

Sino-African Trade Relations: The Role of Policy Uncertainties

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Abstract

This study evaluates the potential roles of China's domestic and external policy uncertainties in its trade relations with African countries. We focus on 32 African countries, using data ranging from 2000 to 2021 as informed by data availability. Using a panel ARDL approach, the outcomes indicate that: (i) while China's trade policy uncertainty causes transient trade reductions in bilateral trade (both exports and imports) with Africa, trade increases in the long run, suggesting Africa's resilience to the uncertainty shocks; and (ii) external policy uncertainties and US-China tension index are more likely to improve Africa's trade position in Sino-African trade relations, particularly by increasing China's imports from Africa, thereby contributing to a trade surplus for Africa. We also discuss the policy implications of these findings. Specifically, African countries should diversify their trade partnerships and strengthen domestic productive capacity.

Keywords: Uncertainties; Africa; trade; policy and China

JEL: D81, N47, B17, F13

1. Introduction

The susceptibility of the African economy to global economic imbalance has been conspicuously proven in the existing literature (see Lo, Marcelin, & Bassene, 2023) and linked to Africa's dependence on foreign products and aid (see Dada et al., 2023). However, trade interlinking channels through which global crises resonate in the African economy are rather common knowledge. When an economic crisis emerges in a foreign economy, its spillover effects can be transmitted through trade to other closely connected economies. Even where direct trade linkages are limited, shared dependence through other channels, such as financial assistance, may further strengthen the transmission of external shocks. In this connection, the main idea of this study is to examine the potential spillover effects of China's policy uncertainties on its trade relations with African countries. We proxy these uncertainties through her trade policy uncertainty, economic policy uncertainty and through the US-China tension index. By way of robustness analysis, an index of global economic policy uncertainty is further considered in the evaluation.

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Meanwhile, literature on China-Africa relations is copious and provides noteworthy guidance on the state of the relationship and the determinant factors responsible. For instance, evidence shows that trade relations between Africa and China have been an age-old activity, where China constitutes Africa's largest trading partner in terms of imports and exports, with South Africa, Nigeria, and Egypt topping the list of importers, and Angola, South Africa, and Congo topping the list of exporters (Henri & Regissahui, 2019). Recent data show that the over-twenty-year-old China-Africa trade relationship has seen China become Africa's largest trade partner. Africa now has 20% of her exports going to China and about 16% of her imports coming from China (IMF Data, 2023). The recent slowdown in global economic conditions has equally reshaped the trade pattern of China-Africa trade relations. At present, there are about 70% Chinese private enterprises out of more than 3,000 enterprises across African countries. While this percentage is expected to rise given the current economic situation, it further poses possible ripple effects on the African economy (See Munyati, 2024, in World Economic Forum).

The common focus of existing studies has rather been on analysing the causal effect of the trade relation with Africa's economic growth (see Obobisa et al., 2021) and the possible factors that are responsible for the China-Africa trade relation (see Akowuha et al., 2020). Existing studies on policy uncertainty and international trade have largely focused on broader international settings, with limited attention to China-Africa trade relations. However, given Africa's current and age-old trade relation with China, and given the predominant uncertainty stance across the global economy, an analysis of this nature

is exceptionally worthy of consideration to achieve the following objectives:

- i) to establish both the immediate and long-term effects of China's internal policy uncertainties on Africa's bilateral trade with China;
- ii) to account for the effects of possible interference from global uncertainties that are associated with China in this relationship, such that the policy focus will not only be limited to China's immediate environment;
- iii) to give details on the types of trade compositions that are more susceptible to the differing policy uncertainties; and lastly,
- iv) to estimate the asymmetric effects in terms of differing income groups of African countries so as to give guidance on where to direct more attention.

To the best of our knowledge, these issues have not been jointly examined in the existing literature. In this connection, attending to this specific issue is a necessity, given the identified gap in the literature and the need to better understand the implications of policy uncertainty for China-Africa trade.

In this regard, 32 African countries are considered in this study, with 16 each representing low- and high-income groups. The selection criteria are largely a result of data availability, which is the same reason that dictates the scope of the study, where the period ranges from 2000 to 2021. The data on policy uncertainties are generally text-based data constructed following the methodology of Baker et al. (2014), where the counting of certain words (such as *economy*, *policy*, and *uncertainty*) in popular newspapers is considered for standardization in the index construction. Data on bilateral trade between each of these African countries and China –

for exports, imports, and total trade – are sourced from the World Integrated Trade System (WITS, 2022), which covers more than 100 countries of the world between 1992 and 2021. Given the country composition, the study is analysed in a panel model using the Panel Autoregressive Distributed Lag (PARDL) model via the Pooled Mean Group (PMG) variant. This choice is largely a necessity for the present study as it accounts for both short- and long-run estimation, while it also has the ability to deal with inherent features that may be peculiar to any individual country.

Following this section, the review of literature is done in Section 2, while section 3 deals with **methodology**, and Section 4 with data and preliminary analysis. The results from findings are presented in Section 5, and Section 6 provides the conclusion and policy implications.

2. Literature Review

A. Theoretical Guidance

Several theories have provided a basis on how uncertainty plays out in international trade relations and its possible effect on economic growth (see Tam, 2018; Jia, Huang, Xu & Sun, 2020; Matzner et al., 2023; Chishti, 2024; Yaseen et al., 2025). However, Jia, Huang, Xu & Sun (2020) and Matzner, Meyer, and Oberhofer (2023) provided a comprehensive evaluation of these theories. We do not wish to be repetitive, but rather give a summary of the connection between the two variables: trade and uncertainty. Most of the emphasized theories are expectation theory, investment irreversibility theory, growth theory, and the gravity model.

As a matter of emphasis, the main theme of these theories holds that economic policy uncertainty (EPU) dampens trade flows.

According to investment irreversibility theory, when investment involves substantial sunk costs, higher economic policy uncertainty encourages firms to postpone investment and trade decisions. The uncertainty as a result of this imbalance thus generates low trade flows. The resultant theory here is viewed as the “sunk-cost-based” dynamic model (see Dixit & Pindyck, 1994; Tam, 2018; Jia, Huang, Xu & Sun, 2020). The dampening effect of EPU on trade flows has also been explained via expectation theory. It is believed that rising uncertainty often leads to a re-evaluation of expectations about foreign enterprise risks. Most often, higher domestic uncertainty creates the assumption that foreign enterprises will adjust their business plans, and as a result, domestic firms may postpone export and import decisions because of heightened uncertainty regarding future market conditions (Nguyen, 2012).

A contrary view, however, holds that uncertainty may stimulate investment and trading activities. The emphasis by these theorists (the growth theory) is that where there are many risk-averse firms, a situation of high uncertainty may be seen as an opportunity to raise investment and trade as a way to recover from previous losses. As for the gravity model, the impact of policy uncertainty is believed to manifest through production and cost expenditure. It lowers production volumes and raises production costs (Matzner et al., 2023). Overall, the competing theoretical perspectives suggest that the relationship between policy uncertainty and trade is ambiguous, making the net effect an empirical question.

B. Empirical Review

We offer a very brief review of the literature on related studies. While trade

relations between Africa and China are gaining momentum, the focus of many of the studies in this regard is largely to find out possible factors that are responsible for this relationship. In trying to provide an answer in this aspect, Akowuha et al. (2020) made a selection of African countries and modelled them in a panel analysis to establish the determinant factors of African-China trade cooperation using GMM. The findings from the study largely revealed that the level of economic output, population growth, and resource endowment play a significant role in this cooperation. It was further emphasized that distance and price level could possibly worsen it.

In contrast, the outcome of findings by Obobisa et al. (2021) from Granger causality revealed that China-Africa trade negatively Granger-causes economic output in sub-Saharan African countries. The implication is that Africa may rarely benefit from trade partnership with China via output growth. However, from the same analysis, inward foreign direct investment from China positively causes economic growth in the region. Although informative, the findings may have limited generalizability because the analysis covers only 24 sub-Saharan African countries and relies solely on Granger causality.

Mrdaković and Todorović (2023) have equally evaluated Africa's position in China's Belt and Road Initiative (BRI) and its possible benefits to the African economy. While the study established that 52 African countries have shown interest in the project, the outcome of that step is more visible in strengthening the trade alliance between Africa and China. Specifically, the empirical outcome from the study upheld a strong correlation between their trade flows and China's FDI into the continent through the BRI programme. Even

though this outcome suggests a positive effect on their trade relations as a result of the programme, any significant shift in China's economic or related policy may produce a different outcome. An empirical analysis to detail this possible stance is largely required as an addition to existing studies.

Apart from BRI, an African regional initiative like the African Continental Free Trade Area (AfCFTA), whose main aim is to ensure a single market for African goods, is now seen as also contributing positively to Africa-China cooperation (see Xiaohui, 2023). In an earlier related study, Ya and Pei (2022) had raised a specific issue on possible factors that influence the agricultural trade relation between African countries and China. The study, which was highly detailed in its stance, revealed that both African and Chinese GDP, education level in Africa, and the quality of land and water resources tend to moderate this specific trade relation, while distance and exchange rate pose negative effects on it.

Further evidence on this relationship has been offered using firm-level data analysis to establish the possible role of trade relations between China and Africa in enhancing labour productivity in Ghana (see Hou, Fu, and Mohnen, 2022). The result shows that trade with China is better for Africa than trade with OECD countries, emphasizing that China is always open to provide Africa with necessary imports and at the same time serves as a strong market for African exports. Additionally, Habyarimana (2024) recently engaged in identifying determinant factors for Sino-Africa trade relations. More essentially, the study found the possible role of population density and governance in an augmented gravity model. The main takeaway from the findings is that Africa's connection with Chinese exports predominantly resulted

from her population density, while the recent reduction in Chinese imports from the region is largely attributed to poor governance.

Also, Ren and Sakouba (2024) examined the issue of Chinese currency risk in the trade relationship with eastern African countries. It was noticed that even when China's exchange rate was relatively stable within the scope of the study, the risk still had an impact on the trade balance. However, the overall evidence suggests that trading with China collectively results in more trading gain than operating individually. However, while there have not been any specific studies on the role of policy uncertainty in Sino-African trade relations, the outcomes from those that address the issue at a general level indicate varying impacts of policy uncertainty in any trade relation (see Osnago, Piermartini, & Rocha, 2015; Heise, Pierce, Schaur & Schott, 2017; Tam, 2018; Jia, Huang, Xu & Sun, 2020; Sharma & Paramati, 2021).

For instance, Jia, Huang, Xu, and Sun (2020) used export-trading pair data for 20 countries to establish the possible role of country-level economic policy uncertainty. The findings indicate a negative effect of the EPU index from importing countries on their exports but not with the EPU of exporting countries. The study further underscores the negative contribution from the unemployment rate of importing countries, with no significant effect from the GDP of importing countries. In a commodity-level analysis, Sharma and Paramati (2021) used both the Pooled Mean Group and Cross-sectional ARDL for a panel of several commodities imported to India between 2011 and 2019. The overall outcome indicates that higher Indian EPU leads to more imports in the short run but dampens them in the long run, with primary products being more susceptible.

Further analysis by Borojo, Yushi, and Miao (2021) considered 143 countries to establish the impact of EPU and trade flows across the countries, with more emphasis on income heterogeneity and regional trade agreements. Similar to the outcomes of studies before them, EPU contributes negatively to trade flows, while regional trade agreements tend to moderate the effect. As for income heterogeneity, high-income countries record lower EPU effects than others.

It thus becomes glaring from this foregoing discussion that studies on the roles of policy uncertainty with respect to African countries have been scarcely emphasized. Considering the market potential of African nations and their resource endowment, which many advanced countries importantly require, the need to consider this area is very necessary, particularly regarding China-African trade relations. The outcome could clearly provide a basis for policy implementation and guidance.

3. Methodology

As earlier emphasized, the paper addresses three main objectives. The first objective analyzes the effect of China's trade policy uncertainty in the bilateral trade relations between Africa and China. Additionally, an asymmetric evaluation was conducted for high- and low-income group countries in Africa. In the second objective, rather than trade policy uncertainty, the study considers China's economic policy uncertainty in the full sample estimation, with further analysis by dividing the countries into high- and low-income groups. In the third objective, attention was focused on the interference of global uncertainty policies in the China-Africa trade relations. We proxy these uncertainties using the Global Economic Policy Uncertainty (GEPU) and US-China Tension Index (UCT).

Given the foregoing emphasis, we believe the outcome would reveal noteworthy evidence on the role of policy uncertainties in the China-African trade relationship.

For our empirical model, we analyze each objective through the Panel Autoregressive Distributed Lag (PARDL) approach, which is similar to the approach of Salisu et al. (forthcoming). This approach is preferred among alternative choices as it allows us to estimate both short-run and long-run dynamics. As a dynamic model, it further allows for the lag impact of both dependent and independent variables, thereby accounting for the possible lag effects of these variables. On the choice between its variants, our preferred variant is the Pooled Mean Group (PMG), owing to its inherent feature of accommodating cross-sectional specificities of the slope coefficients, making it less restrictive and better suited to take full advantage of its dynamics.

Model for each of the objectives are as follows:

$$\Delta f_{it} = A_{1i} f_{i,t-1} + \alpha_{1i} + B_{1i} tp_{t-1} + \sum_{j=1}^p a_{1ij} \Delta f_{i,t-j} + \sum_{j=1}^p a_{1ij} \Delta f_{i,t-j} + \sum_{j=1}^q b_{1ij} \Delta tp_{t-j} + \mu_{1i} + u_{1it} \quad (1)$$

In equation (1), f_{it} either stands as export, imports or total trade flows for country i and at t ; tp represents trade policy uncertainty for China. Parameter μ_i is for the country-specific effects while u_{it} stands for the stochastic disturbance term. The different operator is represented by Δ ; long-run impact by $\frac{-B_{1i}}{A_{1i}}$ and the short-run impact by b_{1ij} . An extended version of this model to accommodate the asymmetric impact, given high- and low-income group features of African countries is further considered. The categorization of

countries into high- and low-income groups is based on the volume of GDP and per capita income of each of these countries. Thus, we present the following model to capture this asymmetry:

$$\begin{aligned} \Delta f_{it} = & A_{2i} f_{i,t-1} + \alpha_{2i} + B_{2i}^{HIGH} tp_{i,t-1} * \\ & D_t^{HIGH} + B_{2i}^{LOW} tr_{i,t-1} * (1 - D_t^{HIGH}) + \\ & \sum_{j=1}^p a_{2ij} \Delta f_{i,t-j} + \sum_{j=1}^q b_{2ij}^{HIGH} \Delta f_{i,t-j} * D_t^{HIGH} + \\ & \sum_{j=1}^q b_{2ij}^{LOW} \Delta tr_{i,t-j} * (1 - D_t^{HIGH}) + \mu_{2i} + u_{2it} \quad (2) \end{aligned}$$

For easy reference to the equation given their common parameters, we use associated serial number as indicated by the subscripts 1 and 2 respectively. The use of Dummy variable importantly differentiates Equation 1 from Equation 2. However, D_t^{HIGH} is for high income countries in Africa and $1-D_t^{HIGH}$ is for the low-income group where Dummy variable takes value of 1 for High and zero otherwise. In our estimate each income group is equally represented (16 countries in each group).

We further describe the baseline model for objective 2 where China's economic policy uncertainty variable is used in lieu of trade policy uncertainty as in the case of the previous model. The specifications for full sample and for the asymmetric effect are as follows:

$$\begin{aligned} \Delta f_{it} = & A_{3i} f_{i,t-1} + \alpha_{3i} + B_{3i} epu_{t-1} + \\ & \sum_{j=1}^p a_{3ij} \Delta f_{i,t-j} + \sum_{j=1}^q b_{3ij} \Delta epu_{t-j} + \\ & \mu_{3i} + u_{3it} \quad (3) \end{aligned}$$

$$\begin{aligned}
\Delta f_{it} = & A_{4i} f_{i,t-1} + \alpha_{4i} + B_{4i}^{HIGH} epu_{i,t-1} * \\
& D_t^{HIGH} + B_{4i}^{LOW} epu_{i,t-1} * (1 - D_t^{HIGH}) + \\
& \sum_{j=1}^p a_{4ij} \Delta f_{i,t-j} + \sum_{j=1}^q b_{4ij}^{HIGH} \Delta f_{i,t-j} * D_t^{HIGH} \\
& + \sum_{j=1}^q b_{4ij}^{LOW} \Delta epu_{i,t-j} * (1 - D_t^{HIGH}) \\
& + \mu_{4i} + v_{4it}
\end{aligned} \quad (4)$$

Specifications in equations 3 and 4 are similar to what we have in equations 1 and 2. The only difference is found in the type of uncertainty policy used. In this case, China's economic policy uncertainty is considered and is represented by *epu* with associated parameters for short run and long run estimations. In the last objective, for robustness analysis, we consider external policy uncertainties whose construction involved many advanced countries without the exclusion of China. This allows us to examine whether broader external policy uncertainty exerts additional effects on China–Africa trade

beyond China's domestic policy uncertainty. Two proxies are importantly used in this case: The global economic policy uncertainty (GEPU) [PPP variant] and US-China Tension index (UCT). The respective models are presented in equations 5 and 6 as follows:

$$\begin{aligned}
\Delta f_{it} = & A_{5i} f_{i,t-1} + \alpha_{5i} + B_{5i} gepu_{t-1} + \\
& \sum_{j=1}^p a_{5ij} \Delta f_{i,t-j} + \sum_{j=1}^q b_{5ij} \Delta gepu_{t-j} + \\
& \mu_{5i} + v_{5it}
\end{aligned} \quad (5)$$

$$\begin{aligned}
\Delta f_{it} = & A_{6i} f_{i,t-1} + \alpha_{6i} + B_{6i} uct_{t-1} + \\
& \sum_{j=1}^p a_{6ij} \Delta f_{i,t-j} + \sum_{j=1}^q b_{6ij} \Delta uct_{t-j} + \\
& \mu_{6i} + v_{6it}
\end{aligned} \quad (6)$$

Equations 5 and 6 are similar. While equation 5 is a representation for GEPU, equation 6 is for UCT. Equations 1 to 6 are estimated and the analysis is presented under result section. Note that all variables are logged.

Table 1. Data and Variable Description

S/N	Variable	Measurement	Sources
1.	Total Trade (F)	This is the addition of total imports and exports to and from China measured in dollars.	WITS ¹
2.	Import (M)	This is total goods bought from China into Africa measured in dollars	WITS
3.	Export (X)	This is total goods bought into China from Africa measured in dollars	WITS
4.	Trade Policy Uncertainty (TPU)	Uncertainty surrounding trading activities in China measured in an index	Baker, Bloom and Davies (2012) ²
5.	GDP growth rate (GR)	The rate of growth in GDP during the period considered measure in percentages	WDI ³

¹ World Integrated Trade System: <https://wits.worldbank.org/>

² BBD: <https://www.policyuncertainty.com/index.html>

³ World Development Index (WDI): <https://datatopics.worldbank.org/world-development-indicators/>

S/N	Variable	Measurement	Sources
6.	Economic Policy Uncertainty (EPU)	Uncertainty surrounding economic activities in China measured in an index	Baker, Bloom and Davis (2012)
7.	Global Economic Policy Uncertainty (GEPU)	Uncertainties surrounding global economic activities measured in an index	Davis (2016)
8.	US-China Tension Index (UCT)	Tension surrounding US-China relations measured in an index	John Rogers, Bo Sun, and Tony Sun (2024)

Source: Authors' compilation

4. Data and Preliminary Analysis

This study utilizes data from various sources. Essentially, data on Chinese exports to and imports from African countries are sourced from the World Integrated Trade System (WITS, 2022). This data is annual, and its scope ranges from 1992 to 2021. However, given the availability of other data for the analysis, we only consider those from 2000 to 2021. To arrive at trade volume, we sum both imports (exports from Africa) and exports (imports from Africa), and each of the three variables is logged for easy interpretation of the analysis. WITS, as a data outlet, hosts data on bilateral trade for over 114 countries of the world, with the current scope ending in 2021. As for data on policy uncertainties, we use four measures: China's trade policy uncertainty index (trade index), China's economic policy uncertainty index ([C] EPU index), US-China Tension index (UCT index), and the Global Economic Policy Uncertainty index (GEPU index), which aggregates data from the top 21 countries of the world, including China, and covers around 80% of global economic activities. The construction of these indices follows specific and similar steps, with each referencing Baker et al. (2014) as the guideline in this stance.

Table 2 presents the summary statistics of the variables of concern. On average, China's imports from and exports to the sampled

African countries amount to approximately \$1.8 million, while average total trade exceeds \$3.6 million. The relatively large standard deviations reflect substantial variation in bilateral trade across countries and over time. They are positively skewed and very high-humped. However, the significance of the p-value associated with the Jarque-Bera statistics indicates some form of non-normal distribution, which is expected to be corrected for through the chosen method of analysis. The average value of the trade policy uncertainty index is 151.7, indicating a relatively elevated level of trade policy uncertainty over the sample period. As for the mean values for GEPU and UCT, economic policy uncertainty (average value of 79.6) at the global level is somewhat higher (79.7), suggesting the intensity of this policy uncertainty over presumed local imbalances. Again, the standard deviation values indicate relative deviation, with positive skewness (except UCT, whose value is negative: $v = -1.3620$). Data on the growth rate of GDP for all these economies is found at 4.12, positively skewed (2.171) and very high-humped, as shown by the kurtosis and relatively non-normal distribution. All the observations are 704 data points.

In order to check for the possibility of dependency of one variable on another, we further compute a correlation matrix. The

Table 2. Summary Statistics

Variable	Mean	Median	Std. Dev.	Skewness	Kurtosis	Jarque-Bera	P_Value	Obs
F	3638476	1337214	7440127	4.656	29.033	22423.630	0	704
M	1808980	215512	5346073	5.256	33.907	31260.980	0	704
X	1829496	696323.3	3147336	3.271	15.132	5573.404	0	704
TPU	151.714	85.953	178.400	1.793	5.056	501.173	0	704
GR	4.120	4.359	6.951	2.171	47.071	57525.160	0	704
EPU	41.667	40.874	4.768	0.251	1.587	65.940	0	704
GEPU	79.563	76.798	7.837	0.858	2.214	104.466	0	704
UCT	55.349	55.718	1.156	-1.362	3.614	228.775	0	704

Source: Authors' computation

Table 3. Correlation Matrix

	F	TPU	GR	EPU	GEPU2	UCT	M	X
F	1.000	0.163	-0.043	0.279	0.227	-0.151	0.931	0.783
M	0.931	0.096	-0.037	0.175	0.131	-0.131	1.000	0.501
X	0.783	0.222	-0.039	0.361	0.314	-0.135	0.501	1.000
TPU	0.163	1.000	-0.128	0.702	0.873	0.303	0.096	0.222
GR	-0.043	-0.128	1.000	-0.123	-0.136	-0.032	-0.037	-0.039
EPU	0.279	0.702	-0.123	1.000	0.899	-0.206	0.175	0.361
GEPU	0.227	0.873	-0.136	0.899	1.000	0.149	0.131	0.314
UCT	-0.151	0.303	-0.032	-0.206	0.149	1.000	-0.131	-0.135

Source: Authors' computation

outcome indicates no strong dependency, thereby ruling out the possibility of severe multicollinearity in the data composition. The correlation values among the variables are all relatively below 0.8, with only three exceptions: imports to exports, GEPU to trade, and GEPU to UCT. This further raises no concern, as the affected variables were not analysed within the same model.

As a prerequisite for any dynamic analysis, it is essential to test for unit roots in each variable to determine their order of integration and avoid spurious regression results (Peseran et al., 2001). The ARDL framework is appropriate when the variables are

integrated of order zero, $I(0)$, and order one, $I(1)$, provided that none is integrated of order two, $I(2)$. As shown in Table 4, our variables are a combination of both $I(1)$ and $I(0)$, and more importantly, the dependent variables are $I(1)$. Although the PP test suggests that TPU may be $I(2)$, the remaining panel unit root tests consistently classify the variable as $I(0)$. Following the majority of the evidence, TPU is treated as stationary.

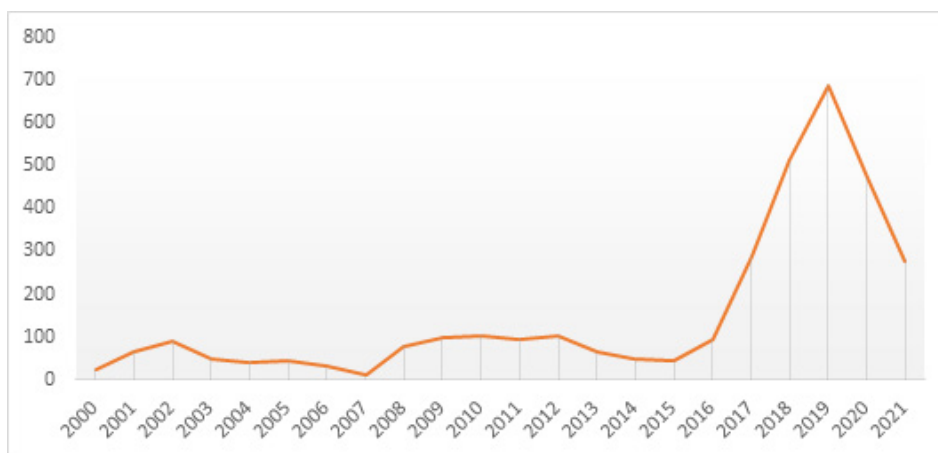
Additionally, we present the trend of common variables for the analysis. These are China's Trade Policy Uncertainty (TPU) index (Figure 1), Economic Policy Uncertainty (EPU) index (Figure 2), and US-China Tension

Table 4. Result of Unit Root Test

Variable	Levin, Lin & Chu t*		Im, Pesaran and Shin W-stat		ADF - Fisher Chi-square		PP - Fisher Chi-square	
	Value	Status	Value	Status	Value	Status	Value	Status
F	-4.279***	I (1)	-8.841***	I (1)	206.667***	I (1)	317.353***	I (1)
M	-8.340***	I (1)	-12.085***	I (1)	267.942***	I (1)	464.505***	I (1)
X	-5.084***	I (1)	-8.382***	I (1)	191.990***	I (1)	297.963***	I (1)
TPU	-10.452***	I (0)	-8.420***	I (0)	181.755***	I (0)	301.675***	I (2)
GR	-4.955***	I (0)	-5.771***	I (0)	143.724***	I (0)	467.749***	I (0)
EPU	-11.940***	I (1)	-7.992***	I (1)	173.458***	I (1)	395.670***	I (1)
GEPU	-1.58902*	I (1)	-4.975***	I (1)	115.614***	I (1)	101.544***	I (1)
UCT	-5.660***	I (0)	-5.468***	I (0)	124.023***	I (0)	205.235***	I (1)

Note: *, **, *** indicate significant level at 1%, 5% and 10% level of significance.

Source: Authors' computation

**Figure 1.** Trend of China TPU index

Source: Authors' construction

(UCT) index (Figure 3). China's TPU remained relatively stable before rising sharply after 2016, with a more pronounced increase during the COVID-19 period. Additionally, China's EPU exhibits an upward trend, growing slowly from 35.5 in 2000 to 49.9 in 2021. A closer look further reveals that the index grows slowly by around 10% in the first decade and by 28% in the latter. This further shows that China's EPU intensifies more after the global crisis,

suggesting broader policy shifts following the crisis and its attendant impacts. As for the China-US tension trend, the post-global crisis lessens the tension, and a subsequent higher trend was prominent in the period afterward. Similarly, while the tension soars in the year after the global pandemic, it began to exhibit a downward trend in the following year, further indicating that tension between the

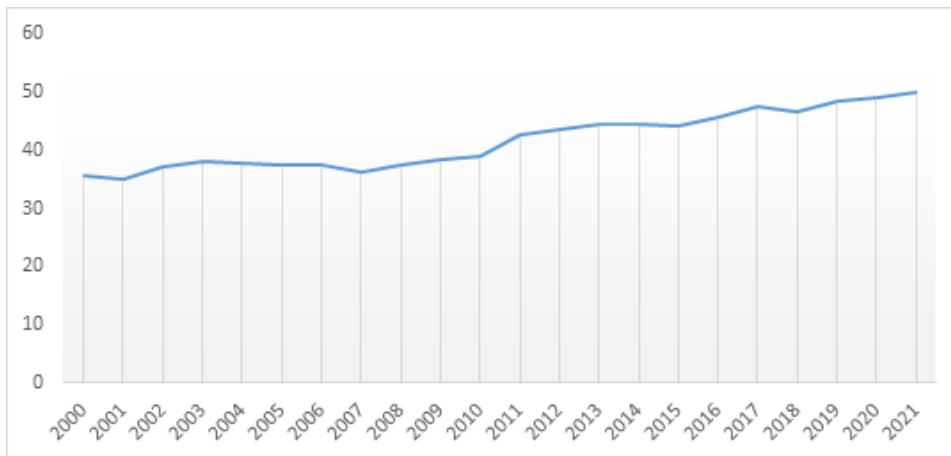


Figure 2. Trend of China EPU index
Source: Authors' construction

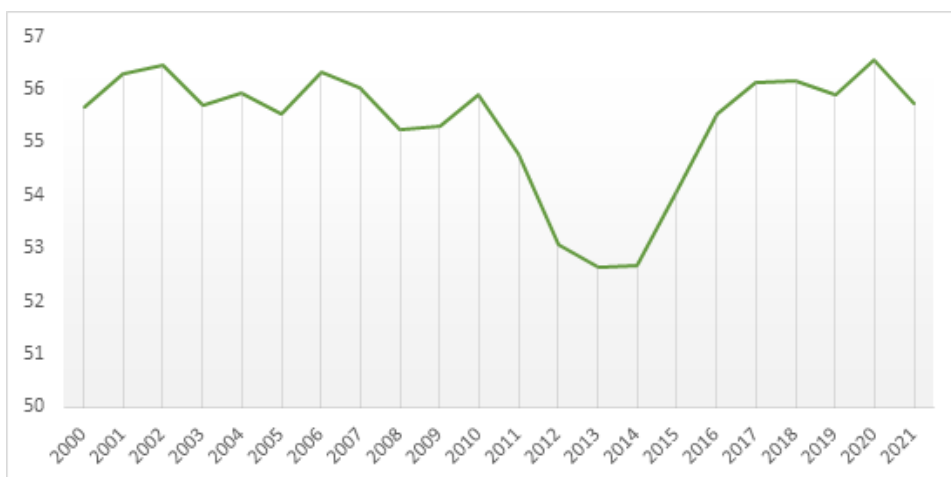


Figure 3. Trend of China-US Tension index
Source: Authors' construction

two superpowers dampens temporarily when the global economy experiences a crisis.

5. Results

The result of our analysis is presented in this section. We particularly evaluate the role of policy uncertainties in the bilateral trade relationship between China and African countries. The emergence of China as the second-largest economy in the world after

the US has seen the country establishing a formidable stance in the African economy. Since 2010, when China occupied this position [previously maintained by Japan from the same East Asian region], the country has enlarged its trade alliance with each African economy, both by exports and imports. As a way to gauge the possible interference of policy uncertainties from this country in this bilateral trade relation, we have conducted an

analysis to measure the effect of trade policy uncertainty from China on Sino-African trade relations, where we consider exports, imports, and total trade.

In the second analysis, we have also considered China's economic policy uncertainty with the aim to see whether such an effect transcends the usual trade uncertainty index. In each of these models, we have tested for asymmetric effects by grouping African countries into low- and high-income countries and see whether the pattern obtained in the full sample analysis holds under sub-sample analysis. Also, given the involvement of China with the US in trade and related wars, we have also given emphasis on the possibility of interference of this stance in its trade relation with Africa. As a result, we use the US-China tension index for possible measurement. Other than the US, uncertainty in China can possibly fuel from other top countries of the world. In this regard, we give more consideration to global economic uncertainty, which involves the aggregation of uncertainty indices from the top 21 countries, including China but excluding any country from Africa. Thus, we further use this index to estimate the possible effect on Sino-Africa trade relations. Our emphasis is placed on both short- and long-run periods using panel ARDL analysis that involves 32 African countries.

Table 5 presents the output from the first analysis. In the short run, there is evidence that trade policy uncertainty has a negative impact on categories of China's trade with Africa. Specifically, when the trade policy uncertainty index soars by 1%, it tends to dampen China's export to Africa, imports from Africa, and the entire trade by the respective magnitude of 0.128, 0.168, and 0.131, signifying a higher effect on China's import [Africa's exports to

China]. This suggests that heightened trade policy uncertainty temporarily suppresses bilateral trade flows between China and African countries, with China's imports from Africa experiencing the largest short-run decline. The effect turns out to be positive and significant across trade categories, with imports having a higher magnitude of impact. The positive long-run coefficients suggest that the adverse effects of trade policy uncertainty diminish over time as bilateral trade gradually adjusts. In this regard, we found imports increasing by 0.35% and exports by 0.23% in the long run with a 1% increase in the trade uncertainty index.

However, the error correction terms indicate slow adjustment to equilibrium in case of any imbalance in the trade relationship. The additional analysis with asymmetric effects (see Table 6) indicates similar results under the short run, as those obtained in the full sample analysis. However, in the long run, exports from China to high-income countries are found to be negative and not significant. This suggests that the long-run trade-enhancing effect of trade policy uncertainty is concentrated among low-income African countries, while the corresponding effect for high-income countries is not statistically significant.

Table 7 presents the outcome on the possible effect of China's economic policy uncertainty in Sino-African bilateral trade relations. More emphatically, there is not much response from the trade due to rising economic policy uncertainty from China, except for China's importation from Africa, and this only occurs in the long run. In the immediate time, no effect manifests from the uncertainty on either imports or exports. As the economic policy uncertainty lingers, all of China's trade variables with Africa drop more

Table 5. Sino-African Trade and China's trade policy uncertainty

Variable	Export	Import	total trade
TPU	0.2345*** (0.0515)	0.3480*** (0.0585)	0.2809*** (0.0528)
C	1.7508*** (0.1467)	3.0234*** (0.2862)	1.9870*** (0.1970)
d(tpu)	-0.1284*** (0.0117)	-0.1679*** (0.0403)	-0.1315*** (0.0117)
ec	-0.1286*** (0.0122)	-0.2719*** (0.0293)	-0.1409*** (0.0148)

Note: *, **, *** indicate significant level at 1%, 5% and 10% level of significance.

Source: Authors' compilation

Table 6. Sino-African Trade and Trade Policy Uncertainty (Asymmetry)

Variable	Export		Import		Total	
	Low	High	Low	High	Low	High
TPU	0.2861*** (0.0836)	-0.0289 (0.1394)	0.3740*** (0.0807)	0.7710*** (0.1473)	0.3795** (0.0852)	0.1356 (0.1304)
C	1.7428*** (0.1768)	1.3689*** (0.2494)	3.1073*** (0.4591)	1.9277*** (0.4517)	1.8692*** (0.2399)	1.4281*** (0.3150)
d(tpu)	-0.1467*** (0.0175)	-0.1008*** (0.0212)	-0.1335*** (0.0442)	-0.1671*** (0.0385)	-0.1443*** (0.0199)	-0.1217*** (0.0164)
ec	-0.1379*** (0.0173)	-0.0857*** (0.0168)	-0.2876*** (0.0468)	-0.1997*** (0.0507)	-0.1434*** (0.0192)	-0.0914*** (0.0225)

Note: *, **, *** indicate significant level at 1%, 5% and 10% level of significance.

Source: Authors' compilation

Table 7. Sino-African Trade and China's economic policy uncertainty

Variable	Export	Import	total trade
EPU	0.4094 (0.7619)	2.8881*** (0.5109)	0.5237 (0.7669)
C	1.6186*** (0.1352)	0.5412*** (0.1097)	1.8304*** (0.1891)
d(epu)	0.2449 (0.2719)	1.0540 (0.8424)	0.5996* (0.3497)
ec	-0.1242*** (0.0116)	-0.2968*** (0.0273)	-0.1381*** (0.0150)

Note: *, **, *** indicate significant level at 1%, 5% and 10% level of significance.

Source: Authors' compilation

Table 8. Sino-African Trade and China's economic policy uncertainty

Variable	Export		Import		Total	
	Low	High	Low	High	Low	High
EPU	0.9090 (1.0115)	-0.1875 (1.1743)	1.8938** (0.8493)	6.0738*** (0.4397)	0.8239 (1.1379)	0.3290 (1.0501)
C	1.4357*** (0.1530)	1.7896*** (0.2410)	1.5606*** (0.2116)	-3.6524*** (0.7129)	1.6460*** (0.2222)	1.9535*** (0.3107)
d(epu)	0.1135 (0.4771)	0.3745 (0.2785)	0.5646 (1.1726)	0.7183 (1.2625)	0.7254 (0.5557)	0.4634 (0.4442)
ec	-0.1370*** (0.0173)	-0.1119*** (0.0163)	-0.2924*** (0.0448)	-0.3542*** (0.0505)	-0.1424*** (0.0192)	-0.1342*** (0.0235)

Note: *, **, *** indicate significant level at 1%, 5% and 10% level of significance.

Source: Authors' compilation

significantly, except for her importation, which remains significant with a magnitude of 2.88 [when a 1% change occurs to the EPU index]. These findings suggest that China's economic policy uncertainty is associated with stronger imports from Africa in the long run, thereby improving Africa's trade position. However, a similar emphasis in the sub-sample analysis in Table 8 gives the same outcome, but high-income countries tend to benefit more from China's importation from the region in the long run.

As a step further, the implication of global economic policy uncertainty is considered to gauge its possible effect in Sino-Africa trade alliance. This is possible given the inclusion of China in the construction of the index and the possible interference of uncertainties from other top economies like the US and Japan in dampening Sino-Africa trade relations. The outcome from this estimation is provided in Table 9. However, the impact from this uncertainty appears to be similar to the outcome when China's EPU was used. The effect is positive in the long run for China's importation from Africa, though with a higher effect. This indicates that aside from Sino's

domestic uncertainty policy, a similar effect may play out from Global EPU as in the case of domestic. In other words, as this policy lingers, China tends to import more from Africa. This indicates that global economic policy uncertainty is associated with stronger Chinese imports from Africa in the long run. This may reflect adjustments in trade patterns that create greater export opportunities for African economies during periods of heightened global uncertainty.

US-China alliances have evolved over time, and the arising tension has implications on both countries' bilateral trade with other countries of the world. We give consideration to this stance by evaluating the implication of the US-China tension index on Sino trade relations with Africa. We provide this implication for short- and long-run periods in Table 10. In the short run, rising tension index in this case leads to Sino-African trade cuts more significantly and with higher magnitude in her imports from African countries. This gives a similar effect as obtained in the case of trade policy uncertainty but with a rather higher effect. However, the effect of this tension transcends the short-run period,

Table 9. Sino-African Trade and Global Economy Policy Uncertainty

Variable	Export	Import	total trade
GEPU	-0.6305 (0.8717)	3.3386*** (0.6684)	0.02253 (0.8326)
C	1.8773*** (0.1797)	-0.5614*** (0.1500)	1.9997*** (0.2334)
d(gepu)	-0.8684* (0.4737)	0.3947 (1.1141)	0.0070 (0.3610)
ec	-0.1066*** (0.0117)	-0.2844*** (0.0279)	-0.1311*** (0.0162)

Note: *, **, *** indicate significant level at 1%, 5% and 10% level of significance.

Source: Authors' compilation

Table 10. Sino-African Trade and US-China Tension

Variable	Export	Import	total trade
UCT	10.7121*** (3.5536)	7.3214** (3.4695)	15.722*** (4.1223)
C	-3.0517*** (0.3110)	-3.8920*** (0.4919)	-5.4559*** (0.6283)
d(uct)	-2.1207*** (0.8004)	-3.3066* (1.8948)	-2.0294*** (0.5330)
ec	-0.1082*** (0.0102)	-0.2362*** (0.0269)	-0.1147*** (0.0129)

Note: *, **, *** indicate significant level at 1%, 5% and 10% level of significance.

Source: Authors' compilation

albeit with a positive and significant impact. This shows China's differing responses to policy uncertainties given her trade alliance with African countries. While global economic policy uncertainty does not significantly affect China's exports to Africa, it is associated with stronger imports from Africa. In contrast, the US–China Tension Index is associated with increases in both exports to and imports from Africa in the long run.

6. Conclusion and Policy Implications

This study examines the role of China's domestic and external policy uncertainties in its trade relations with African countries. For

evaluation of our stance, we give consideration to four policy uncertainties: China's trade policy; China's economic policy uncertainty; global economic policy uncertainty and US-China tension index. Thus, we emphasize this for 32 African countries with a data scope from 2000 to 2021, where the current data source ends. Given the method of our analysis, we are able to provide outcomes for both short- and long-run periods.

The findings of this study are noteworthy. One, while trade policy uncertainty leads to immediate trade cuts (both exports and imports) in the bilateral trade with China, the effect lingers on to the long run, albeit with

a positive effect, signifying the short-term implication of the uncertainty and the ability to withstand this effect in the long run. However, the effect of a country's economic policy uncertainties rather manifests more with a positive sign in China's imports in the long run. Two, external policy uncertainties are associated with an improvement in Africa's trade position in Sino-African trade relations, primarily through stronger Chinese imports from Africa. Three, tension arising from the US tussle with China around global policy choices has wider implications on her trade policy with Africa, especially in the immediate periods. Four, external policy uncertainties (GEPU and UCT) have a stronger influence on China's trade with Africa, particularly by increasing China's imports from African countries in the long run.

The outcome from this study has differing policy implication, particularly for Africa's trade alliance with China. First, it highlights the need for African economies to pay close attention to trade policy uncertainty in China in order to benefit from the relationship. It also highlights the importance of strengthening productive capacity during periods of heightened trade uncertainty. The aftermath of such periods often results in more buoyant economy. This in a way creates a solid foundation for the economy following any worse trade policy and distortion. Beyond trade uncertainty, when economic policy uncertainty soars in China, the long-term response typically leads to an increase in imports. A key implication is that China's economic policy uncertainty can be transmitted to African economies through bilateral trade channels. Therefore, production of goods and services should be expanded in each African country, to strengthen home demand and provide for the exportations of others.

Furthermore, the outcome suggests that other than China, African countries should diversify their trade partnerships beyond China and engage with advanced countries. This strategy could reduce African countries' exposure to external policy uncertainty and improve resilience to short-run trade disruptions. Strengthening trade alliances with a broader range of partners will also serve as a buffer against potential disruptions stemming from escalating tensions between the U.S. and China, the world's two major superpowers. Another crucial step is to place greater emphasis on the African Continental Free Trade Area (AfCFTA), which promotes the free movement of goods across the continent. By advancing regional integration, African countries can better shield themselves from the adverse effects of foreign policy uncertainty.

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