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The effects of African civil conflicts on FDI: The moderating role of bilateral political relations

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ABSTRACT

Civil conflicts have replaced international conflicts as the primary political risk to the stability and prosperity of Africa, bringing uncertainty to foreign direct investment (FDI). Meanwhile, closer bilateral political relations provide institutional guarantee to safeguard the interests of stakeholders. This paper investigates the influence of civil conflicts on foreign direct investment in Africa, and the modulating role of bilateral political relations between home and host countries. We relax the assumption that all forms of civil conflicts are homogenous in the effects on FDI and construct a unique data set for FDI to Africa from China, the United States, and Europe between 2013 and 2019. The study results show significant FDI-deterring effects of civil conflict and one-sided violence, with the former more pronounced in low-income and sub-Saharan African countries and to Chinese and British investors. And closer bilateral political relations can alleviate the detrimental effects of civil conflicts, especially one-sided violence, on FDI. Our findings confirm the strategic role of bilateral relationship in ensuring the interest of Chinese multinational corporations and the stability and prosperity of African countries.

1. Introduction

With the acceleration of industrialisation and urbanisation, Africa's demand for foreign direct investment (FDI) increases continuously. It now becomes a global investment hot spot. In 2022 alone, FDI stock in Africa amounted 44.93 billion US dollars, with an average annual growth rate of 7.23 % from 10.38 billion US dollars in 2000. Historical legacy made some European countries, as well as the United States, long-standing international investors in Africa. Nowadays, emerging economies such as China and India are rapidly expanding their multinational businesses in Africa (see Table A.1 in the Appendix). Since the establishment of the Forum on China-Africa Cooperation (FOCAC) in 2000 and the Belt and Road Initiative (BRI), the scale of China's investment in Africa demonstrates a steady growth trend. By 2021, China has surpassed all developing countries and was among the top-5 international investors in Africa. As per data released by the Ministry of Commerce of the People's Republic of China (MOFCOM), China's stock of investment in Africa in 2022 topped 40.90 billion US dollars, with an average annual growth rate of 21.03 % from 2005. However, national security issues in Africa (Matthias & Carsten, 2007; Mihalache-O'Keef, 2018), coupled with global economy uncertainty, pose substantial risk to Chinese investors.

Civil conflicts have replaced international conflicts as the major form of organized violence since the Second World War (Cederman

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& Vogt, 2017; Mason, 2003), and remain a serious security concern in Africa in the 21st century (Mihalache-O'Keef, 2018).[1] Meanwhile, some African countries are experiencing "electoral chaos" since the 1990s, in spite of the fact that most of these countries have adopted multiparty democratic systems. Notwithstanding, presidential, parliamentary, and local elections are taking place every few years, partisan disputes and ethnic contradictions were superimposed on economic and social stability, resulting in political instability in Africa (Yao, 2022). According to Uppsala Conflict Data Program (UCDP), civil conflicts in Africa were sporadic between 2000 and 2020, but became more frequent and deadly after the "Arab Spring" in North Africa in 2010 (Fig. 1). For instance, 3437 civil conflicts broke out in Africa in 2020, resulting in 21,675 casualties. Moreover, intensified civil conflicts usually come with other crises and growing security tensions. For example, in the Sahel region of West Africa, Jihadist organisations expanded by exploiting democratic tensions, creating security crises that in turn continue to trigger political crises and exacerbate humanitarian crises. In July 2023, militants killed 24 villagers in northern Nigeria, further fuelling concerns about the ongoing security challenges in West African countries.[2]

Obviously, political risk is an important factor affecting FDI, from the location choice of green-field investment (Matthias & Carsten, 2007), to cross-border capital outflows (Deseatnicov & Akiba, 2016). Meanwhile, host country's institutional environment (Abdel-Latif, 2019), military expenditure (Kechagia & Metaxas, 2019), and institutional differences between FDI source and host countries (Gonchar & Greve, 2022) can have a risk-mitigation effect and play modulating roles. However, political risk is a macro-level risk with rich connotations. As per the International Country Risk Guide (ICRG) by the Political Risk Services (PRS) Group, political risk measurement includes 12 indicators, including regime stability, external and internal wars. In practice, it is usually difficult to define the characteristics of various sub-political risk and to isolate their impact on economic activities.

Frequent outbreak of civil conflicts in Africa creates significant uncertainty for international investors. Notwithstanding, closer bilateral political relations, as an institutional arrangement between FDI source and host countries, can effectively reduce the uncertainty in foreign economic and trade cooperation (Shapiro et al., 2017). This study extends the existing literature on civil conflict and FDI in three ways. First, it relaxes the assumption that all forms of civil conflicts are homogeneous in the effects on FDI. We estimate the effects of three forms of civil conflicts, namely state-based armed conflict, non-state conflict and one-sided violence. Second, it considers the modulating role of bilateral political relation in the relationship between civil conflict and FDI. Nowadays, bilateral political relation is a focal point in international relations, for its role in effectively reducing uncertainty in international economic and trade cooperation (Shapiro et al., 2017). As global rivalry between nations (blocks) in Africa intensifies, it is essential to examine the modulating role of bilateral political relation in the relationship between civil conflict and FDI. Third, we construct a unique data set of country-specific FDI flow that contains 17 international investors and 54 host African countries, which enables pairwise comparison of the differentiated impact of civil conflicts on investment in Africa for emerging FDI source countries like China on one hand and longstanding investors like European countries or the U.S. on the other.

The study results show significant FDI-deterring effects of civil conflict and one-sided violence, with the former more pronounced in low-income and sub-Saharan African host countries and to Chinese and British investors. And closer bilateral political relations can alleviate the detrimental effects of civil conflicts, especially one-sided violence, on FDI. The results bear further policy implications with respect to promote equal access to potential markets by investors from both developed and emerging economies. Especially in the case of China, whose political and economic ties reach a pinnacle in recent years. Our results provide empirical support to Chinese government's initiative to maintain closer political and economic relations with African countries through programs like Forum on China Africa Cooperation (FOCAC) and the Belt and Road Initiative (BRI). The paper proceeds as follows. Section 2 reviews the relevant literature. Section 3 proposes the theoretical hypotheses. Section 4 introduces the research design. Section 5 reports empirical results. Section 6 discusses and concludes.

2. Literature review

2.1. FDI factors in Africa

The ownership-location-internalisation (OLI) paradigm proposed by Dunning (1988, 1995) provides a comprehensive framework to identify relevant factors influencing FDI. Following studies typically fall into one of the two streams. The first stream takes an African perspective. Ajide and Lanre Ibrahim (2022) investigated the determinants of FDI in 53 African economies between 1984 and 2018 using the Bayesian Model Averaging (BMA) technique. They found that unlike previous studies, gross fixed capital formation, trade openness, exchange rate, secondary school education, democratic regime type, and mobile subscriptions were significant influencers of FDI inflows the continent.

And as political instability rises in African countries, accommodating institutions, especially reliable legal systems, are a prerequisite to attract FDI in Africa (Amendolagine et al., 2013). Kimiagari et al. (2023) reckoned that African countries' institutions played a crucial role in shaping investor decision-making, and political instability, whereas a lack of structured investment policies increased the cost of doing business for investors, thus reducing FDI inflows. Subregional and individual country studies showed that the factors that determined FDI inflow mainly cover strategic assets (Okafor et al., 2015), human capital (Cleeve et al., 2015), political economy

[1] Civil conflict refers to an incident where armed force is used by an organized group against another organized group or civilians, resulting in at least one direct death at a specific location and date (Sundberg & Melander, 2013).

[2] As another example, the perennial armed conflict between the Somali government and Al-Shabaab in East Africa, and the bombing in Somalia on 14 October 2017 that killed 587 people, were described as the deadliest terrorist attack in the country's history.

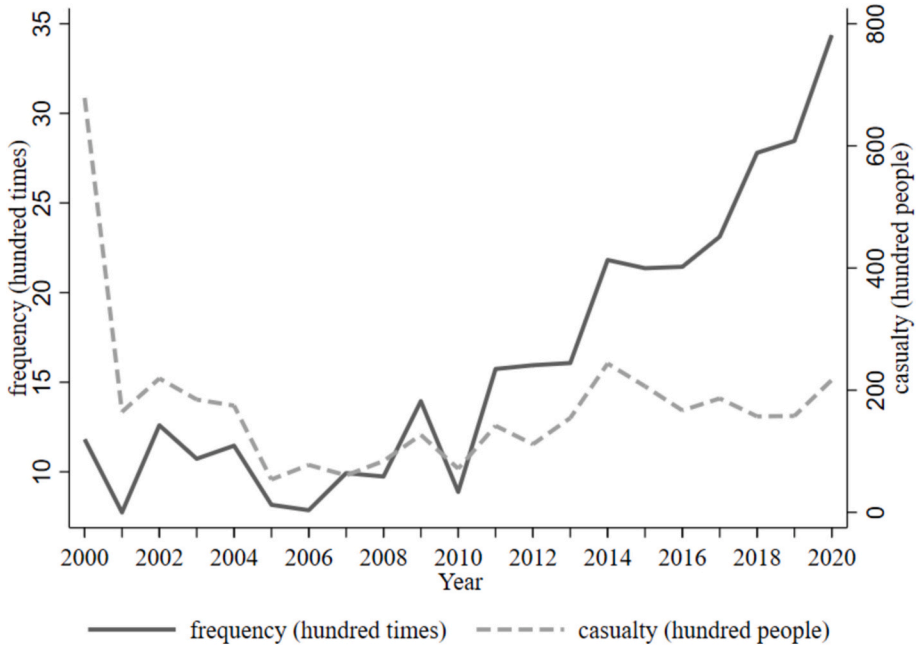

Fig. 1. Frequency and casualty of civil conflicts in Africa, 2000–2020.
(Source: Authors' calculation, based on UCDP GED data.)

factors, and specific factors such as resources and factors (Bartels et al., 2014), and technological capabilities (Soussane & Mansouri, 2022).

In addition, Cham (2016) examined the relationship between monetary integration, FDI and trade in the West African Monetary Zone (WAMZ) using annual time series for the period 1980–2013. The study found that monetary integration contributes to FDI inflows into the region. Kinuthia and Murshed (2015) compared FDI determinants in Kenya and Malaysia and concluded that economic growth was the main driver of FDI in Kenya, among wages, exchange rate and level of democracy in the long run. They also found that limited trade openness, infrastructural development, weak governance, low level of financial development and unstable inflation limited FDI inflow.

With the significant increase of FDI from emerging markets (Zhang, 2021), an increasing number of studies explored emerging

Table 1
Summary of reviewed articles about FDI factors in Africa.

Article	Country /Region	Factor(s)
Gu (2009)	Africa	market opportunities, competition within Chinese domestic market, the presence of a strong entrepreneurial spirit
Kaplinsky and Morris (2009)	Sub-Sahara Africa	natural resources
Amendolagine et al. (2013)	Sub-Sahara Africa	good institutions (especially reliable legal system)
Bartels et al. (2014)	Sub-Sahara Africa	political economy factors
Okafor et al. (2015)	Sub-Sahara Africa	strategic assets
Cleeve et al. (2015)	Sub-Sahara Africa	human capital
Kinuthia and Murshed (2015)	Kenya	economic growth, wages, exchange rate and level of democracy, limited trade openness, infrastructural development, weak governance, level of financial development, unstable inflation
Cham (2016)	West African Monetary Zone	monetary integration
Akhtaruzzaman et al. (2017)	Africa	Confucius Institute
Mourao (2018)	Africa	economic motivations, political and institutional particularities
Koku and Abu Farha (2020)	Sub-Sahara Africa	natural resources and market size
Ajide and Lanre Ibrahim (2022)	Africa	gross fixed capital formation, trade openness, exchange rate, secondary school education, democratic regime type, mobile subscriptions per 100 people
Soussane & Mansouri, 2022	Sub-Sahara Africa	technological capabilities
Kimiagari et al. (2023)	Africa	Institutions, political instability, structured investment policies

economies investing in Africa, mostly Chinese investment. For example, Gu (2009) found that the main factors driving Chinese private investment were African market opportunities, competition within Chinese domestic market, and the presence of a strong entrepreneurial spirit. Kaplinsky and Morris (2009) focused on sub-Sahara African (SSA) countries' engagement with large state-owned Chinese firms investing in the region's resource and infrastructure sectors. Their study concluded that SSA countries should take advantage of the opportunities available to them by adopting a similarly integrated and focused response to Chinese (and other large) investors who sought the region's natural resources. Akhtaruzzaman et al. (2017) argued that the Confucius Institute was among the influencing factors for Chinese direct investment in Africa. Mourao (2018) concluded that in spite of economic motivations, Chinese investors were also attracted to the political and institutional particularities of each African country.

Furthermore, Koku and Abu Farha (2020) compared Gulf Cooperation Council (GCC) states' investments in SSA with Chinese outward foreign direct investment (OFDI). Their analysis revealed that the GCC countries appeared to be driven by food security and religious influence, while Chinese companies tended to enter the countries with rich natural resources and large market size (See Table 1).

2.2. Political risk and FDI

Political risk is the risk of the host sovereign government unexpectedly changing the "rules of the game" for business operations (Butler & Joaquin, 1998). Since political stability is a key element for multinational corporations to ensure sustainable developments in host countries (Abdel-Latif, 2019), more recent studies on the impact of political instability or risk on FDI. Matthias and Carsten (2007) used the International Country Risk Guide (ICRG) database to explore the relationship between political risk, institutions and FDI in host countries. Their study found that changes in government policies and political institutions affected investment behaviour of multinational corporations. Abdel-Latif (2019) applied a panel VAR model to a sample of 146 countries from 1989 to 2015 and found that FDI was sensitive to political instability. And Gonchar and Greve (2022) used the multinational firm-level data for Russia between 2000 and 2016 and applied a Cox proportional risk model to show that multinational corporations were particularly sensitive to Russian law, order, and social conditions and the military presence.

This is especially the case in emerging economies where inadequate laws and regulations, political corruption, and even terrorism expose multinational corporations to greater political risks and potentially higher risk penalty. Therefore, increasing literature focuses on the impact of political risks on FDI in developing countries. Li et al. (2017) examined the impact of civil war on FDI flowing to different sectors of developing countries, which showed that civil war had no significant impact on foreign direct investment in the primary industry of developing countries, but significantly suppressed FDI in the secondary and tertiary industries. Kechagia and Metaxas (2019) used FDI flows data in developing countries between 1970 and 2016 and found that terrorism significantly detered FDI. Abdel-Latif (2019) used the differences-in-differences (DID) estimator and revealed that the Arab Spring led to a decline in FDI inflows to the MENA region. Using a panel data for 15 Middle East and North African (MENA) countries from 2001 to 2008, Dimitrova et al. (2022) found terrorism created a high degree of uncertainty for multinational corporations and deterred foreign investment, while hybrid political regimes, namely anocracies, reinforced the negative impact of terrorism on FDI. Cazals and Leon (2023) used the survey data of approximately 21,500 firms in 33 African countries between 2004 and 2020 and found the perception of political instability was stronger among the firms seeking foreign markets in the countries with non-democratic institutions or a high risk of conflict. Bussy and Zheng (2023) found that rising geopolitical risk and geopolitical uncertainty discouraged FDI, which was more pronounced in R&D-intensive industries, and effective governance in the host countries could reduce geopolitical risk.

In summary, the conventional factors affecting FDI inflow such as market size and resource abundancy are well studies. Recent literature shifts focus to risks, especially institutional or political instability. In the post-pandemic era when civil conflicts have become the primary forms of organized political violence in Africa, investigating how civil conflicts affect FDI deserves further research. In addition, most studies use FDI stock or flow data published by UNCTAD. Although the data set can be used to calculate the investment flow received or retained by the host country in a certain year, it does not identify investment sources and amount that enable pairwise comparison.

3. Theoretical analysis and hypotheses

3.1. Civil conflict and FDI

Civil conflicts in host countries inevitably exacerbate investment risks and worsen business environment for multinational corporations. In the short term, the occurrence of civil conflicts has a direct impact on the security of the property of multinational corporations in host countries as well as the safety of corporate employees. A sharp rise in the frequency, duration and casualty of civil conflicts in recent years discouraged many multinational corporations from investing in Africa.

Both the transaction cost theory and the internalisation theory predict that frequent outbreaks of civil conflicts in host countries will prompt multinational corporations to reduce investment or even withdraw from the host country's market in the long run. Specifically, in conflict-prone host countries, it is essential for investors to spend more on security to assess and/or prevent the risk of civil conflicts as well as protecting corporate property and the personal safety of employees.

At the same time, the transmission of business information may become slow and distorted, greatly increasing the transaction and operating costs of multinational corporations' OFDI and even reducing the propensity to invest. Moreover, civil conflict is a type of terrorism, which deteriorates the host country's business environment and may eliminate the normal returns of enterprises. On the one hand, the economy of the host country may thus be hard hit, resulting in shrinking production and weak consumer demand. On the

other hand, civil conflicts tend to trigger persistent social panic, and increasing uncertainty may disrupt the normal social order in the host country. As a result, when the costs exceed the benefits for an investor, it may choose to divest or relocate to a third country, with a consequent reduction in its investment in the current host country. Therefore, we propose.

Hypothesis 1. African civil conflict deters FDI.

3.2. Three specific civil conflict and FDI

The Georeferenced Event Dataset (GED) is widely used in civil conflict research (Crost & Felter, 2020; Elfversson & Höglund, 2021). The GED classifies civil conflicts into three types, based on the occurrence of the conflict and the subjects involved, including state-based armed conflict, non-state conflict and one-sided violence (Table A.2). Thus, the impact of different types of civil conflicts on FDI is inherently different. We relax the assumption that all forms of civil conflicts are homogenous in the effects on FDI and separate the effects of state-based armed conflict (political risk), non-state conflict (social conflict) and one-sided violence (business-targeting terrorism) in the African context.

The parties in state-based armed conflict mainly dispute over political issues such as national sovereignty and territory, resulting in political instability. In general, rising political risk leads to cross-border capital flight in two ways. First, state-based armed conflict directly affects the host country's institutions and infrastructures, increasing (a) uncertainty of multinational corporations' investment environment, such as the security of corporate property (Matthias & Carsten, 2007), and (b) multinational corporations' operation costs (consequently reducing profits and/or returns) (Dimitrova et al., 2022). Second, state-based armed conflict generally lasts for a longer period, which is not conducive to sustainable development of the host country's economy in the long run. Consequently, state-based armed conflict not only reduces the host country's attractiveness of FDI, but also exacerbates the existing cross-border capital flight (Dimitrova et al., 2022).

Indeed, multinational corporations have different perception and levels of tolerance towards political risk. And the probability of exit depends on whether the political risk exceeds its acceptable level. Multinational corporations from the "Global North" are more tolerant of political risk in developed countries than in developing countries (Deseatnicov & Akiba, 2016), especially when the general level of stability in the host country meets their needs (Peng & Beamish, 2008). Zhu et al. (2019) demonstrated only in countries with high overall political risk index (above the sample mean), government instability had a significant impact on FDI exit. Yasuda and Kotabe (2021) also argued that multinational corporations had specific reference points for political risk level perception that determine multinational corporations' behaviour in the event of increasing political risk. Therefore, we propose:

Hypothesis 2a. state-based armed conflict has a limited impact on FDI.

Non-state conflicts are mostly characterised by struggles over natural resources (e.g., oil, land, water, forests) between ethnic groups and tribes within a state. According to the "greed-grievance-looting" mechanism of conflict, if large-scale exploitation of natural resources does not compensate community in a reasonable amount, alternatively in the case of a social group, when natural resources are distributed unequally or their needs are not effectively met, it can lead to social discontent, division and even further ethnic or social conflict (Chang et al., 2015; Garfinkel & Skaperdas, 2000).

Africa is the second largest continent in the world with rich natural resources. Africa's explorable natural resources are increasing and the continent becomes one of the world's natural resource centres (Africa Natural Resources Centre, 2019). However, natural resources contribute to ever-increasing social conflicts in Africa (Alao, 2007). Sini et al. (2021) showed theoretically that natural resource abundancy and conflict occurrence in Africa exhibit a U-shaped relationship, i.e., countries with fewer or more natural resources were prone to more conflicts. But the empirical results were not inconclusive to support this. Instead, researchers found a positive relationship between these. Dunning (1997) reckoned that natural resources were important locational factors for FDI, and that resource-seeking is a major motivation for multinational corporations. This evidence leads to.

Hypothesis 2b. non-state conflict is a major disincentive to resource-seeking FDI.

One-sided violence and business-targeting terrorism typically targets civilians. Referring to Dimitrova et al. (2022), we summarise the mechanism of one-sided violence on FDI as follows:

One-sided violence exacerbates uncertainty of multinational corporations' operations for targeting company's employees, operations, offices and other company assets. Typical examples including damaging or seizing facilities, kidnapping or murdering employees, destroying company databases, thereby discouraging investment. In the short run, multinational corporations experience higher costs, or dwindled productivity. In the long run, the cost of ensuring normal operations may increase dramatically. Meanwhile, resource commitment to corporate social responsibility (CSR) increases, so do operating costs. In addition, one-sided violence poses serious security risks to employees, and unsafe working environment can lead to a significant increase in employee turnover, coupled with the difficulty of recruiting new employees to fill those vacancies in the short run, which traumatizes daily operation.

From the government's perspective, continued outbreak of one-sided violence increases government funding for security and defence, including counter-terrorism. This leads to an increase in the government's budget deficit, crowding out economically and socially meaningful investments. Restricted public investment and/or increasing cost of doing business may discourage FDI. Therefore, we propose:

Hypothesis 2c. one-sided violence has a greater and more immediate impact on FDI than state-based armed conflict and non-state conflict do.

3.3. Modulating effects of bilateral political relations

Political factors are important elements to promote bilateral relations. Further, political relationship is a specific active institutional arrangement between countries and nations. For strategic considerations such as maintaining national security, strengthening economic and trade cooperation, and expanding international influence, a country forms political affinity relationships with other countries. Formal political relations come in the form of alliances, treaties and agreements, while informal relations are characterised by the degree of friendship and trust between leaders and are marked by path dependence. At present, bilateral political relation, as an important factor in guaranteeing the development of the country's international economic and trade, plays an important role in FDI activities.

Friendly bilateral political relations reduce generic risks of the host country by creating institutional links to overcome the host country's institutional deficiencies. Harmonious and close political relations can mitigate investment risks and create incentives for outward investment (Duanmu, 2014).[3] Yang et al. (2016) argued that the long-term formal institutional arrangements created under friendly bilateral political relations (such as high-level mutual visits) were conducive to the creation and improvement of various investment rules in both countries and promoted the development of outward investment. As an informal institutional arrangement, the friendship city exchange significantly improved the transparency of information and the degree of matching in bilateral investment, increasing OFDI flows. Strategic formal institutional arrangement (e.g., the establishment of formal diplomatic relations between the two countries) can provide critical institutional arrangements for outward investment. Friendly bilateral political relations can reduce risk in institutional environment of the host country.

The modulating effect of bilateral political relations on one-sided violence is more direct than state-based armed conflict and non-state conflict. One-sided violence mainly concerns economic and security issues, which have a more direct impact on FDI. In comparison, state-based armed conflict and non-state conflict are internal to host countries. Friendly bilateral political relations not only create a stable investment environment in host countries and protection of company personnel, but also stop potential expropriation, or relax stringent investment control or market access restriction. For example, Shapiro et al. (2017) found that strong intergovernmental relations between China and some developing countries limited the host government's direct or indirect expropriation behaviours, effectively reducing the political risks faced by Chinese OFDI. Based on the above evidence, we propose:

Hypothesis 3. Friendly bilateral political relations mitigate the negative effect of civil conflicts on FDI inflows to African countries, particularly one-sided violence.

4. Research design

We estimate the impact of civil conflicts in host African countries on FDI from China, 15 European countries,[4] and the United States from 2013 to 2019. The host countries include 54 African countries (Table A.3).

4.1. Dependent variable

FDI stock, instead of the flow value, is chosen as the dependent variable for three reasons. First, FDI stock is more responsive to firms' long-term sustained production inputs (Kahouli & Maktouf, 2015; Stein & Daude, 2007). Second, the stock variable is more accurate than the flow variable, which comes with many missing values. Third, Bureau of Economic Analysis of the United State only publishes data on the U.S. OFDI stock, which is widely used in relevant studies (Boubacar, 2016). All FDI data are converted to current United States dollars. We further process the data by linearly interpolating missing values, as in Bussmann (2010) and Mihalache-O'Keef (2018), deleting observations with negative values (Wei, 2000), and adding 1 to the stock values for all observations before log transformation (Eichengreen & Irwin, 1995).

4.2. Independent variables

The independent variable of interest is African civil conflict, from the Georeferenced Event Dataset (GED). The data set is suitable this study when compared to the internal conflict data from the UCDP Armed Conflict Dataset (Manotas-Hidalgo et al., 2021).[5] We follow Crost and Felter (2020) and define civil conflict as a dichotomous variable, which takes the value of 1 if the conflict resulted in at least 1 death in year t, and 0 otherwise. To investigate the heterogeneous effects of civil conflicts, we also define another three dichotomous variables for state-based armed conflict, non-state conflict and one-sided violence, in the same approach.

[3] An example is the Forum on China-Africa Cooperation (FOCAC) established in 2000.

[4] These are top 15 European countries in terms of investment stock in Africa, based on 2019 Eurostat data.

[5] The UCDP Armed Conflict Dataset defines internal conflict as a conflict leading to direct combatant deaths of 25 or more people or 1000 direct combatant deaths in the COW database. This greatly reduces the number of observations for the core explanatory variables, and in a sample of more than 260,000 observations, this becomes a particularly rare event, potentially resulting in measurement error and estimation bias (King & Zeng, 2001).

4.3. Modulating variable

The modulating variable is bilateral political relation, which is derived from the voting of the United Nations General Assembly. Its universality, strategically importance, and stability reflect political and diplomatic activities and reflect bilateral political relationship between two countries (Malis, 2021). The voting decisions (support/opposition/abstention) by a country in major affairs often reflects the country's political stance. Typically, two countries with similar decision are consistent in their political stance and preference. Following Bailey et al. (2017), we measure bilateral political relations using the ideal point distance of political preference between countries, calculated with the data extracted from the United Nations General Assembly Voting Database. Specifically, the absolute value of the difference between the ideal points is used to represent the distance of international political preferences between the two countries. Smaller values represent closer bilateral political relations, and larger values represent more distant bilateral political relations. In order to better portray bilateral political relations, we further reverse the sign of the value of the ideal point difference with a larger value means closer bilateral political relations.

4.4. Control variables

We also control the factors typically included in FDI gravity models to avoid omitted variable bias, including: (a) market size (natural log of GDP, Log GDP; natural log of total population, Log Population),[6] (b) abundance of natural resources, measured by the proportion of natural resource rent to GDP,[7] (c) inflation rate, measured using the GDP deflator, (d) investment openness (FDI openness), measured by the proportion of FDI stock to GDP,[8] (e) bilateral trade volume (natural log of trade, Log Trade), calculated as the total import and export volume between the investing country and the host country,[9] (f) institutional environment of the host country, measured by regulatory quality and political stability and non-violence/terrorism,[10] (g) bilateral investment Treaties (BITs), for which dummy that equals 1 if source country has signed investment treaties with host country,[11] (h) colonial relations, measured by whether there is a colonial event (1, and 0 otherwise) between the two countries after 1945,[12] (i) level of financial market development (financial development), measured by the amount of domestic credits provided to the private sector by banks divided by GDP.[13]

The above data is sourced from the Global Financial Development (GFD), World Development Indicators (WDI), Worldwide Governance Indicators (WGI), and UNCTAD databases of the World Bank.

4.5. Methodology

In this paper, we construct an unbalanced panel dataset and use three-dimensional fixed-effect regression models to test our hypotheses. It is worth mentioning that compared to random effects models, the fixed-effect model solves the omitted variable problems to a certain extent, suitable for our study. On top of the conventional two-way fixed effects, we further control for the fixed effects of source country to reduce some country-specific traits on our results. The statistical model of the panel regressions are as follows:

$$lnFDI_{i,j,t} = \alpha_1 + \beta_1 Conflict_{j,t-1} + \gamma Control_{i,j,t-1} + \varphi_i + \omega_j + \xi_{t-1} + \epsilon_{i,j,t} \quad (1)$$

$$lnFDI_{i,j,t} = \alpha_2 + \beta_2 Conflict_{j,t-1} \times Relations_{i,j,t-1} + \sigma_2 Conflict_{j,t} + \delta_2 Relations_{i,j,t-1} + \gamma Control_{i,j,t-1} + \varphi_i + \omega_j + \xi_{t-1} + \epsilon_{i,j,t} \quad (2)$$

In both equations, $FDI_{i,j,t}$ indicates the FDI stock from the source country i to the destination African country j in year t. $Conflict_{j,t-1}$ is civil conflict occurred in the host country j in year t. $Control_{i,j,t-1}$ includes all control variables that are defined in Section 4.4. In Eq. (2), $Conflict_{j,t-1} \times Relations_{i,j,t-1}$ is the interaction term between civil conflicts occurred in the host country j in year $t-1$, and bilateral

[6] Using the host country's GDP and total population as proxy variables for market size. Economic scale and population size to a certain extent reflect market size and are among important factors affecting corporate decision-making. In general, the larger the market size, the greater the development potential, and the greater the possibility of enterprises investing in it externally.

[7] Africa is rich in natural resources, and the motivation to seek resources is seen as one of the important factors affecting enterprises' direct investment in Africa.

[8] The higher the degree of investment openness of a country, the easier it is to attract FDI.

[9] Prior trade is beneficial for enterprises to invest in the host country since doing trade business is helpful for them to know the markets in advance.

[10] The higher the regulatory quality and the more stable the political situation, the host country can provide investors with a more transparent and secure investment environment, reducing information asymmetry.

[11] Bilateral Investment Treaty is a specialized agreement between contracting countries to promote investment, which may provide special protection for promoting enterprises to invest in countries with less favourable environments.

[12] The African continent has 54 countries, which have been influenced by colonialism. African countries generally have profound economic and cultural connections and significant cooperation with former colonial powers such as United Kingdom, France, the Netherlands, and Portugal, as well as the United States. At the end of World War II, there were only three independent countries on the political map of Africa, they were Liberia, Ethiopia, and Egypt. The remaining areas, which accounted for over 92 % of Africa's total area, were still under the rule of colonizers such as Britain and France at that time.

[13] The higher the level of development of financial markets, the easier it is for enterprises to obtain financial support in the host country.

political relations between source country i and host country j in the same year. φ_i , ω_j are source and host country fixed effects.[14] These are used to control for factors that do not vary over time in the investor and host countries, and include both observable and unobservable factors, such as whether the host country and investor country are seafront or landlocked.

ξ_{t-1} is year fixed effect, which controls to not only the role of annual macro shocks, but also the long-term trend in the FDI stock. $\varepsilon_{ijt}$is random error term. We lag the independent and control variables by one year (Dimitrova et al., 2022) for two reasons. First, investors typically make investment decisions based on previous civil conflicts and relevant economic policies. Second, it helps to eliminate the possibility of reversed causality in our models. The descriptive statistics of variables are shown in Table 3.

5. Results

5.1. Baseline estimates

Our results in Column (1), (2) and (6) in Table 4 show that the coefficients of civil conflicts are negative and statistically significant at the 1 % level. These results show that an increase in the magnitude in civil conflicts in Africa in a year is indeed associated with a decline in foreign direct investment to Africa in the following year. Thus, Hypotheses 1 is supported by our empirical results. The results in other columns show the heterogeneous effects on FDI. The effects of one-sided violence are negative and significant with the p-values of less than 1 %. The coefficients of state-based armed conflict and non-state conflict are both negative, but not significantly different from zero. We did not find evidence that state-based armed and non-state conflicts have any effect on FDI. We reckon that civil conflicts, which pose unpredictable political risks, directly affect the interests of investment enterprises. Therefore, for emerging economies like China, as well as developed countries such as European countries and United States of America, once the risks brought by civil conflicts exceed the expected returns, investment enterprises will suspend investment or even withdraw in some cases.

Furthermore, we test the modulating effect of bilateral political relations. Column (1) and (2) in Table 5 displays the model specification without/with controlled variables. In Column (3) to (5), we test its roles in the effects of state-based armed conflict, non-state conflict and one-sided violence on FDI, respectively. In Column (1) and (2), the coefficients of the modulating effect of bilateral political relations are positive and significant with the p-values of less than 5 %. The coefficients of the civil conflict variable remain negative and statistically significant, similar to those in Column (5). We also note that the coefficient of the modulating effect of bilateral political relations is positive and significant with a p-value below 10 %, while the coefficient of the non-state conflict is negative but not statistically significantly different from zero.

To sum up, we find that under the influence of colonial relations, a shorter cultural distance between Europe/U.S. and African countries contributes to closer bilateral political relations. In African conflict zones, African governments are more inclined to protect the investors' rights and interests of those countries. This may also be one of the reasons why European countries and United States of America are still major investors in Africa today. However, it should also be noted that since the convening of the FOCAC in 2000, China continuously strengthens comprehensive strategic economic and trade partnership with African countries. And since 2013, several African countries actively participate in the Belt and Road Initiative. At the same time, to protect the interests of Chinese investors in Africa, the signing of bilateral investment treaties between China and African countries reach a pinnacle.

5.2. Extensions

To further check the heterogeneous effects, we classify African countries into low-income countries, lower-middle-income countries, upper-middle-income countries, per 2020 World Bank Country Income Classification Standard. Civil conflicts are more probable in countries with lower income levels. As per data published in the GED database, from 2013 to 2019, 34 African countries experienced political violence, among which 19 are low-income countries. At the same time, North Africa is geographically proximate to Europe and has relatively strong economic performance in the continent. Sub-Sahara African (SSA) countries lag behind in terms of economic development and have a more complex social structure and cultural traditions, subject to greater civil conflicts (Table A.4). Table A.6 presents the results by income and region of host countries. Column (1) and (5) represent the coefficients of conflict is negative and significant with a p-value below 5 %, which suggests that civil conflicts significantly depress FDI in low-income African countries or SSA countries.

Second, we select the top five countries (i.e., Netherlands, United Kingdom, France, China, United States of America) in terms of FDI stock in Africa in 2020 so as to further differentiate between the differential impacts of African civil conflicts on different investors. Table A.7 contains the empirical results. Results in Column (2) and Model (5) show that African civil conflicts significantly dampen investment from the United Kingdom and China.

The differences are attributable to investment motivations in Africa. From 2013 to 2019, the mining and quarrying sector, which is the United Kingdom's largest investment sector in Africa, has seen a decline in the share of United Kingdom investment, from 56.38 % in 2013 to 49.36 % in 2017. In contrast, the share of service industries has risen, such as financial and insurance activities, from 32.07 % in 2013 to 35.44 % in 2017.[15] China's investment in Africa in the same period was mainly distributed in long-term projects in the construction, mining and manufacturing industries, with the cumulative share of the three industries reaching 68 % in 2019

[14] We also include pair-wise fixed effects for each source-host countries pair, as a robustness check.
[15] Due to the data limit, the sector data of the United Kingdom' s OFDI in Africa updated until 2017.

Table 2
Variables and data sources.

Variable	Description	Data Source
Dependent variable		
Log FDI	The natural log of 15 European countries OFDI stock in Africa	Eurostat
	The natural log of the US OFDI stock in Africa	BEA
	The natural log of the Chinese OFDI stock in Africa	MOFCOM
Independent variables		
Conflict	A dummy that equals 1 if civil conflicts occurred in the host country during the year	UCDP GED
Stated-based armed conflict	A dummy that equals 1 if stated-based armed conflict occurred in the host country during the year	UCDP GED
Non-state conflict	A dummy that equals 1 if non-state conflict occurred in the host country during the year	UCDP GED
One-sided violence	A dummy that equals 1 if one-sided violence occurred in the host country during the year	UCDP GED
Modulating variables		
Bilateral political relations	absolute value of the ideal point difference by −1; high values indicate closer bilateral political relations	UN General Assembly Voting Database
Control variables		
Log GDP	The natural log of the GDP in current US$	WDI
Log Population	The natural log of the population	WDI
Inflation rate	GDP deflator (annual %)	WDI
FDI openness	The ratio of FDI net inflows over GDP	WDI
Log Trade	The natural log of source country's exports to the host countries plus source country's imports from the host countries	UN COMTRADE
Natural resources	Total natural resources rents over GDP	WDI
Regulatory quality	Regulatory quality; ranging from approximately −2.5 to 2.5	WGI
Political situation	Political stability and absence of violence / terrorism; ranging from approximately −2.5 to 2.5	WGI
Bilateral investment bits	A dummy that equals 1 if source country has signed the investment bits with host country	UNCTAD BIT
Colonial relations	A dummy that equals 1 if source country has the colonial relations with host country after 1945	CEPII
Financial development	Private credit by deposit money banks and other financial institutions to GDP.	GFD

Table 3
Descriptive statistics.

Variable	Observations	Mean	Standard deviation	Minimum	Maximum
Log FDI	5021	2.755	2.812	0	10.94
Conflict	6426	0.429	0.495	0	1
Stated-based armed conflict	6426	0.336	0.472	0	1
Non-state conflict	6426	0.233	0.423	0	1
One-sided violence	6426	0.362	0.481	0	1
Log GDP	6239	9.558	1.556	5.706	13.21
Log Population	6307	16.01	1.598	11.41	19.12
Inflation rate	6205	6.717	24.81	−26.70	440.8
FDI openness	6239	4.092	6.257	−11.20	62.91
Log Trade	6062	3.919	2.463	0	11.09
Natural resources	6120	9.708	9.088	0.00100	53.02
Regulatory quality	6426	−0.750	0.634	−2.347	1.127
Political situation	6426	−0.668	0.865	−2.759	1.111
Bilateral investment bits	6426	0.396	0.489	0	1
Colonial relations	6426	0.0530	0.225	0	1
Bilateral political relations	6426	−1.635	0.661	−4.572	0
Financial development	5882	31.62	76.13	1.026	986.1

(Table A.5). Our results show that short-term investments to the service industry are more sensitive to African civil conflicts, while long-term investments to the mining, construction and manufacturing sectors are less sensitive to conflicts in Africa.

As a robustness check, we run additional estimations by changing the independent variable to the frequency of civil conflicts, the number of civilian casualties[16] and the duration of civil conflicts for each country per year. We take the logarithm of each variable. Table A.8 contains the empirical results. Column (1) to (3) show consistent estimates to our baseline results, providing additional support to our baseline finding: African civil conflict significantly deters FDI.

[16] We use the best estimates provided by the UCDP databases (Mary & Mishra, 2020).

Table 4
Effects of conflicts on the FDI in African countries, 2013–2019.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Conflict	−0.1360***	−0.1489***				−0.1229**			
	(0.050)	(0.052)				(0.048)			
State-based armed conflict			−0.0739				−0.0805		
			(0.058)				(0.054)		
Non-state conflict				−0.0928				−0.0664	
				(0.061)				(0.057)	
One-sided violence					−0.1471***				−0.1283***
					(0.048)				(0.043)
Control variables		√	√	√	√	√	√	√	√
Year fixed effect	√	√	√	√	√	√	√	√	√
Source country fixed effect	√	√	√	√	√				
Host country fixed effect	√	√	√	√	√				
Source country * Host country fixed effect						√	√	√	√
Observations	4322	3647	3647	3647	3647	3613	3613	3613	3613
R-squared	0.697	0.749	0.749	0.749	0.749	0.965	0.965	0.965	0.965

Note: The table contain our baseline results. Dependent variable is the FDI stock from the source country to the destination African country in a year. Conflict is civil conflict occurred in the host country in the previous year, which take 1 if civil conflicts resulting in at least 1 death occurred in the host country during the year. Other conflict-related variables are coded in a similar approach. Control variables are those presented and discussed in Table 2. Robust standard errors clustered at the country-pair level and presented in parentheses. Significance level: *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Table 5
The modulating role of bilateral political relations.

	(1)	(2)	(3)	(4)	(5)
Conflict	−0.1146**	−0.1330**			
	(0.054)	(0.055)			
Conflict* Bilateral political relations	0.3391**	0.2667*			
	(0.158)	(0.152)			
State-based armed conflict			−0.0786		
			(0.060)		
State-based armed conflict * Bilateral political relations			0.2590		
			(0.169)		
Non-state conflict				−0.1029	
				(0.063)	
Non-state conflict * Bilateral political relations				0.3235*	
				(0.195)	
One-sided violence					−0.1132**
					(0.053)
One-sided violence* Bilateral political relations					0.3368**
					(0.143)
Bilateral political relations	−0.2016	−0.0822	−0.0714	−0.0200	−0.0862
	(0.135)	(0.147)	(0.148)	(0.133)	(0.140)
Control variables		√	√	√	√
Source country fixed effect	√	√	√	√	√
Host country fixed effect	√	√	√	√	√
Year fixed effect	√	√	√	√	√
Observations	4322	3647	3647	3647	3647
R-squared	0.698	0.750	0.750	0.750	0.751

Note: The table contain our baseline results. Dependent variable is the FDI stock from the source country to the destination African country in a year. Conflict is civil conflict occurred in the host country in the previous year, which take 1 if civil conflicts resulting in at least 1 death occurred in the host country during the year. Other conflict-related variables are coded in a similar approach. Bilateral political relations is a continuous variable indicate the closeness of political relations between countries. Control variables are those presented and discussed in Table 2. Robust standard errors clustered at the country-pair level and presented in parentheses. Significance level: *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

6. Conclusion

This article explores the impact of civil conflicts on FDI in the context of Africa and considers the modulating role of bilateral political relations. The results bear further policy implications on how China should take actions when African civil conflict happens to ensure Chinese multinational corporations' interests and security, as well as Africa's sustainable development and prosperity. We show that African civil conflict, especially one-sided violence, deters FDI, and friendly bilateral political relations between source and host countries can mitigate this negative effect to a certain extent. The impact of civil conflicts on different investment countries varies slightly due to differences in investment motivations, with negative impact for Chinese OFDI. This results further indicates that China

shall maintain favourable bilateral political relations with African countries to protect the interest of Chinese investors in Africa.

The world is undergoing profound changes unseen in a century. Africa's strategic position in the international community increases dramatically for its abundant resources and demographic dividend. China is the world's largest developing country, and Africa has the highest concentration of developing countries. Formal institutional arrangements such as the Forum on China Africa Cooperation (FOCAC) and the Belt and Road Initiative, contribute to China-Africa political, social and economic bonds. Building a shared future between China and Africa in the new era continues to deepen and solidify, which benefits both peoples. Since 2009, China has been the largest trading partner in Africa for 15 consecutive years, the fifth largest source of investment in Africa, and the largest among developing countries. It is also the second largest market for China's foreign contracting projects and the region with the most concentrated foreign aid. The report "Dragon and Lion Dance" released by the McKinsey Global Research Institute in the United States indicates that no country, whether in western countries such as the United States, the United Kingdom, France, or emerging countries such as India, Brazil, and Russia, has the depth and breadth of economic exchanges with Africa like China does.

The study comes with several limitations. Our empirical results do not support the hypothesis concerning the motivation of FDI. The 54 African FDI data from Eurostat, BEA and MOFCOM are country-specific data, which prevent us to distinguish the investment industries and motivations. Besides, the data collected cover the period between 2013 and 2019 for the relative comprehensiveness. Future studies that use firm-level FDI data over a longer duration are recommended.

Notwithstanding, our study findings come with some policy/managerial implications: (1) understanding bilateral political relations with African host country is a critical and integrated part of assessing the risk of African civil conflicts; (2) Chinese government should fully and accurately assess the political and social risks of host African country and strengthen information sharing with enterprises wishing to invest in Africa. This helps achieve early warning and prevention in advance, reducing the uncertainty of investment. (3) China shall commit to implementing the "nine projects" of China-Africa cooperation, maintaining favourable bilateral political relations to safeguard civilian investment.

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Appendix A. Appendix

Table 1
Africa FDI stock top 10 investors, 2018–2021.

Year	FDI stock (Billion US dollars)	Top 10 investors (Billion US dollars, %)
2018	880	Netherlands (79, 8.97)、France (53, 6.02)、United Kingdom (49, 5.57)、United States of America (48, 5.45)、China (46, 5.23)、South Africa (35, 3.98)、Italy (29, 3.29)、Hong Kong, China (21, 2.39)、Singapore (20, 2.27)、Germany (14, 1.59)
2019	932	Netherlands (67, 7.19)、United Kingdom (66, 7.08)、France (65, 6.97)、China (44, 4.72)、United States of America (43, 4.61)、Mauritius (37, 3.97)、South Africa (33, 3.54)、Italy (31, 3.32)、Singapore (20, 2.15)、Switzerland (15, 1.61)
2020	965	United Kingdom (65, 6.73)、France (60, 6.22)、Netherlands (49, 5.08)、United States of America (48, 4.97)、China (43, 4.46)、Italy (32, 3.32)、South Africa (29, 3.00)、Singapore (21, 2.18)、Switzerland (17, 1.76)、India (15, 1.55)
2021	1031	United Kingdom (60, 5.82)、France (54, 5.24)、Netherlands (54, 5.24)、United States of America (45, 4.36)、China (44, 4.27)、South Africa (32, 3.10)、Italy (29, 2.89)、Singapore (24, 2.33)、Germany (15, 1.45)、India (14, 1.36)

Data source: The author calculated based on the *World Investment Report*.

Table 2
The comparison among State-based armed conflict, Non-state conflict and One-sided violence.

Indicator	Armed force	Organized actor (Side A)			Organized actor (Side B)	Death
		Government	Organized group			
			[1] Formally organized group	[2] Informally organized group		
State-based armed conflict	√	√			**[1] a government [2] a non-government group**	**≥ 25**
Non-State conflict	√		√	√	**[1] another similar formally group [2] another similar organized group**	**≥ 25**
One-sided violence	√	√	√	√	**[1] civilians**	**≥ 25**

Note: (1) SAC is a contested incompatibility that concerns government and/or territory where the use of armed force between two parties, of which at least one is the government of a state, results in at least 25 battle-related deaths in a calendar year; (2) NSC is the use of armed force between two organized armed groups, neither of which is the government of a state, which results in at least 25 battle-related deaths in a year; (3) OSV is the use of armed force by the government of a state or by a formally organized group against civilians which results in at least 25 deaths.

Table 3
Countries in the baseline estimation sample.

Category	Country
Source country (17)	Belgium, Switzerland, China, Cyprus, Germany, Denmark, Spain, France, United Kingdom, Italy, Luxembourg, Netherlands, Norway, Portugal, Sweden, Turkey, United States of America
Host country (54)	Algeria, Angola, Benin, Botswana, Burkina Faso, Burundi, Cameroon, Cape Verde, Central African Republic, Chad, Comoros, Congo, Côte d'Ivoire, Democratic Republic of the Congo, Djibouti, Egypt, Equatorial Guinea, Eritrea, Ethiopia, Gabon, Gambia, Ghana, Guinea, Guinea-Bissau, Kenya, Lesotho, Liberia, Libya, Madagascar, Malawi, Mali, Mauritania, Mauritius, Morocco, Mozambique, Namibia, Niger, Nigeria, Rwanda, Sao Tome and Principal, Senegal, Seychelles, Sierra Leone, Somalia, South Africa, South Sudan, Sudan, Swaziland, Tanzania, Togo, Tunisia, Uganda, Zambia, Zimbabwe

Table 4
The total frequency, death and duration of civil conflicts occurred in African countries from 2013 to 2019.

Country	Region	Income Level	Frequency (times)	Ratio (%)	Death (people)	Ratio (%)	Duration (days)	Ratio (%)
Nigeria	West	Lower middle income	3331	20.81	35,907	28.21	7059	9.48
Somalia	East	Low income	2702	16.88	12,399	9.74	4143	5.56
Democratic Republic of the Congo	Central	Low income	1975	12.34	18,234	14.32	17,865	23.98
Central African Republic	Central	Low income	1187	7.42	11,027	8.66	9087	12.20
Sudan	North	Low income	1167	7.29	9800	7.70	6552	8.80
Libya	North	Upper middle income	861	5.38	8986	7.06	3932	5.28
Cameroon	Central	Lower middle income	848	5.30	5087	4.00	1977	2.65
Mali	West	Low income	781	4.88	4724	3.71	1743	2.34
South Sudan	East	Low income	731	4.57	9863	7.75	7911	10.62
Ethiopia	East	Low income	469	2.93	2479	1.95	5639	7.57
Kenya	East	Lower middle income	450	2.81	1709	1.34	2223	2.98
Burkina Faso	West	Low income	316	1.97	1521	1.19	582	0.78
Burundi	East	Low income	279	1.74	652	0.51	1303	1.75
Mozambique	East	Low income	235	1.47	915	0.72	427	0.57
Algeria	North	Lower middle income	234	1.46	659	0.52	1212	1.63
Niger	West	Low income	178	1.11	1729	1.36	852	1.14
Chad	Central	Low income	80	0.50	951	0.75	188	0.25
Angola	Central	Lower middle income	68	0.42	105	0.08	1252	1.68
Rwanda	East	Low income	42	0.26	71	0.06	186	0.25
Tunisia	North	Lower middle income	12	0.07	147	0.12	12	0.02
Congo	Central	Lower middle income	10	0.06	71	0.06	78	0.10
Zimbabwe	East	Lower middle income	10	0.06	12	0.01	12	0.02
Uganda	East	Low income	8	0.05	41	0.03	97	0.13
Guinea	West	Low income	6	0.04	103	0.08	12	0.02
Senegal	West	Lower middle income	5	0.03	9	0.01	5	0.01
South Africa	South	Upper middle income	5	0.03	4	0.00	74	0.10
Côte d'Ivoire	West	Lower middle income	4	0.02	53	0.04	5	0.01
Madagascar	East	Low income	4	0.02	4	0.00	49	0.07
Tanzania	East	Lower middle income	3	0.02	8	0.01	3	0.00
Djibouti	East	Lower middle income	2	0.01	7	0.01	5	0.01
Benin	West	Lower middle income	1	0.01	1	0.00	1	0.00
Eritrea	East	Low income	1	0.01	25	0.02	2	0.00
Liberia	West	Low income	1	0.01	1	0.00	1	0.00
Togo	West	Low income	1	0.01	1	0.00	1	0.00
Total			16,007	100	127,305	100	74,490	100.00

Source: Calculated based on UCDP GED Database.

Table 5
The ratio of main sectors of Top 5 investors' FDI stock in Africa (%), 2013–2019.

Sector	2013	2014	2015	2016	2017	2018	2019
Netherlands							
Mining and quarrying	50.69	43.35	21.15	28.78	32.10	47.24	36.27
Wholesale and retail trade; repair of motor vehicles and motorcycles	0.69	0.38	24.94	12.77	13.82	3.90	10.32
Transportation and storage	0.26	0.86	0.65	0.99	1.16	0.79	9.27
Information and communication	19.39	23.69	15.85	12.46	6.96	7.63	9.09
Total	71.02	68.28	62.58	55.01	54.04	59.55	64.94

(*continued on next page*)

Table 5 (*continued*)

Sector	2013	2014	2015	2016	2017	2018	2019
United Kingdom							
Mining and quarrying	56.38	54.45	53.61	52.67	49.63	/	/
Financial and insurance activities	32.07	34.33	32.59	34.88	35.44	/	/
Manufacturing	7.10	7.63	9.09	9.61	7.13	/	/
Information and communication	0.68	0.67	0.84	0.70	2.01	/	/
Wholesale and retail trade; repair of motor vehicles and motorcycles	0.45	0.52	1.37	/	1.60	/	/
Total	96.68	97.61	97.50	97.86	95.82	/	/
France							
Mining and quarrying	37.47	36.89	43.40	47.32	41.77	49.42	41.06
Financial and insurance activities	17.02	17.73	14.73	14.64	17.32	15.18	16.91
Manufacturing	7.84	11.60	10.25	10.45	9.59	14.10	11.49
Professional, scientific and technical activities	14.61	6.88	7.16	7.01	7.12	7.82	7.36
Construction	5.33	6.71	6.44	4.05	2.67	5.60	4.68
Total	82.28	79.81	81.97	83.47	78.46	92.12	81.49
China							
Construction	26.10	24.70	27.40	28.30	29.80	32.00	30.60
Mining	26.41	24.51	27.49	26.07	22.58	22.72	24.81
Manufacturing	13.39	13.65	13.34	12.75	13.21	12.94	12.59
Financial services	13.97	16.47	9.85	11.42	14.07	10.99	11.80
Leasing and business services	/	/	/	/	5.34	6.44	5.61
Scientific research and technology services	5.11	4.18	4.21	4.78	/	/	/
Total	84.98	83.51	82.29	83.32	85.00	85.09	85.40
United States of America							
Mining	60.25	61.85	49.78	38.46	35.57	34.54	/
Manufacturing	7.42	7.86	10.58	11.40	10.71	14.07	/
Holding companies(nonbank)	13.99	10.27	13.53	21.14	24.90	20.93	/
Finance (except depository institutions) and insurance	6.41	5.89	6.64	8.79	9.10	9.53	/
Wholesale trade	3.40	3.37	4.28	3.92	4.53	4.80	/
Total	91.48	89.25	84.81	83.71	84.81	83.86	/

Note: All the available data comes from Eurostat, BEA and MOFCOM. The industry classification standard for the Netherlands, United Kingdom, and France is NACE Rev. 2, the industry classification standard in the United States is NAICS, while the industry classification standard in China is GB/T 4754–2017. Due to the data limit, the sector data of the United Kingdom' s OFDI in Africa updated until 2017, United States of America' s OFDI in Africa updated until 2018.

Table 6
Civil conflicts and FDI in Africa: income and region of host countries.

	Income			Region	
	(1) Low income	(2) Lower middle income	(3) Upper middle income	(4) North Africa	(5) SSA
Conflict	−0.1790**	−0.1214	0.2084	−0.1620	−0.1404**
	(0.075)	(0.081)	(0.182)	(0.000)	(0.055)
Control variables	YES	YES	YES	YES	YES
Source country fixed effect	YES	YES	YES	YES	YES
Host country fixed effect	YES	YES	YES	YES	YES
Year fixed effect	YES	YES	YES	YES	YES
Observations	1164	1853	541	505	3142
R-squared	0.647	0.772	0.784	0.778	0.740

Note: *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$. Robust standard errors clustered at the country-pair level in parentheses.

Table 7
Civil conflicts and FDI in Africa: Top 5 investors.

	(1) Netherlands	(2) United Kingdom	(3) France	(4) China	(5) United States of America
Conflict	−0.2248	−0.6013**	0.2265	−0.2057*	−0.0452
	(0.246)	(0.269)	(0.138)	(0.104)	(0.218)
Control variables	YES	YES	YES	YES	YES
Source country fixed effect	YES	YES	YES	YES	YES
Host country fixed effect	YES	YES	YES	YES	YES
Year fixed effect	YES	YES	YES	YES	YES
Observations	239	227	171	267	222
R-squared	0.956	0.958	0.947	0.975	0.983

Note: *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$. Robust standard errors clustered at the country-pair level in parentheses.

Table 8
Civil conflicts and FDI in Africa: Alternative measures of civil conflict.

	(1)	(2)	(3)
Log frequency	−0.0670***		
	(0.022)		
Log deaths		−0.0670***	
		(0.022)	
Log time			−0.0340***
			(0.013)
Control variables	YES	YES	YES
Source country fixed effect	YES	YES	YES
Host country fixed effect	YES	YES	YES
Year fixed effect	YES	YES	YES
Observations	3647	3647	3647
R-squared	0.749	0.749	0.749

Note: *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$. Robust standard errors clustered at the country-pair level in parentheses.

Data availability

The authors do not have permission to share data.

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