits Studies in Conflict With Conclusions Reached in the Report

The Report selectively cites the academic literature, omitting evidence and conclusions in competition with those claimed by the Report.¹¹ The Report omits multiple important studies that criticize the studies it does cite or from which it draws conclusions, including the following: (1) a Koch and Kinsbergen (2018) study, which analyzes the extent to which existing literature, including Parker and Vadheim (2017), has exaggerated unintended effects of conflict minerals legislation;¹² and (2) a Christensen (2022) study,¹³ which highlights limitations, caveats, and competing evidence to three studies that the Report cited in support of the Report’s findings.¹⁴ Further, the Report fails to mention an important result from a study that it does cite. The Baik, Even-Tov, Han, and Park (2024) study specifically examines the SEC Rule and finds that “the average number of conflicts in mining regions of covered countries declined by about 35% relative to other regions during the

⁷ Report at 16 n.42.

⁸ The Report selectively discusses one study that specifically examines the SEC Rule and finds that “the average number of conflicts in mining regions of covered countries declined by about 35% relative to other regions during the post-implementation period [after issuers were mandated to comply with the SEC Rule in 2014], suggesting that firms’ actions help mitigate conflicts.” Bok Baik et al., *The Real Effects of Supply Chain Transparency Regulation: Evidence from Section 1502 of the Dodd-Frank Act*, 62 *J. Accounting Research* 551, 556 (2024). The Report misleadingly omits this result from its discussion of Baik et al. (2024).

⁹ Report at 17 (stating “a study examining the rule’s [SEC Rule’s] short-term effects (those prior to 2013) found that, rather than reducing violence, it increased the likelihood that armed groups would loot civilians and commit violence against them”); see also Dominic P. Parker & Bryan Vadheim, *Resource Cursed or Policy Cursed? U.S. Regulation of Conflict Minerals and Violence in the Congo*, 4 *J. Ass’n Envtl. & Res. Economists* 1, 2-3 (2017) (stating “[o]ne interpretation is as follows: both the mining ban and the de facto boycott (Dodd-Frank) displaced militia groups and caused them to replace lost revenue by looting,” instead of attributing the finding to the SEC Rule). This study uses data from 2010 to 2012 and chooses “July 2010 as the time in which Dodd-Frank ‘treatment’ began” (at 22). The study mentions the SEC only twice.

¹⁰ Report at 17 (“The study found evidence suggesting that the SEC rule caused a reduction of workers employed at tantalum, tin, and tungsten mines”); see also Jeffrey R. Bloem, *Good Intentions Gone Bad? The Dodd-Frank Act and Conflict in Africa’s Great Lakes Regions*, 71 *Econ. Dev. & Cultural Change*, 654 (2023) (referring to “the passage of the Dodd-Frank Act,” not the SEC Rule). Bloem (2023) defines the start date of the conflict minerals policy as July 2010, two years before the SEC Rule was adopted.

¹¹ The SEC staff make no representation that they conducted an exhaustive literature search, and there may be additional studies that are relevant and neither cited nor discussed in the Report.

¹² Dirk-Jan Koch & Sara Kinsbergen, *Exaggerating Unintended Effects? Competing Narratives on the Impact of Conflict Minerals Regulation*, 57 *Res. Policy* 255 (2018).

¹³ Hans B. Christensen, *Is Corporate Transparency the Solution to Political Failure on Our Greatest Problems? A Discussion of Darendeli, Fiechter, Hitz, and Lehmann*, 74 *J. Accounting & Econ.* 101542, 5 (2022).

¹⁴ These studies are: Parker & Vadheim, *supra* note 9; Nik Stoop, Marijke Verpooten & Peter van der Windt, *More Legislation, More Violence? The Impact of Dodd-Frank in the DRC*, *PLoS ONE*, Aug. 9, 2018; and an earlier version of Bok Baik et al., *supra* note 8.

post-implementation period [after issuers were mandated to comply with the SEC Rule in 2014], suggesting that firms' actions help mitigate conflicts."¹⁵

3. *The Report's Statistical Analyses Have Critical Flaws.*

The Report fails to explain how its statistical analyses address the central question of causality. In asking whether the enactment of DFA Section 1502 or the SEC Rule caused or contributed to violence in the DRC, one important question is what would have been the level of violence absent a disclosure mandate: What would have happened to the affected regions of the DRC had DFA not included Section 1502? Section 1502 was adopted, in part, because of concerns that the exploitation and trade of conflict minerals by armed groups was used to finance conflict in the DRC and adjoining countries.¹⁶ Consistent with this concern, Figure 2 in the Report shows an increase in the total incidents of violence against civilians from 2007 to 2009, which predates the enactment of DFA.

In this regard, the Report does not address how its statistical analyses control for confounding temporal factors and events that could be associated with violence in the Eastern DRC. The Report states that, to control for "time-specific factors that affected the territories of Eastern DRC equally," the statistical models include time indicators, which means that "[t]here is a variable for each month except the first, which is omitted."¹⁷ These time indicators, however, do not control for factors or events that may have differentially affected violence across geographic areas in the Eastern DRC. For example, Hanai (2021) provides evidence that specific provinces in the Eastern DRC were, in fact, differentially affected by an increase in conflicts over time, such as North Kivu and South Kivu.¹⁸ Similarly, violence triggered by the M23 rebellion between 2012 and 2013 seemed to be concentrated around the city of Goma in the Eastern DRC.¹⁹ Under this approach, any violence following July 2010 that is caused by confounding factors or events and concentrated in the GAO's statistical analyses' policy territories²⁰ would be wrongly attributed to the enactment of DFA Section 1502, according to the logic of the Report's findings.

The Report does not explain how its statistical models control for confounding factors or events, including:

(i) the 2008-2009 National Congress for the Defence of the People offensive in the Eastern DRC;²¹

¹⁵ See, e.g., Bok Baik et al., *supra* note 8.

¹⁶ DFA § 1502(a).

¹⁷ Report at 71.

¹⁸ See Kazuyo Hanai, *Conflict Minerals Regulation and Mechanism Changes in the DR Congo*, 74 Res. Policy 102394 (2021).

¹⁹ See Actor Profile: The March 23 Movement (M23), ACLED (Mar. 23, 2023), <https://acleddata.com/2023/03/23/actor-profile-m23-drc/>.

²⁰ See *infra* policy territories (i.e., the treatment locations)

²¹ See 1960–2023 Eastern Congo: A Legacy of Intervention, Council of Foreign Relations (2024), <https://www.cfr.org/timeline/eastern-congo-legacy-intervention>.

(ii) the Organization for Economic Co-operation and Development’s (“OECD”) guidelines for responsible sourcing of minerals, which were already underway prior to the passage of DFA and were adopted in 2010;²²

(iii) the DRC’s governmental ban on artisanal mining from September 11, 2010, to March 2011, which covered three provinces—Maniema, North Kivu, and South Kivu;²³ (iv) the Electronic Industry Citizenship Coalition boycott that took hold on April 1, 2011;²⁴

(v) the rebellion of the armed group M23 between 2012 and 2013;²⁵

(vi) the subdivision in 2015 of the DRC’s six largest provinces into twenty-one new provinces, which likely differentially impacted the administrations and related services across the new provinces;

(vii) Regulation 2017/821 of the European Parliament and of the Council of May 17, 2017, laying down supply chain due diligence obligations for European Union importers of tin, tantalum, and tungsten, their ores, and gold originating from conflict-affected or high-risk areas, which obliges European Union importers to identify and mitigate risks in their supply chains;²⁶

(viii) the significant increase in the level of violence in certain regions of the Eastern DRC that began in 2017 (e.g., see Figure 2 and accompanying text in the Report);²⁷

(ix) the revived rebellion of the armed group M23 in 2021;²⁸ and

²² See Melanie Gouby, The Problem with “Conflict-Free” Minerals, *Foreign Policy* (May 22, 2024), <https://foreignpolicy.com/2024/05/22/conflict-free-minerals-traceability-schemes-congo/>.

²³ See Sarah Zingg Wimmer & Filip Hilgert, Bisi. A One-Year Snapshot of the DRC’s Principal Cassiterite Mine 6, *Int’l Peace Info. Serv.* (Nov. 28, 2011), available at https://ipisresearch.be/wpcontent/uploads/2011/11/20111128__Bisie_FHilgert_SZingg.pdf (“Given the close link between the illicit mining activities and insecurity in the area, some observers believe that the just-mentioned 4-day mass rape of last summer was the trigger for President Kabila’s imposition of an outright mining ban on the east of the country. Kabila had visited Walikale on 9 September and ordered the stop of mining activities in the territory the same day. Two days later, he suspended all exploitation and export of minerals from North Kivu and the neighbouring two provinces of South Kivu and Maniema, until further notice.”).

²⁴ See, e.g., Parker & Vadheim, *supra* note 9, at 9 (“The boycotting of eastern DRC minerals has been more explicit since April 1, 2011, when a coalition of large electronics and high-technology companies—the Electronic Industry Citizenship Coalition (EICC)—stopped buying the 3Ts from smelters unable to prove that their source minerals did not fund DRC conflict.”).

²⁵ See Center for Preventative Action, *Conflict in the Democratic Republic of Congo*, Council of Foreign Relations (updated June 20, 2024), <https://www.cfr.org/global-conflict-tracker/conflict/violence-democratic-republic-congo>.

²⁶ On January 1, 2021, the Conflict Minerals Regulation, Regulation (EU) 2017/821, also came into full force across the European Union.

²⁷ See Report, Figure 2, and accompanying text. The Report attributes this increase in violence in part to shifting alliances among various armed groups as well as the emergence of the armed group Cooperative for the Development of the Congo (CODECO) and the strengthening of a separate group, Allied Democratic Forces (ADF), according to experts that GAO staff interviewed. See *id.* at 11; see also Martins Abadias do Nascimento & Richard Apau, *CODECO Violent Extremism Activities in Eastern DRC: Analysis of Vulnerabilities, Response, and Resilience*, African Centre for the Study & Res. on Terrorism (Apr. 2023), available at https://au.int/sites/default/files/documents/42722-doc-CODECO_Violent_Extremism_Activities_in_Eastern_DRC_Analysis_of_Vulnerabilities_Response_and_Resilience.pdf.

²⁸ See 1960–2023 Eastern Congo, *supra* note 21.

(x) any other factor or event that could have triggered an increase in violence across specific areas in the Eastern DRC following DFA's passage.

DFA Section 1502 applied across all territories in the Eastern DRC, making it impossible to distinguish locations within the Eastern DRC that were covered by DFA Section 1502 ("treatment locations") from locations not covered by DFA Section 1502 ("control locations"). A set of control locations is necessary to separately identify the effects of DFA Section 1502 and the effects of confounding temporal factors and events. SEC staff were informed that the policy indicator defined the policy territories (i.e., the treatment locations) as the union of territories in which mining was banned and those containing at least one artisanal mine²⁹ with geocoordinates falling within the U.S. State Department's Section 1502 map of conflict mining zones.³⁰ The basis for GAO's methodology choice is the Parker and Vadheim (2017) study, which self-reports that this designation of treatment areas is problematic, as "the composition of the control and treatment areas—that is, the policy and nonpolicy areas—unlikely remained the same because miners likely relocated across territories for income opportunities.³¹ Similarly, to the extent that DFA Section 1502 was enacted as a response to rising violence, the areas that are designated as treatment areas would be exactly the areas relatively more likely to see shifts in population, shifts in mining activity, shifts in violence, or other trends absent DFA Section 1502.³² More generally, this approach to defining the policy indicator is fundamentally flawed since all locations within the Eastern DRC were covered by Section 1502 (i.e., treated). The Report does not address these limitations.

Also, the policy indicator coefficient captures only a change in the difference in likelihood of violence across different areas (controlling for some factors), and does not, in fact, measure the likelihood of violence relative to a but-for world in which DFA Section 1502 (and, later on, the SEC Rule) had not been enacted. Any attempt to interpret this change as being caused by DFA Section 1502 is entirely predicated on the belief that DFA Section 1502, and not any of the myriad confounding events over the event window, drove this change. Whether this belief is warranted depends not only on how closely the designation of treatment and control territories is related to the actual relative effect of DFA Section 1502, but also how unrelated the designation of treatment and control territories is to other alternative explanations, as well as the relative magnitude of the impacts of these events on violence. All uncontrolled factors that drove changes in violence at regions with artisanal mines and regions subject to the ban (relative to regions both without artisanal mines and not subject to the ban) over the sample period are captured in the "policy indicator" coefficient. As presented, the Report

²⁹ The Report states that it focuses on violence in locations with artisanal mines "because armed groups are less likely to interfere with industrial mines." Report at 69. The Report acknowledges "that the expansion of industrial mines decreased the number of battles among armed groups." Id. at 21. The Report's models fail to account for the location of industrial mining, and to the extent it is correlated with that of artisanal mining the models' results on violence would be biased. For instance, if violence decreased around industrial mines after the enactment of DFA Section 1502, and industrial mines were principally located in territories classified by the Report as "control locations," then the Report's analyses would find a relative increase in violence in the treatment locations even if violence did not increase in those areas.

³⁰ The Report's statistical analyses for the Eastern DRC, as of July 23, failed to distinguish between locations that were covered by DFA Section 1502 and locations not covered by Section 1502. Report Appendix II.

³¹ 31 See Parker & Vadheim (2017), *supra* note 9, at 44. This serious problem with the designation of treatment areas is exacerbated in the Report as it examines a longer time period following the enactment of DFA 1502. While the Parker and Vadheim (2017) study²⁴ uses data through December 2012 (1.5 years after the enactment of DFA Section 1502), GAO's statistical analyses use data through December 2016 as well as December 2022 (5.5 years and 11.5 years, respectively, after the enactment of DFA Section 1502).

³² 32 As a closely related matter, to the extent that GAO's statistical models fail to control for, over time, the number of industrial mines, economic activity in general, and population patterns, the Report's methodology could misattribute the effects of these and related shifts on violence as effects of the enactment of DFA Section 1502 around artisanal gold mines on violence. The same problem applies to the Report's analyses of artisanal mines of tantalum, tin, and tungsten.

cannot exclude the hypothesis that violence would have intensified even more in the treatment territories but for the enactment of DFA Section 1502, or that Section 1502 actually decreased violence in the control territories in GAO's statistical analyses.

The discussion of the statistical results in the Report improperly asserts that a causal connection on the basis of its statistical models is warranted so long as any potential confounding factors and events, such as those listed above, are plausibly related to the treatment being studied (in this case, enactment of DFA). For example, the Report states "We chose this date [July 2010] because, although the SEC finalized the rule in 2012 and began requiring disclosures in 2014, stakeholders began taking actions in anticipation of the rule immediately after the act was enacted. For example, DRC President Joseph Kabila announced a ban on artisanal mineral exploitation in the eastern DRC from September 2010 until March 2011."³³ In discussions with SEC staff, GAO staff confirmed that this assumption underlies the statistical analyses, stating that they are unable to rule out that the subsequent events were not themselves caused by DFA Section 1502 and the SEC Rule. This reasoning fundamentally misunderstands statistical analysis of causal relationships: Whether DFA Section 1502 (or the SEC Rule) caused these future events is a hypothesis that cannot be assumed – it must be tested and confirmed with appropriate analysis of treatment and control groups. In other words, to establish a causal relationship, the Report must demonstrate that the treatment being studied (in this case, enactment of DFA Section 1502) is a but-for cause of the outcome being studied (in this case, violence).³⁴ This is not feasible absent appropriately designating treatment and control groups. Doing so would require showing not only that certain events were caused by the enactment of DFA Section 1502, but also that the violence would not have increased even more absent DFA Section 1502. In sum, the statistical models in the Report do not allow for any causal inferences between DFA Section 1502 (let alone the SEC Rule) and violence.

4. The Report Fails to Fully Discuss Important Limitations of the ACLED Data It Uses.

The Report relies on ACLED data to identify violence. The Report acknowledges measurement error in the ACLED data, also stating "the SEC disclosure rule, by focusing additional attention on areas with artisanal mines, may have led to more accurate reporting of violence, causing us to conclude incorrectly that violence increased when in fact there was just better recording of the violence that was occurring."³⁵

The Report does not provide sufficient context on the limitations related to ACLED's dynamic sourcing of conflict data. The Report fails to address, for instance, the Raleigh, Kishi, and Linke (2023) study, which states: "ACLED's dynamic sourcing model may help to ensure that conflict coverage validity as well as reliability across conflicts is maximized, but given the changes over time in the information environment more broadly, the comprehensiveness of its data collection can only be as good as the quality of information available at a given time. The availability of in-depth information, and the media environment more largely, in 1997 (the start of ACLED coverage for many African countries) is quite different from data availability in 2022."³⁶

³³ Report at 82.

³⁴ For instance, the burden of proof is on the Report to show that events such as the presidential ban on artisanal mines or the OECD guidelines for responsible sourcing of minerals were caused by DFA and were not set into motion by factors outside of DFA.

³⁵ Report at 79.

³⁶ See Clionadh Raleigh, Roudabeh Kishi & Andrew Linke, Political instability patterns are obscured by conflict dataset scope conditions, sources, and coding choices, 10 *Humanities & Soc. Sciences Commc'ns* 74 (2023). The Report uses ACLED data for the period 2004-2022.

The Report also fails to address the Eck (2012) study, which highlights important limitations of the ACLED data, including for the Report’s sub-national analyses in Appendix II: “The aim of this article is to provide readers with some guidelines as to when these datasets should be used and when they should be avoided; it finds that those interested in subnational analyses of conflict should be wary of ACLED’s data due to uneven quality-control issues which can result in biased findings if left unchecked by the researcher.”³⁷ “First, ACLED’s unit of analysis is the event (violent or nonviolent), yet researchers rarely theorize about events per se, but rather the production and targets of violence. . . . It is conceptually problematic for many theories of civil war when no distinction is made in the intensity and nature of violence. Second, ACLED does not provide users with the information which is often needed to study theories of civil war: it provides no information distinguishing between whether the actor is connected to the state (i.e. military or police forces), nor does it provide Actor IDs which could be used to track the behavior of a warring party.”³⁸ Additionally, the Report fails to discuss limitations regarding the use of ACLED data that Parker and Vadheim (2017) and Chang and Christensen (2024) report.³⁹

These data issues are particularly relevant to the Report’s statistical analyses on the presence of any violence at the level of a second-level administrative unit across the Eastern DRC.⁴⁰ In these analyses, properly identifying the presence of any violence at the level of a second-level administrative unit in a given year and month is critical. Misclassification in this identification process (i.e., the presence or absence of any violence) that is correlated with designation of treatment locations and control locations would lead to biased and inconsistent results in the Report’s statistical analyses. In particular, treatment areas are exactly the areas more likely to incorrectly have no identification of violence pre-2010 and correct identification of violence post-2010, as they are the locations more likely to have mining-related violence. In such a situation, the Report’s finding that the enactment of DFA Section 1502 was likely associated with a spread of violence would not be statistically valid.

³⁷ See Kristine Eck, In Data We Trust? A Comparison of UCDP GED and ACLED Conflict Events Datasets, 47 Cooperation & Conflict 124, 124 (2012) (emphasis added).

³⁸ See id. at 126.

³⁹ See Parker & Vadheim, supra note 9, at 44 (“[W]e recognize that the causes of violence in the eastern DRC are more complex than the theory we present (see, e.g., Austesserre 2012), and we concede that the ACLED data are not up to the task of precisely testing each alternative theory against one another.”); Samuel Chang & Hans Bonde Christensen, Can Audits Shift the Battleground? Supply Chain Certifications and Conflict Dynamics in the Congo 29 (Becker Friedman Institute for Economics Working Paper 2023-144, 2024), available at <https://ssrn.com/abstract=4609332> (“Eck (2012) points out various issues with ACLED including coverage inconsistencies and event coding errors which may interfere with the inference of results.”).

⁴⁰ See Report at 69. Specifically, at the level of a second-level administrative unit, in a given year and month, the statistical analysis’ outcome variable is a ‘violent event indicator’, which equals 1 if there is any violence, and 0 otherwise. See also id. at 68 n.154 (“For the purpose of this analysis, we defined ‘violence’ and ‘violent events’ as battles, explosions and remote violence, or violence against civilians.”). Figure 4 in the Report (at 18) also purports to show the geographic spread of violence across second-level administrative units in the eastern DRC from 2010 to 2022. But the figure is based on the presence or absence of any violence within each unit during the selected years, and thus it fails to show whether the geographic concentration of violence changed meaningfully over time. For transparency and greater contextual sophistication, the final report should include a table documenting the number of violent events in 2010 and 2012 in each second-level administrative units mapped in Figure 4. Lastly, in discussions with SEC staff, GAO staff stated that the words “spread of violence” are meant to convey that a consistent amount of violence was distributed in a larger geographic area rather than to suggest that the violence increased overall.

In sum, given the limitations discussed above, the SEC staff strongly objected during the commenting process to language and conclusions in the draft Report that asserted, without sufficient support, a causal link (whether sole or contributory) between DFA—and the SEC Rule—and violence in the DRC. As GAO did not provide the SEC staff with a revised draft, we cannot know whether GAO has sufficiently addressed these objections. The final version of the report should not include any discussion of causal links between DFA Section 1502 (or the SEC Rule) and increased violence in the region because it lacks a sufficient analytical basis to reach such a conclusion. To the extent the final version of the report includes a discussion of “associations” between DFA Section 1502 (or the SEC Rule) and increased violence in the region, the final version of the report should appropriately acknowledge that these associations are not evidence of causal links.

Sincerely,
Mellissa Duru
Deputy Director, Division of Corporation Finance
signing on behalf of
Erik Gerding
Director, Division of Corporation Finance

GAO Comments

1. During the agency comment period, we met with U.S. Securities and Exchange Commission (SEC) officials to discuss their concerns about our draft report and solicited additional technical comments. Consistent with our agency protocols, we provided a document detailing the changes that we planned in response to SEC's comments on our draft report. In that document, we noted that SEC's technical comments helped to strengthen our report and that, in response, we had made several changes to the statistical analyses, conclusions, and description of our methodology. We also shared the results of the revised analyses and noted that our overall findings remained the same.
2. We agree with SEC that the timing used as the intervention date matters when determining the effects of the conflict minerals disclosure rule.¹ As we state in the body of the report and in the appendices, our analysis uses the enactment of the Dodd-Frank Wall Street Reform and Consumer Protection Act (Dodd-Frank Act) in July 2010 as a proxy for the SEC conflict minerals disclosure rule because once the act was signed, companies, governments, and others began to take action in anticipation of the rule that the act required the SEC to issue.² For example, company representatives told us that before SEC issued the rule in 2012, their companies began preparing for its issuance by mapping supply chains for the minerals in their products and developing conflict minerals policies. Such policies may require cessation of business with suppliers the companies believe pose a risk of supporting armed groups in the Democratic Republic of the Congo (DRC) or adjoining countries, as we note in the report. In addition, due diligence programs and traceability schemes to assist companies in tracing minerals' origins began prior to 2014, when SEC started requiring companies to file disclosures. Because changes in anticipation of the rule began before 2014, when the first disclosures were due, we used July 2010 as the intervention date—similar to most of the relevant peer-reviewed literature—to capture all of the rule's effects.
3. The Dodd-Frank Act requires us to assess the effectiveness of section 13(p) of the Securities Exchange Act of 1934, as added by section 1502(b) of the act, in promoting peace and security in the DRC and adjoining countries.³ Section 13(p) requires SEC to promulgate regulations containing disclosure and reporting requirements on the use of certain conflict minerals from the DRC and adjoining countries.⁴ Therefore, we assessed the effectiveness of the SEC disclosure rule in promoting peace and security in the DRC and adjoining countries. We added a footnote with this explanation on page 2 of this report.

Further, the effects of the Dodd-Frank Act's enactment and effects in anticipation of the SEC rule are essentially identical. Because section 1502(b) of the Dodd-Frank Act required that SEC promulgate a conflict minerals disclosure rule and set out key aspects of what the rule would require, actions taken by governments, companies, and others, including armed groups, can be seen as reactions to the SEC's disclosure rule.
4. We revised the report sections citing other empirical studies to clarify that these studies analyzed the effect of the Dodd-Frank Act.
5. Although we thank SEC for sharing additional literature, our report cites quantitative data from reports and findings from empirical studies that we determined were relevant and objective and that met our evidentiary

¹77 Fed. Reg. 56,274 (Sept. 12, 2012), codified at 17 C.F.R. § 240.13p-1.

²Pub. L. No. 111-203, § 1502, 124 Stat. 1376, 2213-18 (2010).

³Pub. L. No. 111-203, § 1502(d)(2)(A).

⁴Pub. L. No. 111-203, § 1502(b).

standards. Some of the studies and analyses identified by SEC staff did not meet these criteria. For example, we did not cite the Baik et al. study's analysis that found the SEC conflict minerals disclosure rule was linked to a decrease in conflict in the DRC and adjoining countries, because (1) the estimated coefficient does not separate the effects in the DRC from those in the adjoining countries and (2) the analysis does not contain data for any years before the Dodd-Frank Act's enactment.⁵ Consequently, the Baik et al study makes a comparison between "treated" time periods. The Koch and Kinsbergen study focuses on narratives about the *de facto* embargo on conflict minerals from the DRC that followed the enactment of Dodd-Frank Act. It does not use statistical analysis to determine the effect of the act.⁶

We believe that SEC's comments overstate the contributions of other studies it cites. For example, many of the limitations and concerns identified in the 2022 Christensen study are not relevant to our analysis, because the study focuses on how to identify the effects of conflict mining disclosures from other facets of the Dodd-Frank Act and the SEC rule, such as due diligence programs.⁷ Nonetheless, Christensen notes that other changes that occurred around the time of the Dodd-Frank Act's enactment—including "increased diplomatic efforts by the United States government and the introduction of a regional certification mechanism into the law of the DRC"—could also influence the estimates. In a 2024 study, Christensen and his coauthor state that the "widespread boycott of [tantalum, tin, tungsten, and gold] from the affected areas by SEC-registered companies" and the "contemporaneous ban on artisanal mining by the Congolese government" led to the adoption of the regional certification mechanism.⁸ Thus the authors argue that other events are linked to the SEC rule. As we note in our report, our estimates capture the overall effects of the rule, as proxied by the enactment of the Dodd-Frank Act.

6. As we note in our report, our estimates capture the overall effects of the SEC rule, as proxied by the enactment of the Dodd-Frank Act. These effects include any associated diplomatic efforts and responses by governments, companies, and other actors (to the extent that these are not captured by the fixed effects). Many of the potentially confounding events SEC discusses in its comments, such as the boycotting of minerals and the DRC government's artisanal mining ban, can be viewed as responses to the enactment of the Dodd-Frank Act and its requirement that the SEC issue the conflict minerals disclosure rule and are therefore part of the overall effect of the rule.

Our analysis already considers other factors discussed by SEC. For instance, the 2008 and 2009 National Congress for the Defence of the People offensive in eastern DRC predates the Dodd-Frank Act. Since the pretreatment trends for treated and nontreated areas are similar, this event does not affect our comparison. Similarly, by reproducing our main results after limiting the data to the pre-2017 period, we show that they are not caused by the 2017 surge in violence. More broadly, the peer-reviewed literature has consistently found increases in violence in treated territories with gold mines despite using different time periods (thereby showing that the effects are not driven by any particular time-bound confounding factor).

⁵Bok Baik et al., "The Real Effects of Supply Chain Transparency Regulation: Evidence from Section 1502 of the Dodd-Frank Act," *Journal of Accounting Research*, vol. 62, no. 2 (May 2024).

⁶Dirk-Jan Koch and Sara Kinsbergen, "Exaggerating unintended effects? Competing narratives on the impact of conflict minerals regulation," *Resources Policy*, vol. 57 (2018).

⁷Hans B. Christensen, "Is Corporate Transparency the Solution to Political Failure on Our Greatest Problems? A Discussion of Darendeli, Fiechter, Hitz, and Lehmann," *Journal of Accounting & Economics*, vol. 74, no. 2-3 (2022).

⁸Samuel Chang and Hans B. Christensen, *Can Audits Shift the Battleground? Supply Chain Certifications and Conflict Dynamics in the Congo*, Working Paper no. 2023-144 (Chicago: University of Chicago, Becker Friedman Institute of Economics, June 2024).

7. Our methodology followed the peer-reviewed literature by comparing “treated” territories of eastern DRC with “control” territories. The treated territories represent the mining areas with armed groups, which are the territories likely to be most affected by the SEC rule. Specifically, the treated territories are those in which the President of the DRC announced a ban on artisanal mining from September 2010 through March 2011 and those containing at least one mine with geocoordinates within the Department of State’s 2011 map of conflict mining zones. The DRC President announced the ban during a trip to North Kivu Province during which he reportedly stated his determination to address the violence caused by armed groups.⁹ Our methodology therefore compares areas that were likely to be most affected by the policy with those that were likely to be less affected.

This comparison probably understates the overall increases in violence. Parker and Vadheim state that “the drawback of this model is that heavily endowed territories outside the policy targeted zone are not clean counterfactuals for heavily endowed territories inside the zone, if [the] Dodd-Frank [Act] caused battles for their control.”¹⁰ According to the study, if the policy caused spatial spillovers of violence into nonpolicy territories, then “these comparisons are biased downward and understate the true effect of the policies.” As SEC notes in its comments, the study further states that “the composition of the control and treatment areas—that is, the policy and nonpolicy areas—unlikely remained the same because miners likely relocated across territories for income opportunities.” However, this discussion similarly concludes that this would lead the coefficients to understate the increase in violence.

8. We moderated the causal inferences in our report, choosing instead to focus on the association between the SEC conflict minerals disclosure rule and the spread of violence in territories containing artisanal gold mines. The peer-reviewed literature that uses the same methodology makes causal assertions. In the interest of being conservative, we have focused on association linkages and made the related changes in the final report.
9. Researchers have primarily used two conflict event datasets—Armed Conflict Location and Event Data (ACLED) and the Uppsala Conflict Data Program Georeferenced Events Dataset, respectively. In a 2012 study, Eck notes two main issues to consider when choosing event-level conflict datasets, one of which is the type of data needed.¹¹ For those interested in violent nonfatal events, as we are, Eck concludes that ACLED data are the only option to consider because data from the Uppsala program do not include such events. The distinction between fatal and nonfatal events is particularly relevant in the DRC because of the prevalence of violent but nonfatal events, including sexual violence related to the conflict and the forced recruitment of youths. Consequently, a dataset, such as the Uppsala Conflict Data Program’s, that does not include violent nonfatal events would lead to an incomplete and incorrect depiction of violence in the DRC. As a result, the relevant peer-reviewed literature also uses ACLED data.

Measurement error is inherent in survey data. For the measurement error to undermine our overall conclusions, the error would need to result in the recording of more violence in “treated” areas with artisanal gold mines after the enactment of the Dodd-Frank Act. Evidence suggests that the opposite occurred—ACLED may have underreported violence after the act’s enactment. In particular, in a 2020 peer-reviewed study, Sanchez de la Sierra compared ACLED conflict data, aggregated to the annual level,

⁹Sara Geenen, Gabriel Kamundala, and Francine Iragi, “Le Pari Qui Paralyisait: la Suspension des Activités Minières Artisanales au Sud-Kivu,” *L’Afrique des Grands Lacs, Annuaire 2010-2011* (Paris: 2011) 161-183.

¹⁰Dominic P. Parker and Bryan Vadheim, “Resource Cursed or Policy Cursed? U.S. Regulation of Conflict Minerals and Violence in the Congo,” *Journal of the Association of Environmental and Resource Economists*, vol. 4, no. 1 (March 2017).

¹¹Kristine Eck, “In data we trust? A comparison of UCDP GED and ACLED conflict events datasets,” *Cooperation and Conflict*, vol. 47, no. 1 (2012): 124–141.

with villager recollections of conflict in eastern DRC.¹² For the sample of villages surveyed, the ACLED data track villager recollections very closely for 2008 and 2009. For 2010 and 2011, however, the ACLED data underreport conflicts relative to villager recollections. Further, with respect to concerns regarding the dynamic sourcing of data, we accounted for the increased reporting of data by the Kivu Security Tracker after 2017 in our robustness checks.

More broadly, the measurement error Eck discusses seems unlikely to undermine our results, since the “uneven quality-control” refers to miscoded location information and misuse of geoprecision codes—neither of which is systematically related to the timing of the Dodd-Frank Act’s enactment or the location of artisanal mines. Relatedly, Eck notes that the geoprecision can affect the coding of covariates, such as rainfall or the number of mines. Because our analysis aggregates covariates at the second-level administrative unit, geoprecision coding errors are similarly unlikely to affect our analysis.¹³

¹²Raúl Sánchez de la Sierra, “On the Origins of the States: Stationary Bandits and Taxation in Eastern Congo,” *Journal of Political Economy*, vol. 128, no. 1 (2020).

¹³Research also suggests that this type of measurement error in similar models would result in the underestimation of the magnitude and statistical significance of the estimated coefficients. For further information, see Yi Li, Haicheng Tang, and Xihong Lin, “Spatial Linear Mixed Models with Covariate Measurement Errors,” *Statistica Sinica*, vol. 19, no. 3 (2009).

Appendix VI: Comments from the U.S. Agency for International Development



Kimberly Gianopoulos
Managing Director, International Affairs and Trade
U.S. Government Accountability Office
441 G Street, N.W.
Washington, D.C. 20226

August 23, 2024

Re: *Conflict Minerals: SEC Disclosure Rule Has Not Improved Peace and Security in the Democratic Republic of the Congo (GAO-24-107018)*

Dear Ms. Gianopoulos:

I am pleased to provide the formal response of the U.S. Agency for International Development (USAID) to the draft report produced by the U.S. Government Accountability Office (GAO) titled *Conflict Minerals: SEC Disclosure Rule Has Not Improved Peace and Security in the Democratic Republic of the Congo (GAO-24-107018)*.

USAID concurs with GAO's observations in this 2024 report and commits to incorporating the knowledge gained into its programming. Many of the key observations are already incorporated into USAID's strategies and programming. USAID's work in the Great Lakes region continues to focus on the root causes that create conditions contributing to the exploitation of conflict minerals by armed groups, regional insecurity, and sexual and gender based violence. As detailed in the enclosure, USAID's work has been at the forefront of the U. S. Government's efforts and will continue to do so.

I am transmitting this letter and the enclosed comments from USAID for inclusion in the GAO's final report. Thank you for the opportunity to respond to the draft report, and for the courtesies extended by your staff while conducting this engagement. We appreciate the opportunity to participate in the complete and thorough evaluation of conflict minerals in the Great Lakes region.

Sincerely,

A handwritten signature in black ink that reads "Ruth Buckley".

Ruth Buckley
Deputy Assistant Administrator
Bureau for Management

Enclosure: a/s

COMMENTS BY THE U.S. AGENCY FOR INTERNATIONAL DEVELOPMENT ON THE DRAFT REPORT PRODUCED BY THE U.S. GOVERNMENT ACCOUNTABILITY OFFICE (GAO) TITLED, *Conflict Minerals: SEC Disclosure Rule Has Not Improved Peace and Security in the Democratic Republic of the Congo* (GAO-24-107018)

The U.S. Agency for International Development (USAID) would like to thank the U.S. Government Accountability Office (GAO) for the opportunity to respond to this draft report. We appreciate the extensive work of the GAO engagement team.

USAID applauds GAO's commitment to examining the complex nexus of conflict minerals, peace and security, and gender-based violence (GBV) in the Democratic Republic of the Congo (DRC) and Great Lakes region. Since the passing of the Dodd-Frank legislation in 2010 and continuing through the 17 previous GAO reports, USAID has welcomed GAO's efforts, findings, recommendations, and collaboration in understanding and addressing the issues.

USAID concurs with GAO's observations in this 2024 report and commits to incorporating the knowledge gained into its programming. Many of the key observations are already incorporated into USAID's strategies and programming.

At the USAID Mission, Eastern DRC is prioritized as a focal zone for USAID development and humanitarian efforts. In addition to a series of responsible mineral programs over the years, (Clean Gold, Capacity Building for a Responsible Minerals Trade, Sustainable Mine Site Validation Project, and the Africa Trade and Invest Minerals Activity), the Mission has incorporated minerals into other programming areas, such as local governance, environmental, and anti-corruption programs. This programming is consistent with the GAO observations that the factors contributing to conflict minerals are much larger and deeper than the control and management of extraction sites, value chains, and exports. In addition, DRC was prioritized for minerals-themed programming in USAID's Grand Challenge to Counter Transnational Corruption.

In addition to technical programming, USAID has contributed greatly to interagency policy formulation, driving a renewed interagency strategic approach for minerals in DRC as well as a [Statement of Concern Related to Certain Minerals Supply Chains from Rwanda and Eastern DRC Contributing to the Ongoing Conflict](#).

Building on the findings that industry initiative and commitment, not just legal mandates, are key to creating a lasting culture of transparency, accountability, and responsibility in minerals supply chains, USAID is proud to co-lead the Public Private Alliance for Responsible Minerals Trade (PPA) since 2011. Born as a result of Dodd-Frank Legislation, the PPA has evolved to include a global mandate and minerals other than those covered under Dodd-Frank

legislation. Partnership with the private sector is a key tenant of USAID's development approach and the minerals portfolio has been at the forefront of those efforts for many years.

While the evidence does not demonstrate that the Dodd Frank Act has reduced violence in Eastern DRC, industry stakeholders, including the Government of DRC (GDRC), firmly believe that the law has had a positive impact on the ground and would like to see its continued implementation. According to GDRC officials, the Dodd Frank Act has had important impacts on the country and economy, namely reducing the benefits accrued to armed groups through illegal taxes and operations while increasing government revenues by setting up cleaner and more transparent minerals supply chains.

Outside of the minerals portfolio, USAID remains committed to advancing peace and stability in Eastern DRC, with dedicated programming solely addressing those concerns. Preventing and mitigating effects of GBV is also prioritized in USAID health programs in the DRC and Great Lakes region.

As demonstrated by decades of robust programming, USAID is committed to addressing the topics covered in this report in the DRC and Great Lakes region and will continue to be at the forefront of the U. S. Government's policies, programming, and efforts.

Appendix VI: Comments from the U.S. Agency for International Development

August 23, 2024

Kimberly Gianopoulos
Managing Director, International Affairs and Trade
U.S. Government Accountability Office
441 G Street, N.W.
Washington, D.C. 20226

Re: Conflict Minerals: SEC Disclosure Rule Has Not Improved Peace and Security in the Democratic Republic of the Congo (GAO-24-107018)

Dear Ms. Gianopoulos:

I am pleased to provide the formal response of the U.S. Agency for International Development (USAID) to the draft report produced by the U.S. Government Accountability Office (GAO) titled Conflict Minerals: SEC Disclosure Rule Has Not Improved Peace and Security in the Democratic Republic of the Congo (GAO-24-107018).

USAID concurs with GAO's observations in this 2024 report and commits to incorporating the knowledge gained into its programming. Many of the key observations are already incorporated into USAID's strategies and programming. USAID's work in the Great Lakes region continues to focus on the root causes that create conditions contributing to the exploitation of conflict minerals by armed groups, regional insecurity, and sexual and gender based violence. As detailed in the enclosure, USAID's work has been at the forefront of the U. S. Government's efforts and will continue to do so.

I am transmitting this letter and the enclosed comments from USAID for inclusion in the GAO's final report. Thank you for the opportunity to respond to the draft report, and for the courtesies extended by your staff while conducting this engagement. We appreciate the opportunity to participate in the complete and thorough evaluation of conflict minerals in the Great Lakes region.

Sincerely,
Ruth Buckley
Deputy Assistant Administrator
Bureau for Management

Enclosure: a/s

COMMENTS BY THE U.S. AGENCY FOR INTERNATIONAL DEVELOPMENT ON
THE DRAFT REPORT PRODUCED BY THE U.S. GOVERNMENT ACCOUNTABILITY
OFFICE (GAO) TITLED,

Conflict Minerals: SEC Disclosure Rule Has Not Improved Peace and Security in the Democratic Republic of the Congo (GAO-24-107018)

The U.S. Agency for International Development (USAID) would like to thank the U.S. Government Accountability Office (GAO) for the opportunity to respond to this draft report. We appreciate the extensive work of the GAO engagement team.

USAID applauds GAO's commitment to examining the complex nexus of conflict minerals, peace and security, and gender-based violence (GBV) in the Democratic Republic of the Congo (DRC) and Great Lakes region. Since the passing of the Dodd-Frank legislation in 2010 and continuing through the 17 previous GAO reports, USAID has welcomed GAO's efforts, findings, recommendations, and collaboration in understanding and addressing the issues.

USAID concurs with GAO's observations in this 2024 report and commits to incorporating the knowledge gained into its programming. Many of the key observations are already incorporated into USAID's strategies and programming.

At the USAID Mission, Eastern DRC is prioritized as a focal zone for USAID development and humanitarian efforts. In addition to a series of responsible mineral programs over the years, (Clean Gold, Capacity Building for a Responsible Minerals Trade, Sustainable Mine Site Validation Project, and the Africa Trade and Invest Minerals Activity), the Mission has incorporated minerals into other programming areas, such as local governance, environmental, and anti-corruption programs. This programming is consistent with the GAO observations that the factors contributing to conflict minerals are much larger and deeper than the control and management of extraction sites, value chains, and exports. In addition, DRC was prioritized for minerals-themed programming in USAID's Grand Challenge to Counter Transnational Corruption.

In addition to technical programming, USAID has contributed greatly to interagency policy formulation, driving a renewed interagency strategic approach for minerals in DRC as well as a Statement of Concern Related to Certain Minerals Supply Chains from Rwanda and Eastern DRC Contributing to the Ongoing Conflict.

Building on the findings that industry initiative and commitment, not just legal mandates, are key to creating a lasting culture of transparency, accountability, and responsibility in minerals supply chains, USAID is proud to co-lead the Public Private Alliance for Responsible Minerals Trade (PPA) since 2011. Born as a result of Dodd-Frank Legislation, the PPA has evolved to include a global mandate and minerals other than those covered under Dodd-Frank legislation. Partnership with the private sector is a key tenant of USAID's development approach and the minerals portfolio has been at the forefront of those efforts for many years.

While the evidence does not demonstrate that the Dodd Frank Act has reduced violence in Eastern DRC, industry stakeholders, including the Government of DRC (GDRC), firmly believe that the law has had a positive impact on the ground and would like to see its continued implementation. According to GDRC officials, the Dodd Frank Act has had important impacts on the country and economy, namely reducing the benefits accrued to armed groups through illegal taxes and operations while increasing government revenues by setting up cleaner and more transparent minerals supply chains.

Outside of the minerals portfolio, USAID remains committed to advancing peace and stability in Eastern DRC, with dedicated programming solely addressing those concerns. Preventing and mitigating effects of GBV is also prioritized in USAID health programs in the DRC and Great Lakes region.

As demonstrated by decades of robust programming, USAID is committed to addressing the topics covered in this report in the DRC and Great Lakes region and will continue to be at the forefront of the U. S. Government's policies, programming, and efforts.

Appendix VII: GAO Contact and Staff Acknowledgements

GAO Contact

Kimberly M. Gianopoulos, (202) 512-8612 or gianopoulosk@gao.gov

Staff Acknowledgements

In addition to the contact named above, Ryan Vaughan (Assistant Director), Daniela Rudstein (Analyst-in-Charge), Marc Rockmore, Craig Rossett, Matt St. Geme, Jim Ashley, Breanne Cave, Jieun Chang, Chris Koblitis, Samantha Lalian, Reid Lowe, Terry Richardson, Jeff Tessin, and Frances Tirado made key contributions to this report.

Related GAO Products

Conflict Minerals: 2022 Company Reports on Mineral Sources Were Similar to Those Filed in Prior Years. [GAO-23-106295](#). Washington, D.C.: July 19, 2023.

Conflict Minerals: Overall Peace and Security in Eastern Democratic Republic of the Congo Has Not Improved since 2014. [GAO-22-105411](#). Washington, D.C.: September 14, 2022.

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