

# The Impact of FOCAC on African countries Trade Flows

Elias Ellias Tsokalida & Yang Jun

## Abstract:

One of the fundamental questions in international trade literature is whether “with whom countries conduct their trade with” matters for their respective trade flows. This paper examined the impact of trading with China on African countries’ trade flows. We proxy Africa-China partnership using membership in Forum for China – Africa Cooperation (FOCAC) framework. We also examined whether one country membership in FOCAC has trade creating advantages on its trade flows and whether two countries’ membership in FOCAC has trade creating advantages as well. Our study period is from 1990 to 2018 using a sample of 150 countries. We estimated our framework using panel data fixed effects methodology. We found that FOCAC has positive and significant impacts on both exports and imports in African countries. We found trade diversion effects of either one or both countries membership in FOCAC for our imports equation. For our export equation, we found that one country membership in FOCAC has trade creation impacts while two countries being members of FOCAC has trade diversion impacts. We conducted our robust estimation using Pseudo Poisson maximum likelihood estimation and found comparable results for our study. These findings may enable authorities in Africa, China and beyond to strategize on how their countries should position themselves in terms of industry structure to maximize their benefits as well as sensitizing both their producers and consumers on how they can take advantage of trade preferences offered.



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## 1.0 Introduction

This paper focus on whether “with whom countries conduct their trade with” matters for their respective trade flows. Our aim was to examine the impact of trading with China on African countries’ trade flows. Although, we were motivated by the particular importance accorded to the Africa – China partnership under the Forum for China – Africa Cooperation (FOCAC), the results are applicable beyond Africa and China as we conducted our research on a broad sample of 150 countries. Thus, this paper examines the general proposition that “with whom countries’ trade with” matters for their respective trade flows. Though there is an extensive literature on this topic, research remains inconclusive as to whether there are indeed benefits of being a member of strategic partnerships. We proxy Africa-China partnership using membership in FOCAC framework. In addition to this general objective, we examined two other objectives by examining whether one country membership in FOCAC or two countries membership in FOCAC have each trade creation advantages on a country’s trade flows.

Our contribution is mainly in two parts. Firstly, the increasing importance of FOCAC is remarkable from both Africa and China side. However, empirical research on the impact of the partnership especially on African countries is lacking. As such, we aim to bridge this gap. Secondly, more than ever before, policy makers are questioning whether indeed trade partnerships offer trade benefits calling for more robust empirical research. This is because studies have produced mixed results. All these have happened because of the different methodologies and samples used. As such, we seek to make a contribution by estimating a theoretically correct study which is robust as well. The remainder is as follows: section 2 presents the literature review; section 3 is about the research methodology; sections 4 discusses results from our main estimation techniques and robustness results; and 5 provides a conclusion.

## 2.0 Literature review

### 2.1 Evolution of Africa – China trade partnership

Modern China-Africa partnership can be traced to the founding of the People’s Republic of China around 1949. Then, most African countries were still under colonial rule. As African countries were one by one gaining independence, the need for international cooperation to develop their economies intensified. On the other hand, China was undergoing major economic reforms in terms of industrialization and modernization that required markets for their final products as well as sources of their inputs to sustain its production. Otenia (2017) and Oyejide et. al. (2009) both agreed that China’s economic growth fueled by its domestic reforms led to the need for more inputs mainly in form of natural resources and oil. This implied that there was huge demand for these commodities and other primary commodities used as inputs in the production industry in China which eventually pushed the commodity prices upwards. As such, this created favorable terms of trade for African countries exporting these items. Because of this “win-win” situation, both sides started to invest in their strategic partnership for mutual benefits. By the 1990s, a number of African countries had already started recognizing the one China policy while China had put in place strategies aimed at enhancing trade flows between the two sides. With the formation of FOCAC in 2000, Africa-China cooperation intensified rapidly and their respective trade dynamics were completely transformed. FOCAC was established to provide a framework for equal consultation for enhanced cooperation in many areas including trade. In this light, the two sides agreed to encourage preferential market access especially for products originating from African less developed countries (LDCs) having diplomatic relations with China into Chinese market. In

2003, China announced the granting of zero-tariff treatment to some of the commodities originating from Africa's LDCs. Thereafter, during the FOCAC Summit in 2006, China opened-up further its market to Africa products by increasing from 190 to over 440 the number of export items to China eligible for zero-tariff treatment from Africa's LDCs having diplomatic relations with China. By 2018, the two sides agreed to further promote imports from Africa's LDCs, and China progressed with its zero-tariff exemption to products under 97% of all tariff items from the LDCs in Africa having diplomatic relations with China based on rules of origin which are based on World Trade Organization (WTO) and World Customs Organization (WCO) as well as setting up a US\$5 billion special fund for financing imports from Africa (FOCAC, 2018). Trade between the two strategic partners grew significantly and in 2008, reached approximately US\$106.8 billion hitting the target of US\$100 billion set during the FOCAC Summit in 2006 (FOCAC, 2009). By the end of 2012, twenty-two (22) Africa LDCs had RMB910 million worth of tariff exempted, involving US\$1.49 billion-worth of goods CSC (2013). In 2009 China became Africa's largest trading partner (UNDP China, 2013). As China became Africa's largest trading partner, the same year Africa's exports to China fell to US\$44.99 billion, representing a significant 29% decline. Perhaps the most notable decline in Africa's exports was recorded in 2015, where Africa's exports to China fell by approximately 39% from US\$115 billion to just about US\$70 billion and a further decline in 2016 to about US\$56 billion (NBSC, 2016). UNCTAD (2017) and AfDB (2012) suggested that unstable and falling commodity prices might have been the major factor contributing to the unsustainable Africa's exports.

## 2.2 Review of literature on China – Africa trade partnership

There are very few empirical studies on Africa-China partnership and even among the few, there has been significant differences which make it close to impossible to make comparisons. We provide two main reasons for such variations. Firstly, most studies have used different samples with varying number of African countries which may not be a true representation of the African continent as such results may not be generalized to the entire continent. In the same light, other methodologies such as gravity equations require the use of a global sample of countries to avoid bias rather than only focussing on the countries of interest. Secondly, the key variables are totally different and are measured and interpreted in various ways suitable to the authors. Most related to this study are those that tried to explain the determinants of Africa's trade flows towards China. Jun et. al., (2015) conducted their study on the impact of China's economic policies on China-Africa's trade flows focussing on agricultural trade for the period from 1992 to 2010 using truncated ordinary least squares (OLS). They examined their objectives using two equations, one for China's agricultural exports to Africa using 20 African countries while the other one for China's imports from Africa using 17 countries. They found that China's economic growth and an increase in Africa's agricultural product output were two key drivers for both China's agricultural imports from Africa as well as China's exports to Africa. Johnson et. al., (2015) conducted a study on the factors that affect China's imports for the period from 1995 to 2009 using a sample of 155 countries in a gravity-based model using Pseudo Poisson Maximum likelihood (PPML) estimation method. Their key variables included one China policy. One China policy was found to be positive and significantly associated with imports by China using OLS while negative and significant using PPML. Berthelemy (2012) conducted a research from 1996 to 2007 on a sample of African countries to check whether China engagement in Africa has led to improvements in import flows reported by African countries from all partner countries. Their main argument was that development and financial assistance granted by China to African countries has acted as a subsidy equivalent to

a partial liberalization of imports of Chinese products in African countries, which could eventually lead to trade creation and/ or diversion. They reported their results using year fixed effects and found trade creation effects for the years from 1996 to 2007. Broadman (2007) conducted their study on the impacts of India and China potential for African countries trade flows based on micro data from firm-level quantitative survey covering four (4) African countries. Their study focused on “at-the-border” formal trade policies, elements of the “behind-the border” business environment and related institutions, and the extent of “between-the-border” trade facilitation and logistics constraints. Their results suggested that while formal trade policies are key in promoting Africa’s exports to Asia (China and India), other issues such as behind-the-border and between-the-border constraints are as critical as well.

### 3.0 Research methodology

This study used a global sample of 150 countries. We obtained bilateral import data obtained from World Bank World Integrated Trade Solutions (WITS)’s UNComtrade feature and data covers a period from 1990 to 2018. Our time period and country sample are strictly dictated by the availability of data. We obtained landlocked and distance variables from Centre d’Etudes Prospectives et d’Informations Internationales (CEPII) gravity database. FDI and gross domestic product (GDP) were obtained from the World Bank World Development Indicators (WDI). We obtained one China policy variables from the Ministry of Foreign Affairs of the People’s Republic of China accessed at <https://www.fmprc.gov.cn/web/> while we obtained our FOCAC variables from FOCAC website accessed at <https://www.focac.org/eng/>. We built our estimation methodology based on the bilateral gravity model of trade. Yotov et. al. (2015) suggested that the gravity model is very intuitive with strong theoretical foundations and predictive power. The intuitiveness of the gravity model is derived from the metaphor of Newton’s law of universal gravitation which predicts that international trade between two countries is directly proportional to their economic sizes mostly measured using respective GDPs and inversely proportional to their trade costs such as distance. Anderson & van Wincoop (2003) demonstrated that in the context of  $N$  countries and a variety of goods differentiated by the country of origin, theoretically based gravity equation takes the following form:

$$X_{ij} = \frac{Y_i Y_j}{Y} \left[ \frac{t_{ij}}{\Pi_i P_j} \right]^{1-\sigma} \quad (1)$$

Where  $X_{ij}$  are in our case imports by country  $i$  from country  $j$ ,  $Y_i$  and  $Y_j$  represent GDPs in country  $i$  and country  $j$ , respectively, while  $Y$  is world GDP. Variable  $t_{ij}$  represent is a cost in country  $i$  of importing a good from country  $j$ . The symbol  $\sigma > 1$  and represents the elasticity of substitution while variables  $\Pi_i$  and  $P_j$  represent importer and exporter ease of accessing markets or in other words, country  $j$ ’s outward and country  $i$ ’s inward multilateral resistance terms. If a country is remote from world markets, then these are low where remoteness index is calculated based on physical factors such as distance from large markets. We transform Equation 1 using natural logarithms and introduce time factor  $t$ , as well as introducing our FOCAC variables of interest, as follows:

$$\ln X_{ij,t} = \beta_0 + \beta_1 \ln Y_{jt} + \beta_2 \ln Y_{it} + \beta_3 \ln t_{ijt} + \beta_4 \text{focac}_{it} + \beta_5 \text{onefocac}_{it} + \beta_6 \text{bothfocac}_{it} - \beta_7 \ln P_{jt} - \beta_8 \ln \Pi_{it} + \varepsilon_{ijt} \quad (2)$$

In Equation 2 above, since  $P_{jt}$  and  $\Pi_{it}$  are not directly observable, we control for them using exporter-time (Ex) and importer-time (Im) fixed effects. In doing so, we are also aware that these fixed effects will in-turn absorb  $Y_{jt}$  and  $Y_{it}$  from the gravity equation as well as other observable and unobservable country specific characteristics such as institutions, national policies and exchange rates. Variable  $lnT_{ijt}$  is proxied by distance between capital cities of trading countries and in other cases where capital cities are not necessarily economic cities, this distance is then measured between major economic cities or towns. Now our final estimation equation is provided as Equation 3 as follows:

$$\ln X_{ijt} = \beta_0 + \beta_1 Ex_{jt} + \beta_2 Im_{it} + \beta_3 \ln Dist_{ijt} + \beta_4 focac_{it} + \beta_5 onefocac_{it} + \beta_6 bothfocac_{it} + \beta_7 T_t + \varepsilon_{ijt} \quad (3)$$

Where *focac* is a dummy variable taking the value of one if importer is a Sub Saharan African country that is member of FOCAC and zero otherwise at a particular time period. Variable *onefocac* is also a dummy variable taking the value of one if either importer or exporter is a member of FOCAC but not all of them and zero otherwise. Variable *bothfocac* is a dummy variable taking one if both countries are members of FOCAC but not necessarily trading under FOCAC while zero otherwise. This only holds true for bilateral trade between African countries for example for year 2018, Malawi and South Africa have bilateral trade (both exports and imports in various sectors) but not necessarily under FOCAC framework. In this case, *bothfocac* takes the value of one and zero otherwise. Variable  $T_t$  is our time fixed effects to control for any unobservable fixed effects that vary with time. We estimated Equation 3 using panel data fixed effects methodology based on Hausman test results.

#### 4.0 Results and discussions

Column (1) of Table 1 presents our baseline results conducted using OLS. Economic size of both exporting and importing countries as measured by current GDP per capita purchasing power parity (PPP) was found to be positive and significant both at 1% level of significance. Distance representing trade costs was found to be negative and significant at 1% level similar to the landlocked variable which was also negative and significant at 1% level of significance. We also found transport infrastructure to be positive and significant at 1% level of significance suggesting that improvements in transport facilities had enhanced import flows in the respective countries. Net foreign direct investment was also found to be positive and significant suggesting that foreign investments in respective countries has led to imports demand of certain products. We found *focac* variable to be positive and significant at 1% level of significance suggesting that membership in FOCAC has a positive impact on respective African countries trade flows. However, we found *onefocac* and *bothfocac* to be negative and significant both at 1% level of significance suggesting that being members of FOCAC have led to trade diversion from other countries towards China. Our results from the fixed effects panel data methodology are reported in Column (2). In this part, we controlled for both time and country pair fixed effects. We found robust results for *focac* variable to be positive and significant at 1% level of significance and both *onefocac* and *bothfocac* to be negative, but *onefocac* significant at 1% level while *bothfocac* significance at 10% level of significance. Column (3) reports our robust check results using Pseudo Poisson maximum likelihood methodology. We found robust results for our *focac* variable at 1% level of significance. Our variables *onefocac* and *bothfocac* were no longer significant and this time, *bothfocac* became positive.

We also conducted our estimation using bilateral exports. Column (4) reports our baseline estimation using OLS. We found positive and significant results for exporter and importer GDPs, negative and significant results for distance and landlocked variables. We found positive and significant results for both transport and foreign direct investment variables. Our variables for *focac* was positive and significant at 1% level of significance. Our *onefocac* was negative and significant suggesting export diversion at 1% level of significance while *bothfocac* variable was positive but insignificant. Column (5) represents our results using fixed effects methodology controlling for both time and country pair fixed effects. Our *focac* variable is robust. Variable *bothfocac* has the same sign as before but now significant at 1% level while *onefocac* is no longer significant but sign does not change. Column (6) reports robust results from Pseudo Poisson maximum likelihood methodology.

The following Table 1 summarizes our findings.

VARIABLES	(1) lnimports	(2) lnimports	(3) imports	(4) lnexports	(5) lnexports	(6) exports
focac	1.582*** (0.134)	2.173*** (0.179)	2.355*** (0.293)	1.333*** (0.0765)	1.523*** (0.149)	1.604*** (0.189)
bothinfocac	-0.276*** (0.0384)	-0.111* (0.0579)	0.0824 (0.198)	0.00502 (0.0363)	0.173*** (0.0590)	0.298** (0.150)
oneinfocac	-1.017*** (0.0277)	-0.239*** (0.0277)	-0.233 (0.158)	-0.312*** (0.0235)	-0.0434 (0.0269)	-0.0160 (0.101)
lndistance	-1.819*** (0.0173)			-1.990*** (0.0172)		
lngdp_exporter	0.877*** (0.0128)			0.561*** (0.0112)		
lngdp_importer	0.122*** (0.0120)			0.233*** (0.0102)		
lntransport	0.781*** (0.0102)			0.909*** (0.00897)		
landlocked	-0.827*** (0.0285)			-1.274*** (0.0240)		
lnfdi	0.120*** (0.00897)			0.154*** (0.00822)		
Constant	-4.860*** (0.216)	8.818*** (0.0265)		-3.415*** (0.194)	9.217*** (0.0249)	
R-squared	0.370	0.163		0.471	0.208	
FE	NO	YES	YES	NO	YES	YES

Source: The author's estimates

Note: \*\*\*, \*\* and \* denote respectively statistical significance at 1%, 5% and 10% levels. Robust standard errors in parentheses. Country-pair and year fixed effects are only included in the regressions of columns (2), (3), (5) and (6).

## 5.0 Conclusion

With whom countries trade with matters most. For most African countries, trade with China presents an opportunity in several other aspects. We found positive impacts of FOCAC on both exports and imports of African countries. We also found that many African countries have started importing more from China as compared to their other bilateral trade partners. In addition to that, we found that African countries are exporting more within themselves when there are both members of FOCAC while they export to China when the other export partner is not member of FOCAC. Following this research, we suggest two main recommendations.

Firstly, there is need for African countries to conduct comprehensive research on which products to export to China's market depending on their comparative advantage in the spirit of product diversification. The African countries should also study China's import demand market to see what products to export for them to ably take advantage of the zero-tariff treatment. Lastly, African countries need to strategize in order to maximize the benefits of importing from China. Imports benefits both consumers and producers in different ways. For consumers, the benefit comes from wide product variety and cheaper prices of products. For producers, it means cheap inputs and cheap technology which translate into low cost of production. African countries need to find ways of matching cheap imports and technology for their industrial upgrading. For further research, we suggest not only to using of country level data but also investigating in which sectors the impact is transmitted in African countries.

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## Appendix

## List of countries

1.	Albania	51.	France	103.	Papua New Guinea
2.	Algeria	52.	Gabon	104.	Paraguay
3.	Andorra	53.	Gambia, The	105.	Peru
4.	Angola	54.	Georgia	106.	Philippines
5.	Antigua and Barbuda	55.	Germany	107.	Poland
6.	Argentina	56.	Ghana	108.	Portugal
7.	Armenia	57.	Greece	109.	Qatar
8.	Australia	58.	Grenada	110.	Romania
9.	Austria	59.	Guinea	111.	Russian Federation
10.	Azerbaijan	60.	Guyana	112.	Rwanda
11.	Bahamas, The	61.	Honduras	113.	Sao Tome and Principe
12.	Bahrain	62.	Hungary	114.	Saudi Arabia
13.	Bangladesh	63.	Iceland	115.	Senegal
14.	Barbados	64.	India	116.	Seychelles
15.	Belarus	65.	Indonesia	117.	Sierra Leone
16.	Belgium	66.	Ireland	118.	Singapore
17.	Belize	67.	Israel	119.	Slovak Republic
18.	Benin	68.	Italy	120.	Slovenia
19.	Bolivia	69.	Jamaica	121.	South Africa
20.	Botswana	70.	Japan	122.	Spain
21.	Brazil	71.	Jordan	123.	Sri Lanka
22.	Bulgaria	72.	Kazakhstan	124.	St. Kitts and Nevis
23.	Burkina Faso	73.	Kenya	125.	St. Lucia
24.	Burundi	74.	Korea, Rep.	126.	St. Vincent and the Grenadines
25.	Cambodia	75.	Kuwait	127.	Suriname
26.	Cameroon	76.	Kyrgyz Republic	128.	Swaziland
27.	Canada	77.	Latvia	129.	Sweden
28.	Cape Verde	78.	Lebanon	130.	Switzerland
29.	Central African Republic	79.	Lesotho	131.	Tajikistan
30.	Chile	80.	Lithuania	132.	Tanzania
31.	China	81.	Madagascar	133.	Thailand
32.	Colombia	82.	Malawi	134.	Togo
33.	Comoros	83.	Malaysia	135.	Tonga
34.	Congo, Rep.	84.	Maldives	136.	Trinidad and Tobago
35.	Costa Rica	85.	Mali	137.	Tunisia
36.	Cote d'Ivoire	86.	Malta	138.	Turkey
37.	Croatia	87.	Mauritania	139.	Turkmenistan
38.	Cuba	88.	Mauritius	140.	Uganda
39.	Cyprus	89.	Mexico	141.	Ukraine
40.	Czech Republic	90.	Mongolia	142.	United Arab Emirates
41.	Denmark	91.	Morocco	143.	United Kingdom
42.	Dominica	92.	Mozambique	144.	United States
43.	Ecuador	93.	Namibia	145.	Uruguay
44.	Egypt, Arab Rep.	94.	Nepal	146.	Vanuatu
45.	El Salvador	95.	Netherlands	147.	Venezuela
46.	Estonia	96.	New Zealand	148.	Vietnam
47.	Ethiopia(excludes Eritrea)	97.	Nicaragua	149.	Zambia
48.	Fiji	98.	Niger	150.	Zimbabwe
49.	Finland	99.	Nigeria	103.	Papua New Guinea
50.	Sudan	100.	Norway	104.	Paraguay

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