

RESEARCH ARTICLE

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Who cares about corruption in Africa? China or the USA?

Vincent Tawiah¹  | Raymond Ayivor²  | Babajide Michael Oyewo³ 

¹DCU Business School, Dublin City University Ireland, Dublin, Ireland

²Communication and Development Studies Department, Ohio University, Athens, Ohio, USA

³Department of Accounting, University of Southampton, Southampton, United Kingdom

Correspondence

Vincent Tawiah, DCU Business School, Dublin City University Ireland, Dublin, Ireland.

Email: vincentkonadu@gmail.com

Raymond Ayivor, Communication and Development Studies Department, Ohio University, Athens, 4570, USA.

Email: ayivorrayment@gmail.com

Abstract

Considering the growing criticism by the USA of the bribery and corruption surrounding China's trade with Africa, this study uses panel data on 48 African countries over 17 years to examine whether the relationship between corruption and China's trade in Africa differs from that of USA–Africa trade relations. Contrary to expectations, we find that the relationship between corruption and trade with Africa is the same for both countries. Africa's trade with China and the USA increases as corruption increases. Our results imply that both countries have a similar trend of trading with African countries, and they might not care about corruption in Africa. Ultimately, both countries engage with Africa for their parochial economic and political interest. The results are robust to an alternative measure of corruption and endogeneity test using a two-stage least-square estimation technique.

KEYWORDS

Africa, China, corruption, export, import, trade, USA

1 | INTRODUCTION

Despite the widespread corruption on the continent, Africa continues to be the fastest-growing market for foreign trade (United Nations Conference on Trade and Development [UNCTAD], 2019). However, the rapid growth of China in the region has generated fierce criticism from the West, especially from the USA. The USA, which is China's major competitor in Africa, claims that China is taking advantage of the high levels of corruption in Africa by engaging in trade with corrupt African countries. These comments of corruption surrounding Chinese business with Africa have come not only from the media or ordinary citizens but top US officials, including Secretaries of State and Senators. For example, in 2012, the then US Secretary of State, Hillary Clinton, made a comment that, unlike Chinese development, which is extractive, the USA will always stand for good

governance rather than finding easier ways for the flow of resources from Africa (French, 2014).

Recently, on his trip to Africa, the current US Secretary of State, Mike Pompeo, also reiterated the notion that China's investment and trade in Africa breed corruption (Aljazeera, 2020). Judd Devermont, the Director of the African Program for Strategic and International Studies, a USA organization, also claims that Chinese firms are more willing to engage in corruption with African governments (Smith, 2019). The USA Senate sub-committee on African Affairs has equally criticized China for corrupt practices in Africa (Senate Hearing 110–649, 2008). These recent comments follow after China overtook the USA in terms of trade with Africa. As seen in Figure 1, since 2008, China has overtaken the USA in terms of the total value of trade in Africa.

Moreover, the gap between the two countries is widening, with China enjoying significant growth while the

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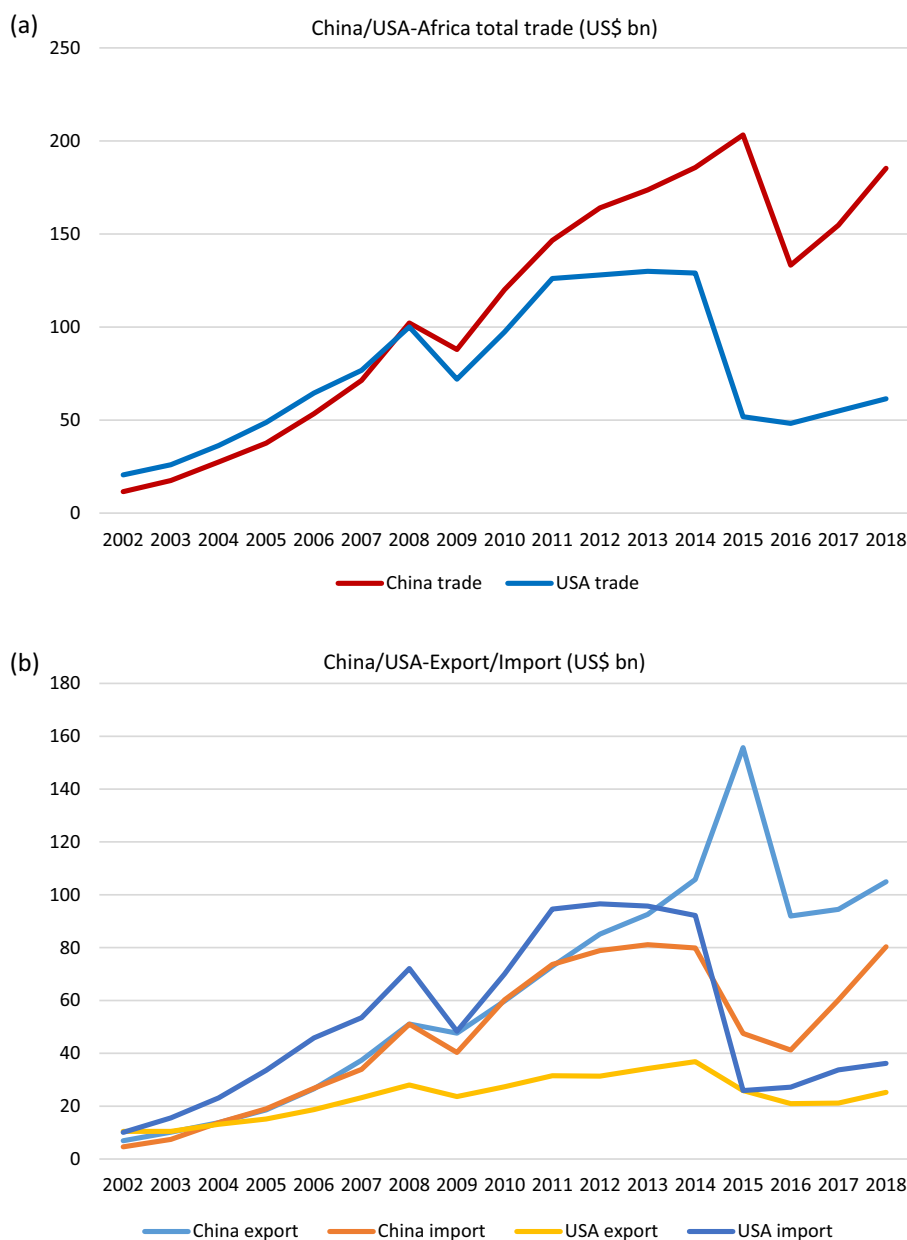


FIGURE 1 A. Trend of China and US trade in Africa. B. Trend of China and USA export to and import from Africa. [Colour figure can be viewed at [wileyonlinelibrary.com](https://onlinelibrary.wiley.com/doi/10.1002/jfe.2785)]

USA is leaning towards a downward trend. The comments on Chinese corruption and bribery practices seem to suggest that the surge in China's trade with Africa, compared with the downward trend of the US, is facilitated by corruption. Therefore, we examine whether the relationship between corruption and China's trade in Africa differs from that of the USA–Africa trade relations.

Luo (2006) suggested two political behavioural strategies for responding to corruption; cooperativeness and assertiveness. Persons with perceived liberal (less) ethical standards, such as China, are more likely to use the cooperativeness strategy by colluding with corrupt government officials and paying bribes. On the other hand, persons with high perceived ethical standards, such as the USA, will use the assertiveness strategy that involves

bargaining for legitimate business or avoiding corrupt governments. While the assertive strategy ensures a good reputation, it reduces the value and volume of transactions due to the cost and time required to bargain with corrupt officials (Shleifer & Vishny, 1993). Given the USA's blistering accusation of China's corrupt practices with African countries, the USA is expected to uphold the ethical principle of not trading with corrupt countries even if the returns outweigh the cost and risk of corruption. Transparency International (2020) also identified the USA as having a lower perceived corruption, a strong Foreign Corrupt Practices Act (FCPA), and higher ethical standards than China.

Furthermore, the political economy of international trade states that most countries use international trade to

achieve national and global interests other than economic benefits (Qiu et al., 2019). For instance, the USA is known for using international trade protectionisms, such as embargos and high tariffs, to change the course of domestic affairs in most countries, including maintaining good governance (Davis and Wei, 2018; United States Department of the Treasury, 2020). Therefore, following the political behavioural strategies for responding to corruption (Luo, 2006) and the political economy theory of international trade (Qiu et al., 2019), we expect the USA to have low-trade transactions as corruption increases as a reflection of their (USA) stance against corruption in Africa.

In line with the above expectations, this study employs System-Generalized Methods of Moment (S-GMM) on panel data of 48 African countries over 17 years to examine how corruption affects China–Africa and USA–Africa trade. We focus on trade because most foreign direct investment (FDI) to Africa from the USA and China is confidential and not published (OECD, 2020). Also, the value of trade is higher than FDI. For example, in 2018, Africa's trade with China and the USA was \$185 billion and \$61 billion, respectively, compared with FDI of \$5.3 billion and \$-2.5 billion for the same year. Further, governments have more control over trade than FDI for achieving national interest. The recent trade war, which includes the ban of goods or high tariffs between China and the USA, demonstrates how countries can use trade to protect national interests compared with foreign direct investment.

Contrary to our expectation, we find that corruption is positively and significantly associated with trade from China and the USA. That is both countries trade with corrupt countries in Africa. Therefore, our empirical analysis does not provide evidence that China's engagement with Africa in terms of corruption significantly differs from how the USA engages with Africa. The ethical argument for not trading with corrupt countries does not appear to be important to the USA as it is perceived by many. Both China and the USA engage with African countries in a similar fashion for the highest economic and political gains. As Sachs (2019) argued, the USA sees China as an existential threat to American interests; hence the blistering accusation against China is just a political effort to maintain American primacy. Our study extends and contributes to the stream of literature on the effect of corruption on trade and development in Africa.

The rest of the paper is structured as follows. The background of the study and theory are presented in the next section. The research method is presented in the third section. In the fourth section, we present the results and discussions. The paper concludes in the fifth section.

2 | BACKGROUND AND THEORY

Classical trade theories such as the comparative advantage theory (Ricardo, 1817, Smith, 1776) and the resource proportion theory (Heckscher and Ohlin theory) have been used to explain why countries engage in international trade (Morgan & Katsikeas, 1997). These theories suggest that countries engage in international trade based on the availability of resources and economic benefits. While these theories explain the international trade pattern to some extent, the recent trade tension between countries has highlighted the political motivations that drive international trade other than economic benefits. Qiu et al. (2019) posited that these recent trade battles reveal the strategic trading policy and political economy theory of international trade. Both strategic trading policy and political economy suggest that countries engage in different trade types and use different agreements to achieve national security and political interests. Thus, not all international trades are meant to result in comparative advantage.

According to the political economy theory of international business, the government is the benevolent servant of the country whose utmost responsibility is to protect the national interest (Qiu et al., 2019). Hence, in this era of globalization and the World Trade Organization, countries are still using trade protectionism to achieve national interests, such as gaining global dominance and upholding what they think is right and fair by insisting on discipline in trading partners (Qiu et al., 2019). The recent use of trade battle between China and the USA provides compelling evidence of how a foreign country uses trade to achieve national and international objectives.

Among the many reasons a country engages in a trade battle is to force other trading partners to adopt fair or best practices. In line with this argument, Davis and Wei (2018) claimed that the USA is using trade battles to force China to change its unequal industrial policies. The USA is known for using tariffs and trade embargos to change the domestic policies of trading partners (Qiu et al., 2019). In addition to the recent USA trade battle that was used to demand fair industrial policies from China, the USA has used high tariffs and trade bans by insisting on good governance in developing countries. For example, the USA has trade bans on Somalia, Sudan, and South Sudan on the grounds of human rights abuses in those countries (United States Department of the Treasury, 2020). Following the political economy theory of international trade, we expect the USA not to trade with corrupt African countries as a sign of upholding the ethical principle against corruption and instilling good governance in African countries. On the other hand, given

their (China) perceived liberal ethical standards and interest in gaining global political power (Jiang et al., 2022), we expect China to be indifferent towards corrupt countries. Arguably, both China and the USA are not directly responsible for the corruption in Africa. However, each country may respond differently to corrupt practices in the region.

Luo (2006) outlined two political behavioural strategies for responding to corrupt practices; cooperativeness and assertiveness. The cooperativeness strategy involves colluding with corrupt officials, whereas the assertiveness strategy involves being ethical and bargaining with corrupt officials for legitimate business. The USA's sentiment on China's trade in Africa reflects the cooperativeness political behaviour in dealing with corrupt countries. The cooperativeness strategies suggest that trading with corrupt countries is collusion for promoting corruption (Goldsmith, 1999; Lambsdorff, 2002; Luo, 2006). China, which appears to be using the cooperativeness strategy, has been accused by the USA of ignoring its ethical responsibility to combat corruption globally. In contrast, the USA has always presented itself as the anti-corruption police avoiding corrupt deals or, at worst, using the assertiveness political behavioural strategy (Luo, 2006). Thus, the USA is more likely to bargain with corrupt countries for legitimate business purposes (Rose-Ackerman, 1999). Luo (2006) suggested that ethical countries use bargains, while less ethical countries use social and political connections to engage in bribe-giving in a highly corrupt environment. However, Shleifer and Vishny (1993) argued that the assertive strategy of bargaining is costly and time-consuming, resulting in a misallocation of resources and a decrease in trade. Therefore, given the high cost of assertive political behaviour, it is imperative for an ethical country to avoid corrupt countries. However, Habib and Zurawicki (2002) noted that countries with perceived high ethical standards, such as the USA, will avoid highly corrupt environments for legitimacy and reputational reasons. Hence, we expect a negative relationship between USA trade and corruption in Africa. Conversely, given that China is known to be liberal on ethical standards and less socially conscious about their foreign operations, we expect a positive relationship between Chinese trade and corruption in Africa.

Gordon (2012) suggested that China's African policies are closely linked to its meteoric rise as a world superpower. Hence, China has undertaken a decidedly different approach to dealing with African countries than that adopted by Western countries, which was mostly based on the regulatory environment of the countries. Similarly, Dreher and Fuchs (2015) also found that compared with Western donors, China does

not pay attention to the institutional structures of the recipient country. For instance, while Western countries have shifted attention to free-market reforms, good governance and human rights, China has focused more on infrastructural development (roads, railroads, and fibre optic), which appears critical for Africa's modernisation (Gordon 2012). Thus, China is likely to trade with countries where it can easily consolidate power. Such an ambition could make corrupt countries more attractive to China. Dreher et al. (2018) also claimed that highly corrupt countries are more likely to attract more Other Official Flow of funds from China than less-corrupt countries. Although Brautigam (2011) claimed that the Chinese relationship with Africa is not so different from the USA, the author also admits that China's finance differs a little from the other options readily open to most African dictators (see Brautigam, 2011, p. 285).

Within the international business-corruption literature, there is evidence that the home country's corruption policy influences the direction of trade and investment with foreign countries (Kwabi et al., 2020). Cuervo-Cazurra (2006) found that the home country's anti-bribery policies deter firms from engaging in corruption in foreign countries. Godinez and Liu (2015) found that less corrupt countries are less likely to do business with highly corrupt countries. These studies, therefore, suggest that the USA having strong anti-corruption policies such as the Foreign Corrupt Practices Act and low perceived corruption, is more likely to trade less with highly corrupt African countries.

Putting all together, the USA has positioned itself as a country with zero tolerance for corruption, even in high-earning foreign operations. At the same time, China is known to be soft on bribery and corruption as far as the economic and political gains outweigh the cost of corruption. Consequently, we expect USA's trade to be decreasing as corruption increases. Therefore, we hypothesise that:

Corruption is negatively related to USA trade but positively associated with China trade.

3 | RESEARCH METHOD

3.1 | Data

Because our study focuses on Africa, we begin our sample selection from all 55 African Union-recognized African countries, and we drop 7 countries due to missing data. The remaining sample size is 48 countries. The sample period covers 17 years (2002–2018).

3.2 | Variable definitions and measurement

3.2.1 | Corruption

Corruption defined as the abuse of authority for self-gain (Bahoo et al., 2020; Werlin, 1994) can be both actual and perceived. However, Transparency International (2020) suggested that, given the absence of any accurate measure of actual corruption, the perception-based measure is the only way to assess corruption. Consistent with prior studies (Boateng et al., 2021; Egger & Winner, 2005; Habib & Zurawicki, 2002; Jain et al., 2017; Kwabi et al., 2020), we use the Corruption Perception Index by Transparency International as a measure of corruption. CPI ranges from 0 to 100, with higher values indicating low perceived corruption. For simplicity and straightforward interpretation, we use the reverse format ranging from 0 to 100 with higher values indicating high perceived corruption in the country.

3.2.2 | Trade/export/import

Trade is the value of export and import transactions of China and the USA with Africa. Data on China and USA trade in Africa was collected from the China Africa Research Initiative at Johns Hopkins University. To control the effect of country size, we rescale the values as a percentage of each respective African country's gross domestic product. However, we present the values measured in millions of US dollars in the descriptive statistics.

3.2.3 | Control variables

We further control for other potential drivers of foreign trade. Following prior studies (Barbopoulos et al., 2014; Egger & Winner, 2005; Habib & Zurawicki, 2002; Jain et al., 2017; Wu, 2006), we use the following variables to control for both economic and political factors that can drive international trade. We use GDP per capita, GDP growth rate and inflation to control purchasing power (Habib & Zurawicki, 2002; Wu, 2006; Balsalobre-Lorente, Ibáñez-Luzón, et al., 2022; Chen et al., 2022). Market size has been found to be a significant determinant of international trade (Wu, 2006); hence, we use population as a proxy for market size. Political factors such as political instability can also influence the value of trade between nations (Barbopoulos et al., 2014; Doğan et al., 2022; S.-J. Wei, 2000). Therefore, we use the political stability score by (Kaufmann & Kraay, 2018) to control for the effect of

political instability (Jahanger, Usman, & Balsalobre-Lorente, 2022; Jahanger, Usman, Murshed, et al., 2022). The score of political stability ranges between -2.5 and 2.5 , with a high value indicating higher stability. We also control for the effect of the global financial crisis on the flow of FDI and trade (Rafei et al., 2022). Global crisis is a binary variable which takes 1 for 2008 and 2009 and 0 for other years. The source of each variable is presented in Table 1.

3.3 | Estimation technique

The fixed or random-effects ordinary least square are the commonly used estimator for panel data, but both techniques do not account for endogeneity. Therefore, their results are likely to suffer from endogeneity, especially if the independent and control variables are not strictly exogenous (Egger & Winner, 2005; Jain et al., 2017). The relationship between corruption and the flow of trade is likely to suffer from the endogeneity issue due to omitted variables and reverse causality (Wooldridge, 2010). Although we included relevant variables as controls, other unknown factors, such as globalization or home country factors, can influence the relationship between corruption and trade. Further, previous year's trade can influence the current year's trade.

Consequently, some prior studies (Egger & Winner, 2005; Jain et al., 2017) have used the instrumental variables technique to mitigate the potential impact of endogeneity on their results. Therefore, this study employs the two-step System Generalized Method of Moment (S-GMM) (Jahanger, Usman, & Balsalobre-Lorente, 2022; Jahanger, Usman, Murshed, et al., 2022; Usman & Balsalobre-Lorente, 2022) to control for unobserved country-specific effects and potential endogeneity issues. The S-GMM estimators are typically applied in one- and two-step variants (Arellano & Bond, 1991; Arellano & Bover, 1995). The one-step estimators use weighting matrices independent of estimated parameters, while the two-step counterpart utilizes the so-called optimal weighting matrices in which the moment conditions are weighted by a consistent covariance matrix estimate. This adjustment makes the two-step estimator asymptotically more efficient than the one-step estimator (Arellano & Bover, 1995).

We specified the equation as follows:

$$\begin{aligned} \text{Trade}_{it} = & \alpha + \beta_1 \text{Corruption}_{it} + \beta_2 \text{lagTrade}_{it} + \beta_3 \text{Inflation}_{it} \\ & + \beta_4 \text{GDPpercapital}_{it} + \beta_5 \text{Population}_{it} \\ & + \beta_6 \text{GDPgrowth}_{it} + \beta_7 \text{Politicalstability}_{it} \\ & + \beta_8 \text{Globalcrisis}_{it} + \varepsilon_{it}. \end{aligned}$$

TABLE 1 Variable description and sources.

Variable	Definition	Source
CPI	Corruption perception index	Transparency International
CCPT	Control of Corruption	World Governance Indicators
China Trade	The sum of China exports to and imports from Africa countries	China Africa Research Initiative
China Export	The value of China exports to African countries	China Africa Research Initiative
China Import	The value of China import from Africa measured	China Africa Research Initiative
USA Trade	The sum of China exports to and imports from Africa countries	China Africa Research Initiative
USA Export	The value of China exports to African countries	China Africa Research Initiative
USA Import	The value of China import from Africa measured	China Africa Research Initiative
Inflation	The level of inflation in the country as measured by the Consumer Price Index in each country	World Development Indicators
GDP per capita	The value of GDP per unit of population in a country	World Development Indicators
Population (Log)	Log of the total population in each African country.	World Development Indicators
GDP growth	The yearly growth in GDP	World Development Indicators
Political Stability	The level of political stability in each African country	World Governance Indicators
Global crisis	An indicator variable that takes the value for years representing the Global Financial Crisis (2008 and 2009) and 0 for other years.	"Authors" construction.
Ethnic fractionalisation	The probability that two randomly selected individuals in a country are not from the same ethnic group	Alesina et al. (2003)

where it represented country and time, respectively, and ε_{it} is the associated error. All other variables are defined in Table 1.

4 | RESULTS AND DISCUSSIONS

4.1 | Descriptive statistics

Figure 1a presents the trend of China and the USA trade for the sample period. The trend of the trade from both countries mimics each other. China surpassed the USA from 2008 onwards, probably due to the global financial crisis, which had a hard hit on the US economy than China. Both countries experienced their highest trade value around 2014 and 2015 and a decline afterwards. In Figure 1b, we observe that China's export to Africa is higher than its import from Africa. In sharp contrast, the USA's export to Africa is lower than its import from Africa. Also, whereas US exports fell in 2014, China experienced a significant increase in exports. However, imports from both countries fell in 2014.

Figure 2 shows the graphical relationship between corruption and trade from China and the USA. The trend is similar for both countries. Trade increases as corruption increase though the slope of China is much steeper than the USA's.

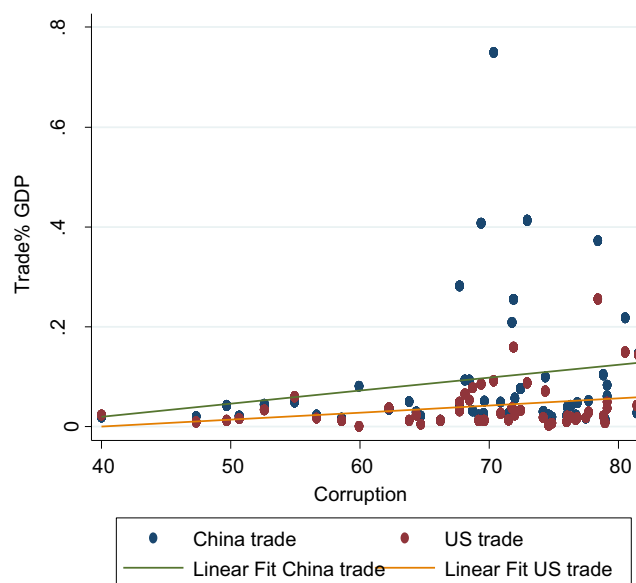


FIGURE 2 Linear fit between corruption and trade. [Colour figure can be viewed at wileyonlinelibrary.com]

Table 2 shows the descriptive statistics of the variables used in the analysis. The average value of corruption (69.201) is above the 50% mid-range, which confirms the widespread corruption in Africa. The average statistics on

TABLE 2 Descriptive statistics.

Variables	Mean	S.D.	Min	Max
1. China Trade (\$million)	2096.061	4729.937	0.695	48752.15
2. China Export (\$million)	1227.928	2885.382	0.687	47834.31
3. China Import (\$million)	868.133	3039.92	0	33561.9
4. USA Trade (\$million)	1460.909	4423.694	0.11	55681.49
5. USA Export (\$million)	474.86	1148.112	0	7552.736
6. USA Import (\$million)	986.049	3695.847	0	48388.43
7. Corruption(TI 0–100)	69.201	15.891	30	97.6
8. Corruption(WGI 1–5)	3.107	0.594	1.283	4.326
9. Inflation (%)	6.596	8.14	−9.798	108.897
10. GDP per capita (\$)	2364	3250.944	111.927	22942.58
11. Population	1.98 E+07	2.88 E+07	82,475	1.96 E+08
12. GDP growth (%)	4.78	7.468	−62.076	123.14
13. Political Stability (2.5–2.5)	−0.499	0.831	−2.699	1.2
14. Global crisis (0,1)	0.118	0.322	0	1

TABLE 3 Correlation matrix.

Variables	1	2	3	4	5	6	7	8	9	10	11	12	13
China Trade	1												
China Export	0.79	1											
China Import	0.81	0.27	1										
USA Trade	0.69	0.59	0.52	1									
USA Export	0.67	0.77	0.31	0.71	1								
USA Import	0.62	0.47	0.52	0.98	0.54	1							
Corruption(TP)	0.02	0.09	0.12	0.05	0.09	0.03	1						
Corruption(WGI)	0.1	0.01	0.17	0.01	0.04	0.01	0.56	1					
Inflation	0.12	0.06	0.13	0.07	0.08	0.06	0.08	0.1	1				
GDP per capita	0.18	0.11	0.18	0.21	0.15	0.21	−0.2	−0.21	−0.11	1			
Population	0.42	0.57	0.11	0.32	0.63	0.19	0.07	0.16	0.19	−0.13	1		
GDP growth	0.01	−0.02	0.02	0.01	−0.02	0.01	0.01	0.03	0.02	0	0.05	1	
Political Stability	−0.09	−0.15	0	−0.05	−0.14	−0.02	−0.38	−0.64	−0.15	0.39	−0.44	0	1
Global crisis	−0.03	−0.04	−0.01	0.01	0.02	0.01	0.05	−0.01	0.12	0.02	−0.01	−0.04	0.04

the dependent variables show that China's total average trade over the period (\$2096.061 million) is almost double that of the USA (\$ 1460.909 million). The high standard deviation of trade, export and import for both China and the USA indicate that both countries engage at a different level of trade with each African country. As evident in the minimum and maximum figures, whereas some countries had more than about \$48,752 million, others had less than \$1 million in trades with either China or the USA.

We employ Person Pairwise correlations to check for potential multi-collinearity (Balsalobre-Lorente, Driha,

et al., 2022; Sinha et al., 2022). The results for the Pearson Pairwise correlation are presented in Table 3. Except for the correlation among the trade variables, none of the coefficients is higher than the threshold of 0.8 for multi-collinearity issues (Field, 2000; Tabachnick & Fidell, 2013).

4.2 | Main results

Table 1 contains the results of the two steps of S-GMM estimation. Results on China's trade are presented in columns 1–3, and that of the USA is presented in

columns 4–6. The results show a positive and significant relationship between corruption and China's trade with Africa. This implies that China has more trade with African countries perceived to be corrupt. Put differently, China's trade in Africa increases as corruption increases. Surprisingly, we find similar results for the USA trade. Thus, the relationship between corruption and trade is not different from that of the China trade. The USA may also be benefiting from the widespread corruption in Africa through the increase in trade.

Arguably, corruption fuels high foreign trade, especially importation, because corruption weakens the administrative checks and balances on international trade regulations, such as customs quality checks. Hence it becomes easy for countries like China and USA to dump goods on the African market or buy raw materials at low cost from Africa. Also, highly corrupt countries are more likely to have weak or no union of local businesses to resist the importation of cheap foreign goods.

A country has more control over imports than exports. Particularly, both China and the USA have more control over the goods entering their countries than the goods going out. For example, when the USA wanted to punish Rwanda for refusing the importation of used clothing, the USA imposed more tariffs on Rwandan goods coming to the USA (BBC News 2018). Economically, it makes sense to control imports than export.

Furthermore, as shown in the descriptive statistics of Table 2, we find that, on average, China's export (\$12227.928 million) to Africa is higher than its import (\$868.133 million) from Africa. Contrarily, USA export (474.86 million) is far lower than its imports (\$986.049 million) from Africa. Therefore, for China or the USA to respond to the corruption levels in Africa, they are more likely to control the imports from African countries than exports to those countries. In line with this argument, we examine whether the relationship between corruption and trade with the two countries differs based on the direction of the trade (import or export).

The results are presented in Table 4. The coefficients of corruption for China in columns 2 and 3 are positive and significant, indicating that China's export to and import from Africa is associated with an increase in corruption. Similarly, results for the USA in columns 5 and 6 also show a positive impact of corruption on both export to and import from Africa. That is, our result of the positive relationship between trade and corruption for both China and the USA is consistent when the trade is split into import and export.

Results on most of the control variables are consistent with standard assumptions. For example, GDP per capita and GDP growth are positive and significant in most cases. Political stability is also positive and significant

indication that both countries trade more with peaceful and stable countries. The global crisis had a significant negative effect on international trade.

The post-estimation test results represented by the PV of Arellano Bond AR (1) and AR (2), as well as the Hansen test, confirm the validity of the model and instruments.

4.3 | Corruption distance from China and the USA

Prior studies on corruption argue that the difference in corruption levels between the home and host countries provides a better explanation between corruption and international business than the absolute corruption measurement (Godinez & Liu, 2015; Habib & Zurawicki, 2002). Habib and Zurawicki (2002) found that foreign direct investment decreases as the corruption distance between home and host country decrease. However, Godinez and Liu (2015) found that positive corruption distance has no significant impact on FDI, but negative distance decreases FDI. As shown in the standard deviation, there is significant variation in the level of corruption across Africa. For example, the average corruption level of Botswana is about 40 compared with the high average of other countries, around 60. More so, the corruption level in China is about twice that of the USA. However, none of the African countries has a lower level of corruption than the USA within the sample period. Hence the distance metaphor (Johanson & Vahlne, 1977, 2016; Shenkar, 2001) may matter in the trade relationship between Africa and China as well as the USA.

We follow Eden and Miller (2004) and Godinez and Liu (2015) to calculate corruption distance as the difference between a sample country's corruption from China (China corruption – sample country corruption) and the USA (USA corruption – sample country corruption).¹ Given prior evidence on corruption distance (Godinez & Liu, 2015; Habib & Zurawicki, 2002), we expect a negative relationship between corruption distance and trade for the USA because of the large negative corruption distance between the USA and African countries. The results are presented in Table 5. The coefficient of *Distance from China* in columns 1 to 3 is positive and significant, suggesting that China's trade increases as the corruption distance increases. Similarly, in columns 4 and 5, the coefficient of *Distance from the USA* is positive and significant, indicating that long corruption distance from the USA increases trade for African countries. That is, the results in Table 5 provide support confirming the main results that the relationship between corruption and trade is not different for China and the USA.

TABLE 4 Main results.

Variables	China			USA		
	(1)	(2)	(3)	(4)	(5)	(6)
	Total Trade	Export	Import	Total Trade	Export	Import
Corruption	0.000611*** (1.57 e-05)	0.000303*** (8.07 e-06)	0.000352*** (7.48 e-06)	0.000366*** (2.21 e-05)	8.73 e-05*** (9.51 e-06)	0.003079*** (0.00173)
Lagged dependent	0.902*** (0.000262)	0.910*** (8.67 e-05)	0.905*** (0.000332)	0.762*** (0.000750)	0.660*** (0.000646)	0.864*** (3.95 e-05)
Inflation	0.000301*** (1.92 e-05)	-2.46 e-05** (1.07 e-05)	0.000345*** (4.51 e-06)	0.000290*** (1.14 e-05)	8.11 e-05*** (1.12 e-05)	9.526*** (0.0190)
GDP per capita	-0.00279*** (0.000224)	-0.00469*** (0.000157)	0.00218*** (8.03 e-05)	0.00226*** (0.000269)	-0.00104*** (0.000116)	240.0*** (1.421)
Population	-0.00359*** (0.000300)	-0.00265*** (0.000197)	-0.000879*** (0.000183)	-0.00153*** (0.000199)	-0.000224 (0.000154)	128.2*** (2.219)
GDP growth	0.000673*** (4.07 e-05)	2.44 e-05** (1.19 e-05)	0.000631*** (3.84 e-06)	0.000630*** (1.79 e-05)	-0.000116*** (1.37 e-05)	35.23*** (0.0153)
Political stability	0.00230*** (0.000479)	0.00120*** (0.000198)	0.00104*** (0.000223)	0.000451 (0.000354)	0.00147*** (0.000158)	28.72*** (0.732)
Global crisis	-0.00346*** (0.000181)	0.000284*** (8.49 e-05)	-0.00488*** (2.22 e-05)	-0.00260*** (0.000146)	-0.00154*** (0.000119)	-76.83*** (0.281)
Intercept	0.0494*** (0.00492)	0.0694*** (0.00238)	-0.0269*** (0.00342)	-0.0131*** (0.00369)	0.0120*** (0.00301)	-421.3*** (54.05)
Arellano – Bond test (AR1)	0.023	0.046	0.008	0.001	0.000	0.038
Arellano – Bond test (AR1)	0.372	0.336	0.714	0.535	0.351	0.430
Hansen test (χ^2)	0.474	0.424	0.393	0.442	0.436	0.595
Observations	721	721	721	705	705	705
Number of id	48	48	48	47	47	47

Note: Standard errors in parentheses.

** $p < 0.05$. *** $p < 0.01$.

TABLE 5 Corruption distance.

Variables	China			USA		
	(1) Total Trade	(2) Export	(3) Import	(4) Total Trade	(5) Export	(6) Import
Distance from China	0.000500*** (1.62 e-05)	0.000106*** (1.13 e-05)	0.000466*** (3.32 e-06)			
Distance from USA				0.000192*** (2.92 e-05)	6.13 e-05*** (1.03 e-05)	0.0038 (0.144)
Lagged dependent	0.901*** (0.000290)	0.909*** (6.21 e-05)	0.897*** (0.000420)	0.768*** (0.000748)	0.660*** (0.000628)	0.864*** (2.31 e-05)
Inflation	0.000317*** (2.13 e-05)	-8.01 e-06 (9.26 e-06)	0.000350*** (4.75 e-06)	0.000285*** (6.35 e-06)	8.29 e-05*** (1.21 e-05)	10.02*** (0.0198)
GDP per capita	-0.00311*** (0.000417)	-0.00507*** (0.000163)	0.00230*** (7.18 e-05)	0.00231*** (0.000286)	-0.00109*** (0.000114)	228.4*** (1.898)
Population	-0.00385*** (0.000337)	-0.00286*** (0.000189)	-0.000963*** (0.000165)	-0.00182*** (0.000247)	-0.000232 (0.000153)	122.2*** (2.090)
GDP growth	0.000687*** (3.82 e-05)	3.99 e-05*** (7.78 e-06)	0.000636*** (3.28 e-06)	0.000636*** (1.58 e-05)	-0.000114*** (1.30 e-05)	35.61*** (0.0144)
Political stability	0.00116** (0.000494)	-0.000375** (0.000155)	0.00191*** (0.000210)	-0.00122*** (0.000478)	0.00130*** (0.000169)	-23.67*** (0.835)
Global crisis	-0.00319*** (0.000307)	0.000762*** (9.38 e-05)	-0.00509*** (2.41 e-05)	-0.00241*** (0.000191)	-0.00155*** (0.000119)	-59.14*** (0.234)
Intercept	0.0948*** (0.00447)	0.0952*** (0.00299)	-0.00405 (0.00297)	0.00697 (0.00461)	0.0158*** (0.00286)	-3682*** (56.01)
Arellano – Bond test (AR1)	0.023	0.036	0.008	0.001	0.003	0.017
Arellano – Bond test (AR1)	0.371	0.335	0.694	0.535	0.351	0.427
Hansen test (χ^2)	0.494	0.408	0.385	0.535	0.429	0.523
Observations	721	721	721	705	705	705
Number of id	48	48	48	47	47	47

Note: Standard errors in parentheses.

*** $p < 0.05$. *** $p < 0.01$.

TABLE 6 Robustness – Alternative measure of corruption.

Variables	China			USA		
	(1)	(2)	(3)	(4)	(5)	(6)
	Total Trade	Export	Import	Total Trade	Export	Import
Corruption	0.00962*** (0.000815)	0.000143 (0.000434)	0.00882*** (0.000170)	0.00849*** (0.000465)	0.00261*** (0.000317)	0.00164*** (0.000293)
Lagged dependent	0.900*** (0.000394)	0.909*** (5.29 e-05)	0.891*** (0.000407)	0.755*** (0.00124)	0.652*** (0.00113)	0.864*** (3.75 e-05)
Inflation	0.000326*** (1.48 e-05)	−5.28 e-06 (1.03 e-05)	0.000354*** (7.85 e-06)	0.000301*** (8.84 e-06)	8.31 e-05*** (9.75 e-06)	9.731*** (0.0575)
GDP per capita	−0.00348*** (0.000305)	−0.00523*** (0.000151)	0.00194*** (9.92 e-05)	0.00191*** (0.000425)	−0.00102*** (0.000146)	235.6*** (1.179)
Population	−0.00400*** (0.000450)	−0.00283*** (0.000224)	−0.000891*** (0.000105)	−0.00152*** (0.000189)	−0.000126 (0.000107)	124.3*** (1.463)
GDP growth	0.000667*** (3.18 e-05)	3.91 e-05*** (7.79 e-06)	0.000628*** (3.20 e-06)	0.000621*** (1.61 e-05)	−0.000116*** (1.29 e-05)	35.36*** (0.0159)
Political stability	0.00113** (0.000449)	−0.00112*** (0.000174)	0.00247*** (0.000165)	0.00141*** (0.000547)	0.00210*** (0.000195)	13.23*** (0.958)
Global crisis	−0.00230*** (0.000128)	0.000992*** (6.46 e-05)	−0.00433*** (2.74 e-05)	−0.00200*** (0.000143)	−0.00140*** (9.64 e-05)	−69.77*** (0.413)
Intercept	0.0721*** (0.00579)	0.0957*** (0.00270)	−0.0269*** (0.00199)	−0.0109** (0.00489)	0.00853*** (0.00261)	−3965*** (37.98)
Arellano – Bond test (AR1)	0.023	0.016	0.008	0.001	0.003	0.028
Arellano – Bond test (AR1)	0.370	0.335	0.738	0.503	0.349	0.429
Hansen test (χ^2)	0.615	0.421	0.379	0.456	0.534	0.548
Observations	721	721	721	705	705	705
Number of id	48	48	48	47	47	47

Note: Standard errors in parentheses.

** $p < 0.05$. *** $p < 0.01$.

TABLE 7 Alternative measure of independent variables.

Variables	China			US		
	(1)	(2)	(3)	(4)	(5)	(6)
	Total Trade	Export	Import	Total Trade	Export	Import
Corruption	4.736*** (0.281)	3.004*** (0.112)	5.448*** (0.327)	7.564*** (0.0710)	1.937*** (0.115)	0.0557 (0.0722)
Lagged dependent	0.835*** (0.000289)	0.977*** (4.99 e-05)	0.637*** (0.000223)	0.881*** (2.61 e-05)	0.864*** (3.99 e-05)	0.943*** (0.000125)
Inflation	22.75*** (0.244)	19.96*** (0.0383)	-2.006*** (0.249)	2.651*** (0.0397)	9.669*** (0.0243)	1.139*** (0.0299)
GDP per capita	545.3*** (9.239)	96.35*** (2.384)	548.1*** (8.608)	44.04*** (2.152)	237.8*** (1.843)	53.65*** (1.123)
Population	340.5*** (4.874)	33.29*** (1.091)	425.6*** (4.908)	28.49*** (0.853)	127.4*** (2.136)	41.67*** (0.580)
GDP growth	43.59*** (0.173)	37.33*** (0.0104)	3.501*** (0.240)	38.52*** (0.0463)	35.33*** (0.0166)	3.017*** (0.0434)
Political stability	-42.59*** (9.403)	49.39*** (1.850)	-215.6*** (3.045)	-294.6*** (0.705)	19.09*** (0.695)	2.684*** (0.857)
Global crisis	-126.4*** (3.255)	-57.67*** (0.242)	-103.7*** (1.899)	-97.21*** (0.364)	-75.41*** (0.381)	-20.06*** (0.183)
Intercept	-9972*** (91.78)	-1683*** (30.79)	-10.371*** (84.03)	-7345 (29.08)	-4108*** (40.92)	-1071*** (17.61)
Arellano – Bond test (AR1)	0.026	0.024	0.027	0.008	0.011	0.007
Arellano – Bond test (AR1)	0.176	0.285	0.328	0.324	0.429	0.275
Hansen's test (χ^2)	0.627	0.498	0.590	0.578	0.592	0.561
Observations	721	721	721	721	705	705
Number of countries	48	48	48	48	47	47

Note: Standard errors in parentheses.

*** $p < 0.01$.

TABLE 8 Endogeneity – two-stage least-square IV.

Variables	CHINA			USA		
	(1) Total Trade	(2) Export	(3) Import	(4) Total Trade	(5) Export	(6) Import
Corruption	0.0209*** (0.00335)	0.0127*** (0.00278)	0.00818*** (0.00110)	0.00676*** (0.00107)	0.00121*** (0.000313)	0.001066* (0.005225)
Inflation	−0.000723 (0.00107)	−0.000875 (0.000892)	0.000152 (0.000352)	0.000598* (0.000348)	2.96 e-05 (0.000102)	9.381 (16.99)
GDP per capita	0.0132 (0.0112)	−0.0147 (0.00931)	0.0279*** (0.00367)	0.0262*** (0.00358)	0.000562 (0.00105)	1618*** (174.9)
Population	−0.00920 (0.00675)	−0.00795 (0.00561)	−0.00125 (0.00221)	−0.00365* (0.00216)	−0.000849 (0.000630)	835.8*** (105.4)
GDP growth	0.000313 (0.00126)	8.67 e-05 (0.00105)	0.000226 (0.000414)	0.000794** (0.000403)	9.39 e-05 (0.000118)	−7.790 (19.70)
Political stability	0.150*** (0.0274)	0.104*** (0.0228)	0.0467*** (0.00898)	0.0328*** (0.00858)	0.00862*** (0.00251)	649.0 (419.0)
Global crisis	−0.0611** (0.0273)	−0.0379* (0.0227)	−0.0232*** (0.00895)	−0.0155* (0.00878)	−0.00310 (0.00256)	−76.02 (428.8)
Intercept	−1.216*** (0.316)	−0.503* (0.262)	−0.713*** (0.103)	−0.566*** (0.0995)	−0.0553* (0.0291)	−32,359*** (4861)
Observations	764	764	764	747	747	747
R-square	0.002	0.007	0.008	0.004	0.003	0.012
Number of id	48	48	48	47	47	47

Note: Standard errors in parentheses.

* $p < 0.1$. ** $p < 0.05$. *** $p < 0.01$.

4.4 | Robustness check – alternative measure of corruption

To mitigate concerns for possible biased results due to the measurement of corruption, we use Kaufmann and Kraay's (2018) Control of Corruption score (CCPT), another widely used measure of corruption, to check the robustness of the results (Barbopoulos et al., 2014; Egger & Winner, 2005; Sharma & Paramati, 2021). CCPT represents the perceptions of the extent to which public power is exercised for private gain, including petty and grand forms of corruption (Kaufmann & Kraay, 2018). CCPT is part of the six governance indicators based on 30 different sources. CCPT ranges from -2.5 to 2.5 , with higher values indicating less corruption in the country. However, we use the reciprocal format, which rescales the index between 0 and 5, with 0 being the lowest level of corruption and 5 the highest level of corruption. The results using the alternative measure of corruption are presented in Table 6. The coefficient of corruption as measured by control of corruption is positive and significant in all the columns, indicating that our main results in Table 4 are robust to an alternative measure of corruption.

Next, to alleviate the concern that the measurement of independent variables may drive our results, we use the original import, export and trade figures as alternative measurements. That is, using the amount of trade in millions of US\$ without deflating it by the GDP of the sample country. We also do this to check the sanity of the coefficients, given that the figures presented in the main results of Table 4 may be hard to interpret because of the number of decimal places. The results presented in Table 7 confirm our main findings that corruption is positive and significant for both China and the USA regarding their trading with African countries.

4.5 | Endogeneity – two-stage least-square Instrumental variable

Although the System GMM estimation technique provides a robust result, it does not fully mitigate the effect of possible reverse causality between the dependent and independent. There is a likelihood of reverse causality running from corruption to international trade. For instance, prior studies such as Gatti (1999), Herzfeld and Weiss (2003), Lalountas et al. (2011), and Treisman (2000) found globalization, including international trade, to have a positive and negative effect on the corruption level of a country. The existence of reverse causality may cause bias and inconsistent results. Therefore, we use two-stage least-square instrumental variable analysis

(2SLS) to obtain more consistent results to mitigate potential endogeneity from reverse causality. Literature shows that the quality of the institutions of a country is an outcome of historical institutional factors such as ethnic fractionalization, religion and legal origin (Acemoglu et al., 2001; Alesina et al., 2003; La Porta et al., 1999, 2008; McCleary & Barro, 2006). Corruption indicates the poor quality of current institutions, which is an upshot of historical institutions. Therefore, we instrument corruption, which is one of the indicators of the institutional quality of a country, by ethnic fractionalization. Ethnic fractionalization, as one of the historical institutional factors, determines the current institutional outcomes because more ethnic fractionalization leads to social and political polarization leading to institutions that aim to maintain power (Alesina et al., 2003; Emenalo et al., 2018; La Porta et al., 1999). Existing studies indicate a significant relationship between ethnic fractionalization and corruption (Donchev & Ujhelyi, 2014; Lederman et al., 2005; Treisman, 2014). However, there is no evidence that China and the USA trade will be influenced by ethnic fractionalization. Hence it is appropriate to use ethnic fractionalization as an instrument.

The results of the 2SLS IV regressions are presented in Table 8. For brevity, we did not present the first-stage regression results. The results for China, in columns 1–3, show that corruption increases China's trade transactions, including export and import with African countries. Similarly, the coefficients of corruption for the USA, as presented in columns 4–6, also indicate a positive and significant association between corruption and trade, including export and import. In sum, the results in Table 6 are not qualitatively different from that of Table 4, suggesting that our results are not sensitive to the endogeneity problem of reverse causality.

5 | CONCLUSION

Given the USA's fierce criticism of China's cooperativeness response to corruption in trade with Africa and the USA's claims as being a highly ethical country with assertiveness response to corruption, one would expect the USA to have low trade with corrupt African countries or at the best avoid trading with corrupt countries. Therefore, in this study, we use data from 48 African countries between 2002 and 2018 to test whether the corruption-trade nexus for China's trade with Africa differs from the US–Africa trade relations. We employ robust estimation techniques, including System – GMM, alternative measure of corruption, and two-stage least-square IV for the empirical analysis. Our results show that the relationship between corruption and foreign trade in Africa is the same for both China and the USA. Both countries have a

similar trend of trading with African countries though China has surpassed the USA in terms of the value of trade since 2008. We find a positive and significant relationship between corruption and trade from both China and the USA. The results imply that both countries trade in high values and volumes with corrupt African countries. Put differently, trade from both countries increase as corruption increases. We, therefore, argue that, although the USA's trade with Africa is less than China, our results do not provide evidence to support that the low trade is due to the USA's ethical principle against corruption rather than other factors such as competition from China might be the reason for the decrease in USA trade.

Our study has several policy implications. First, our findings lead to the conclusion that inadequate empirical evidence may have skewed the perceptions of corruption in China's engagement with Africa. In the end, every foreign trade to Africa, either from China or the USA, goes for the highest returns regardless of the level of corruption in the country. We, therefore, recommend that trade policies should target every foreign trade and not only the Chinese. Similarly, the media should not focus only on corruption in Chinese trade. Second, our findings imply that it is not only Chinese companies that are caught up in corruption scandals in Africa. Some US corporations such as Cobalt International Energy, Halliburton Co. and Kellogg, Brown, and Root have also been accused of corruption (Rubinfeld, 2012). After all, Africa remains the developing continent with the highest returns on foreign trade and investment (UNCTAD, 2019).

Third, our results that corruption is positively associated with an increase in trade with China and the USA do not provide support for high corruption. Obviously, given the low industrialization in Africa, international trade in the continent gives more money and jobs to China and the USA. Also, international trade in a corrupt environment puts money in the pocket of private individuals leading to a loss of export revenue and high prices of imported goods. Therefore, we recommend that African countries eliminate corruption to have a fair and beneficial trade relationship with China and the USA. Fourth, our study implies that Africa's trading partners may not care about corruption in Africa; hence it is the duty of Africa to combat it. The study contributes to emerging areas of new strategies in international trade and the political economy of markets. Our study contributes to the literature on the institutions-trade nexus with a particular focus on corruption, an area that has attracted little attention.

Notwithstanding, our robust analysis, our study is not free from limitations. As with many corruption studies, the corruption measures are based on perceptions collected through surveys. Although these indices have been

used in prior studies, they have been criticized as not reflecting actual corruption. Amid these criticisms, prior studies have found that these indices are close to actual corruption and that the corruption perception indices serve the purpose in the absence of actual corruption indices. Furthermore, our study does not cover all forms of Africa's foreign engagement, such as foreign direct investment, foreign aid and construction. Future studies can look at how China and the USA engage with African countries in long-term partnerships such as foreign direct investment.

DATA AVAILABILITY STATEMENT

Data used for the study are available here. China-Africa Research Institute <http://www.sais-cari.org/data-china-africa-trade>. All other variables can be found at the World Development Indicators at <https://databank.worldbank.org/indicator/NY.GDP.MKTP.KD.ZG/1ff4a498/Popular-Indicators>.

ORCID

Vincent Tawiah  <https://orcid.org/0000-0003-1679-387X>

Raymond Ayivor  <https://orcid.org/0000-0002-8889-4488>

Babajide Michael Oyewo  <https://orcid.org/0000-0002-4499-601X>

ENDNOTE

¹ For simplicity, we use the reverse values where high positive values indicate long distance.

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APPENDIX: LIST OF COUNTRIES

Algeria	Lesotho
Angola	Liberia
Benin	Libya
Botswana	Madagascar
Burkina Faso	Malawi
Burundi	Mali
Cabo Verde	Mauritania
Cameroon	Mauritius
Central African Rep.	Morocco
Chad	Mozambique
Comoros	Namibia
Congo	Niger
Cote d'Ivoire	Nigeria
Dem. Rep. of the Congo	Rwanda
Egypt	Senegal
Equatorial Guinea	Seychelles
Eswatini	Sierra Leone
Ethiopia	South Africa
Gabon	Tanzania
Gambia	Togo
Ghana	Tunisia
Guinea	Uganda
Guinea-Bissau	Zambia
Kenya	Zimbabwe