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African trade dynamics: is China a different trading partner?

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This paper employs the standard gravity model to identify the quality of governance of China's African trade partners. As a benchmark, we perform the same analysis on other major African trade partners: France, Germany, UK, and USA. Data from 53 African countries in 1996–2009 show that only China is consistently willing to import more from African countries with a lower governance standing. By doing so; China fills a gap left open by the other major world economies, and might even play a key role in the future development of Africa.

Keywords: Africa; China; trade

JEL Classifications: O55; F1; F14

1. Introduction

During the last two decades emerging market economies have increasingly become major players at the global level. For instance, the five largest Emerging economies, comprising Brazil, China, India, Mexico, and Russia, now account for about 20% of the world output and 27% of global investment flows in PPP terms. As a result, these countries have intensified their trade (and financial linkages) with developed countries but also with the least developing countries (LDCs).

One such linkage that has received much attention in recent years is the China–Africa relationship. For instance, China's shares in Africa's trade have risen dramatically from less than 1% in the 1980s to about 13% and 11% in 2009, respectively for Africa's import and export of good and services. Moreover, and most importantly, China now accounts for more than any European individual country in Africa's trade. In light of these considerations, this paper aims to provide a comprehensive analysis of the surge in China–Africa trade relations. In particular, we examine the determinants of both the trade of Africa with China and of Africa with the other main partners.

There is a growing literature on the relationship between Africa and China (see for example, Zafar 2007; Dumludag, Saridogan, and Kurt 2007; Obstfeld 2009; Pilling 2009). The main motivation of this literature is the strong surge in absolute terms that characterized the Africa China trade relationship in recent years. While

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this phenomenon is now well known, there is a gap in the literature on the nature of this increase in trade, and how it compares to the trade of African countries with the other partners. Our paper attempts to fill this gap.

For the purpose of the analysis we estimate a number of gravity equations for African trade. In particular, we regress the China–Africa trade data on the traditional gravity variables, augmented with a set of indicators capturing the quality of governance of African countries. As a benchmark we use similar regressions to examine the driving forces of trade between African countries and their other main trading partners, including three European countries (France, Germany, and the UK) and the USA. The traditional gravity regressors examined in this paper include income, physical distance, landlocked, language, and colony. We also include a variable capturing African countries with abundant oil and minerals and time-fixed effects capturing any other time varying events. For the quality of governance we use six indicators: Voice and Accountability, Political Stability and Absence of Violence/Terrorism, Government Effectiveness, Regulatory Quality, Rule of Law, and Control of Corruption. Moreover, we derive an index of the quality as the simple average across the six indicators.

We find that, next to the standard gravity variables, governance plays a significant role in the dynamics of African trade. In particular, we find that, ceteris paribus, China, France, Germany, the UK, and USA export significantly more to African countries with a better quality of governance. Imports, however, present a different picture. China covers the unique role of importing more from African countries that display a bad governance (a trend that is not consistently present for the other major African trade partners).

Anderson and Marcouiller (2002) present a theoretical link between trade and the quality of governance. They also present an empirical analysis using cross-section trade data for 1996. The main insight from their study is that a lower quality of governance increases transaction costs and generates a mark-up on traded goods. As such, Anderson and Marcouiller (2002) show that improving the quality of governance boosts trade. Our paper also contributes to this literature as we estimate the gravity model for both imports and exports while Anderson and Marcouiller (2002) only examine imports. Moreover, our empirical analysis examines data in both the cross-section and the time dimensions.

The rest of this paper is structured as follows. The next section presents stylized facts on the dynamics of Africa trade. Section 3 introduces the methodology and Section 4 shows our empirical results. Finally, Section 5 concludes.

2. Stylized facts on the dynamics of Africa trade

Figure 1 reports the value of Africa's exports and imports with China over the period 1980–2009. The data show a spectacular growth of China–Africa trade over the last decades. In particular, the values of China–Africa exports and imports surged from US$ 676.5 and 227.4 million in 1980 to 43.3 and 52.9 billion in 2008. The same spectacular growth is also observed when we normalized these data by the US cpi. Moreover, Africa has had a trade deficit towards China until the end of the 1990s. From 2000, for the first time, Africa reached a trade surplus vis-à-vis China. Starting

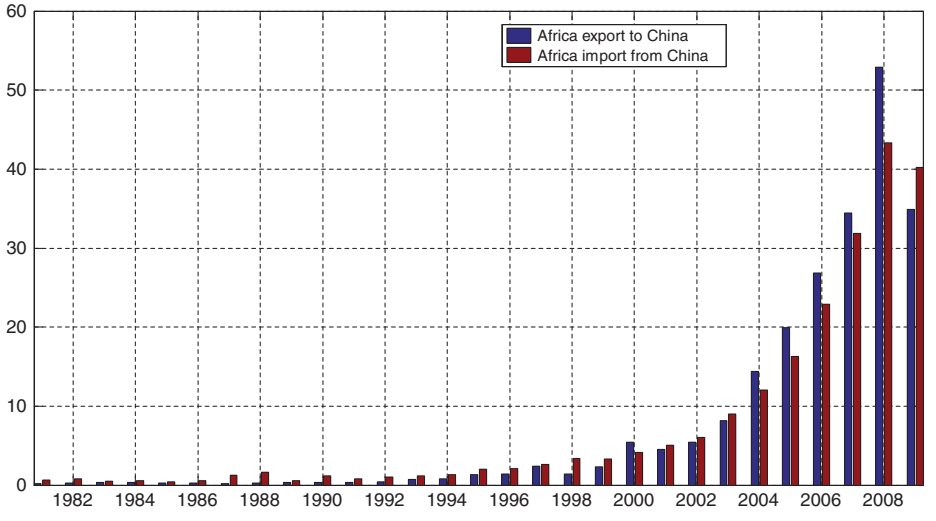

Figure 1. Africa–China trade (billion US dollars).
Sources: IMF, direction of trade and statistics.

in 2004 Africa constantly accumulated trade surpluses versus China until 2009, when a trend reversal occurred, coinciding with the recent financial crisis.[1]

Most importantly, Figures 2 and 3 show that China's shares in African trade have increased by factors of about 168 and 5.4 respectively for African exports and imports. Furthermore, China has become the most important exporter to Africa whereas Germany, the UK and the US now play a relatively minor role in African trade (Figure 3). In the same way, the rise of China's imports has led China to become the second largest importer from Africa, after the United States[†]. To what extent has the China-Africa trade surged in recent years?

One explanation for the sharp rise of China's imports from Africa could be that as China's economy is growing faster in recent years, it is requiring more raw materials. This demand is thus met by Africa's comparative advantage in these products. Moreover, as China starts importing from Africa it discovers a new potential market for Chinese products. This factor may explain the recent growth of China's exports to Africa. This intensification of the trade relation between China and Africa could potentially be very positive for both partners. In particular, China's benefits from this relationship is twofold. On one hand, China is finding the necessary raw materials to fuel its growth. On the other hand, it is conquering a new export market. In the same way, Africa could benefit in several ways. One documented advantage from this interchange is the technology spillover (see for instance Obstfeld 2009; Pilling 2009). The rest of this paper explores the main factors that may be affecting this trade relationship where we compare the China–Africa trade to African trade with the other main partners.

[†]Considering instead the average share of China in 2000–2009 would put China in the fourth position after the USA, France, and Italy.

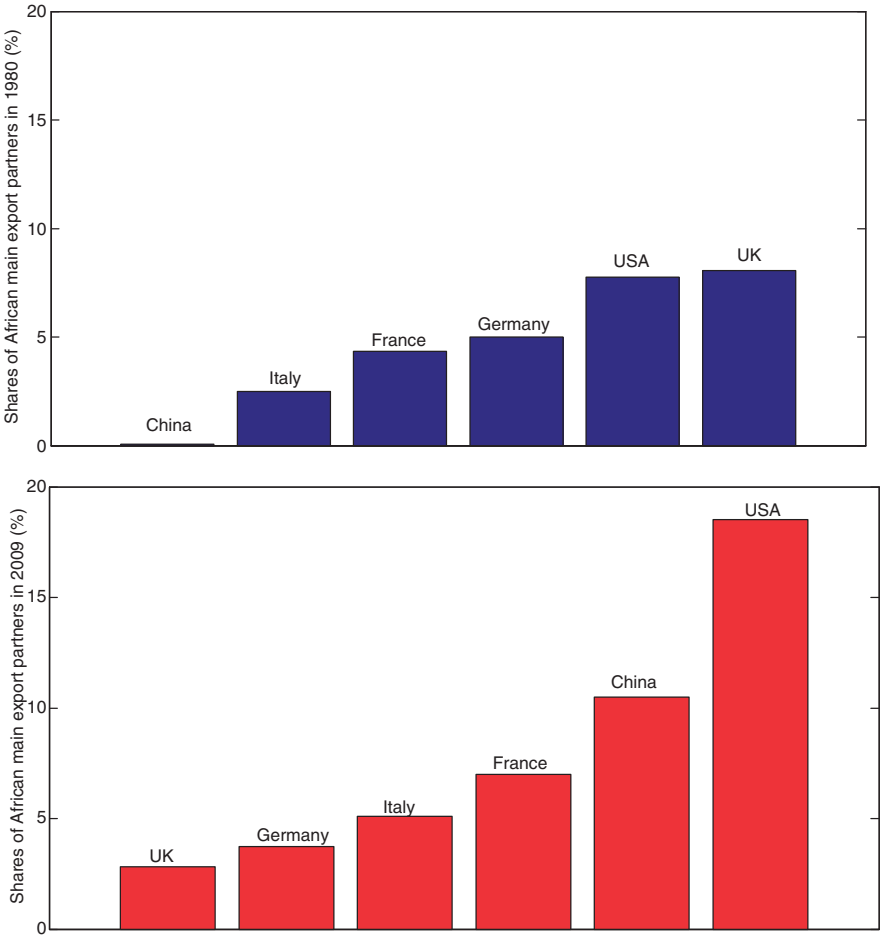

Figure 2. Shares of African main export partners in 1980 and 2009.
Note: The shares are obtained as the ratio of expert values of the main African partners by the value of African total expert to the world. Export shares in 1980 (2009) are plotted on left (right) panel. Sources: IMF, direction of trade and statistics.

3. Methodology

Figures 1–3 above have highlighted several trends and motivate some questions. For instance, why does China import mainly from a few countries, while it exports more widely? What are the specifics of a typical African trade partner of China? How does the search for natural resources affect the choice of China's trade partners? In order to shed light on these questions, we use the gravity model for trade. Specifically, in addition to the standard gravity model variables, we are interested in the links between the quality of China's main African trade partners. In order to place our analysis in a broader perspective we apply the same analysis to other major African trade partners identified in the previous section (France, Germany, the UK, the USA).

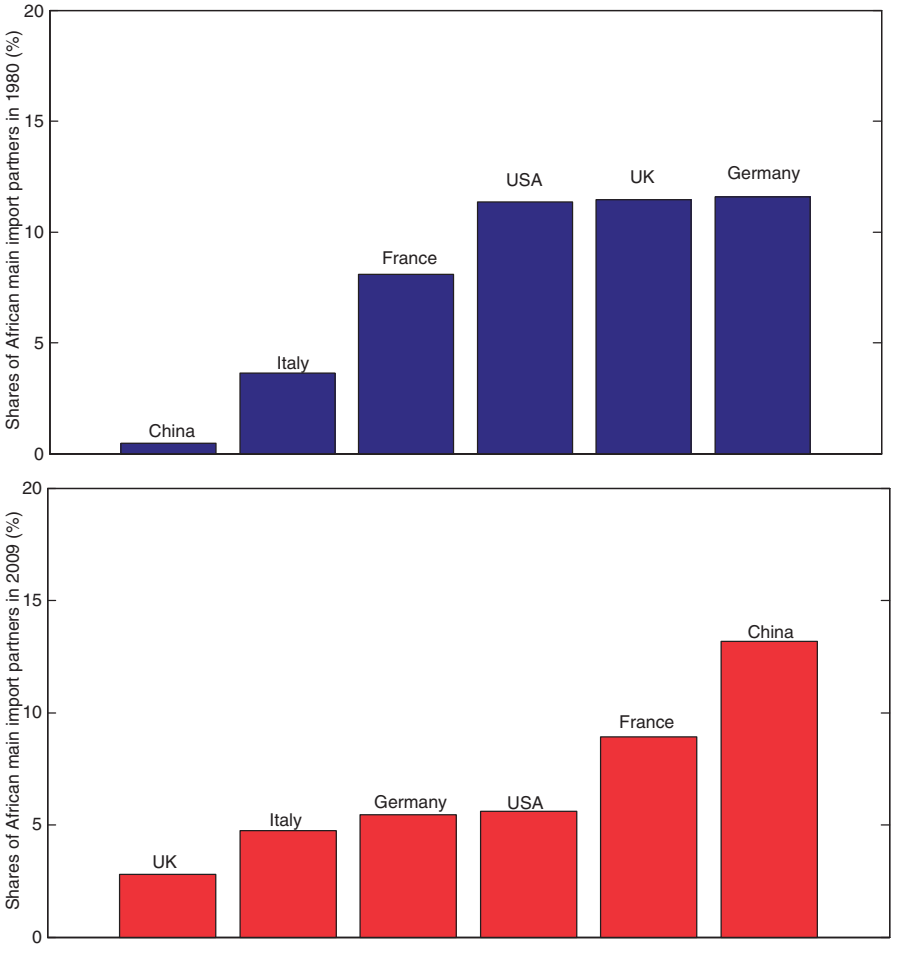

Figure 3. Shares of African main import partners in 1980 and 2009.
Note: The shares are obtained as the ratio of import values of the main African partners by the value of African total expert to the world. Import shares in 1980 (2009) are plotted on left (right) panel. Sources: IMF, direction of trade and statistics.

3.1. *The gravity model*

The gravity model of trade was introduced by Tinbergen (1962). The basic formulation of the model postulates that bilateral trade is positively associated with the size of the countries involved and depends negatively on the distance between them. This idea is summarized in the following equation

$$X_{i,j,t} = A\frac{Y_{i,t}Y_{j,t}}{D_{i,j}} \tag{1}$$

where $X_{i,j,t}$ denotes the value of trade between countries i and j at time t, $Y_{i,t}$ and $Y_{j,t}$ are the value of aggregate GDP capturing the size of the countries i and j, respectively, $D_{i,j}$ is the physical distance between the countries i and j, and A is a

constant parameter. Using different modeling assumptions, a number of studies have provided theoretical foundations for the gravity model for trade; see for instance Anderson (1979), Anderson and van Wincoop (2003), Bergstrand (1985), Chaney (2008), and Eaton and Kortum (2002). The gravity model for trade has also been widely applied in the literature; see Anderson (2011) for an excellent recent review of the literature. Applications on China include Chit (2008) and Yao and Zhang (2003) while an application for China–Africa trade can be found in Biggeri and Sanfilippo (2009).

In this paper, we use a log-linear version of Equation (1) and include additional explanatory variables that are identified in the literature (see for instance Frankel 1997 and Rose 2004)

$$\ln(X_{i,j,t}) = \beta_0 + \beta_1 \ln(D_{i,j}) + \beta_2 \ln(Y_i Y_j / Pop_i Pop_j)_t + \beta_3 \ln(Y_i Y_j)_t + \beta_4 Colony_{i,j} + \beta_5 Landlocked_{i,j} + \beta_6 Lang_{i,j} + \beta_7 re\,ssource_j + \gamma Governance_{j,t} + \phi_t T_t + \varepsilon_{i,j,t} \quad (2)$$

where i denotes one of the following African trade partners, China, France, Germany, the UK, or the USA; and j represents an African country. $Landlocked_j$ is a binary variable that takes the value 1 if an African country is landlocked. Pop is total population, $Y_i Y_j / Pop_i Pop_j$ represents the product of GDP per capita of the countries i and j; $Colony_{i,j}$ is a binary variable that takes the value 1 if i was colonized by j or vice versa, $Lang_{i,j}$ is a binary variable that takes the value 1 if the countries i and j have a common official language, $Re ssource_j$ is a binary variable that takes the value 1 if an African country is abundant in oil and minerals, T_t is the time fixed effects that takes the value 1 at time t and 0 otherwise, $\varepsilon_{i,j,t}$ is the error term, which for the moment, is assumed to well behaved,[2] and finally, $Governance_{j,t}$ is the quality of governance of an African country at time t, where higher values indicate good governance.

In Equation (2) we expect the parameters β_3, β_4, β_6 to be positive while a negative sign is expected for β_1 and β_5. Finally, following the theoretical analysis in Anderson and Marcouiller (2002) we expect the coefficient on governance to have a positive sign. The main intuition is that the governance quality of a country affects the transaction costs involved in economic activities. Ceteris paribus, a country with a low governance will display a high transaction cost and should trade less with others. In the terminology of Anderson and Marcouiller (2002) a country with a low governance quality (or weak institutions) will display an insecurity on trade and this generates a mark-up on traded goods.

3.2. *Data*

We estimate Equation (2) for aggregate trade (separately for exports and imports) between each of the five countries (China, France, Germany, the UK, the USA) and 53 African countries.[3] For this purpose we use yearly data over the period 1996–2009.[4] Data on total exports and imports are in current dollars and are taken from the IMF-DOTS database.[5] We use the US CPI series (2005 = 100) from the World Bank database to convert the trade data in real terms. Data on aggregate GDP and GDP per capita are in constant prices of 2005 dollar. They are obtained from the World Bank database, *WDI* 2011. Data on colony, language, landlocked

and distance are taken from the CEPII distance database. For the distance series, we use the population-weighted great circle distance between large cities of the countries *i* and *j*. The information on African resource abundant countries is derived from Collier and O'Connell (2009).

We use six measures of governance quality provided by Kaufmann et al. (2010): Voice and Accountability, Political Stability and Absence of Violence/Terrorism, Government Effectiveness, Regulatory Quality, Rule of Law, and Control of Corruption. Kaufmann, Kraay, and Mastruzzi (2010) report estimated values for these governance indicators in the range −2.5 to 2.5 in 1996–2009, where higher values indicate better governance outcomes.[6] For every African country and in each year we compute an index of governance as a simple average of the values of the six indicators. Table 1 presents selected sample statistics of the data.

4. Empirical results

We estimate the gravity model for trade (each for import and export) between each of the five countries (China, France, Germany, the UK, and the USA) and the group of 53 African countries. All the regression equations presented in this paper include the constant term and time fixed effects. We use three estimation methods. First, given that the regression equations have a common set of regressors we suspect that the error terms across these equations will be correlated. This presumption is

Table 1. Selected sample statistics.

Variables		Obs	Mean	Std. Dev.	Min	Max
Real African Exports to						
	China	500	12.085	3.231	2.271	19.128
	France	500	13.068	2.476	6.286	17.980
	Germany	500	12.682	2.472	4.913	18.120
	UK	500	12.216	2.808	3.122	18.251
	USA	500	13.382	2.801	6.810	19.690
Real African Imports from						
	China	500	13.672	1.970	7.665	18.172
	France	500	13.962	2.022	5.067	18.108
	Germany	500	13.309	1.818	8.771	18.373
	UK	500	13.058	1.819	7.358	17.572
	USA	499	13.573	1.689	7.541	17.892
Governance						
	General index	500	−0.670	0.625	−2.496	0.837
	Rule of law	500	−0.722	0.671	−2.691	1.053
	Government Effectiveness	500	−0.699	0.632	−2.495	0.807
	Political Stability and Absence of Violence/ Terrorism	500	−0.621	0.935	−3.312	1.144
	Regulatory Quality	500	−0.659	0.670	−2.729	0.906
	Voice and Accountability	500	−0.708	0.720	−2.159	1.048
	Control of Corruption	500	−0.612	0.600	−2.489	1.086

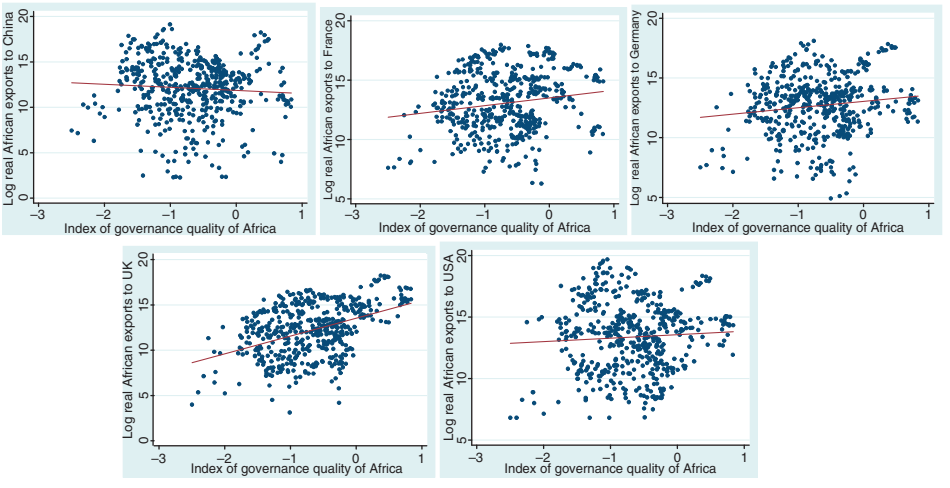

Figure 4. Real African exports and index of governance quality: 1996–2009.

confirmed by the Breusch–Pagan test of independence, which highly rejects the null hypothesis of no correlation among the error terms of the individual gravity equations.[7] As a result, we employ a Seemingly Unrelated Regression (SUR) estimation method, see Zellner and Huang (1962) and computation details in Cameron and Trivedi (2009). This technique performs a joint estimation of the gravity equations for African exports and imports, respectively, and takes into account the correlations among the error terms.[8] Second, we estimate the gravity equations separately with OLS and use robust standard errors to account for possible heteroscedasticity and autocorrelation in the residuals. Third, we estimate the gravity equations separately with the panel data approach.

4.1. *Main results*

To begin with, Figures 4 and 5 present the unconditional correlation between the index of governance quality and real African exports and imports, respectively. The data show that for all the five major trade partners, the improvement of the African governance quality is positively associated with African imports (Figure 5). For African exports, the data display a slightly different picture. In particular, Figure 4 indicates that China is the only partner that presents a negative correlation between the quality of governance and African exports. Moreover, the results for the USA indicate the weakest positive correlation for African imports. In the following lines we employ a number of regression techniques to control for the traditional gravity model regressors.

Our main findings are obtained with the Seemingly Unrelated Regression (SUR) method. Tables 2 and 3 display the estimated results for the gravity model of African exports and imports, respectively. In the first five columns of the tables we report the basic gravity equations for the five countries, respectively. The next five columns of

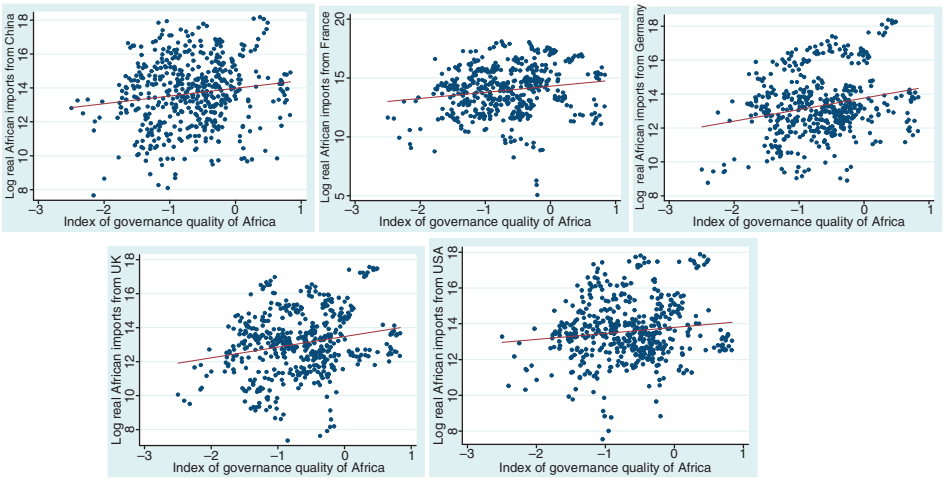

Figure 5. Real African imports and index of governance quality: 1996–2009.

the tables contain the results including the governance quality variable. Here we focus on results with the aggregate measure of governance quality defined above. Tables A1 and A2 in Appendix A report results across the six measures of governance.

The results show that the traditional variables of the gravity model are most statistically significant for African trade with China, France, Germany, the UK, and the USA. For instance, except for China, distance explains significantly and negatively African imports. The impact of distance on African exports, however, is not clear. Aggregate GDP is positive and highly significant for both African exports and imports in all cases. This result is in line with the theory, since the mass of the two countries should be relevant for any dynamics regarding trade. Moreover, our results show that landlocked African countries trade significantly less with the main African trade partners than do their coastal counterparts. Our results also indicate that European countries trade more with their former African colonies than others in the region. In the same vein, speaking the same language boosts African trade with the five countries, although the result is in the opposite direction for the basic gravity equation of African exports to USA. African countries that are resource abundant in oil and minerals also export more to China, Western Europe and the USA while the result is less robust for African imports.

Turning now to our variable of interest, the results show that when an African country improves its governance, China, France, Germany, the UK, and the USA export more to those countries, although the result is not statistically significant for the USA (see Table 2). Moreover, the results reported in Table A2 in Appendix A indicate a positive and statistically significant coefficient on the six governance indicators for African imports. This finding is consistent with the theory developed by Anderson and Marcouiller (2002), which suggests that a good governance quality reduces transactions costs and thus stimulates international trade.

For African exports, the data show that only Germany and the UK import more from African countries that improve the quality of their governance (see Table 2).

Table 2. Gravity on African exports and the index of governance, SUR.

	Basic Gravity Model					Gravity Model with Governance				
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
VARIABLES	China	France	Germany	UK	USA	China	France	Germany	UK	USA
Distance	4.522***	−0.380**	−0.298	0.231	2.247***	5.664***	−0.414***	−0.408**	0.0930	2.073***
	(0.696)	(0.154)	(0.196)	(0.208)	(0.422)	(0.705)	(0.155)	(0.195)	(0.194)	(0.424)
Real GDP	1.371***	1.058***	1.248***	1.192***	1.183***	1.379***	1.057***	1.239***	1.181***	1.179***
	(0.0721)	(0.0500)	(0.0564)	(0.0553)	(0.0620)	(0.0703)	(0.0500)	(0.0560)	(0.0516)	(0.0619)
Real GDP pc	−0.0876	0.327***	−0.0977	0.726***	0.224**	0.282**	0.275***	−0.235***	0.349***	0.311***
	(0.0998)	(0.0631)	(0.0737)	(0.0714)	(0.0872)	(0.119)	(0.0755)	(0.0862)	(0.0789)	(0.104)
Language		0.609***		1.100***	−0.324**		0.572***	0	0.884***	−0.247
		(0.141)		(0.170)	(0.161)		(0.145)	(0)	(0.160)	(0.164)
Colony		0.705***	1.143***	0.364**			0.758***	1.092***	0.498***	
		(0.150)	(0.253)	(0.170)			(0.155)	(0.251)	(0.158)	
Landlocked	−0.393*	−0.939***	−0.454***	−0.399**	−0.157	−0.183	−0.958***	−0.518***	−0.569***	−0.107
	(0.224)	(0.142)	(0.170)	(0.165)	(0.200)	(0.222)	(0.145)	(0.171)	(0.155)	(0.202)
Resource	1.465***	0.649***	0.723***	0.165	1.802***	0.930***	0.702***	0.881***	0.624***	1.687***
	(0.220)	(0.135)	(0.157)	(0.153)	(0.185)	(0.236)	(0.145)	(0.165)	(0.152)	(0.198)
Governance						−0.991***	0.165	0.418***	1.126***	−0.234
						(0.186)	(0.118)	(0.137)	(0.125)	(0.161)
Time dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
R-squared	0.572	0.710	0.590	0.704	0.578	0.593	0.711	0.596	0.741	0.580

Note: Standard errors in parentheses ***$p < 0.01$, **$p < 0.05$, *$p < 0.1$.

Table 3. Gravity for African imports with the index of governance, SUR.

	Basic Gravity Model					Gravity Model with Governance				
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
VARIABLES	China	France	Germany	UK	USA	China	France	Germany	UK	USA
Distance	0.481*	−0.474***	−0.768***	−0.464***	−0.664***	0.173	−0.537***	−0.856***	−0.500***	−0.727***
	(0.270)	(0.100)	(0.0987)	(0.104)	(0.195)	(0.276)	(0.0987)	(0.0945)	(0.103)	(0.196)
Real GDP	0.943***	0.955***	0.963***	0.870***	0.901***	0.943***	0.951***	0.958***	0.869***	0.900***
	(0.0349)	(0.0323)	(0.0326)	(0.0316)	(0.0291)	(0.0335)	(0.0314)	(0.0300)	(0.0310)	(0.0291)
Real GDP pc	−0.348***	−0.0830**	−0.0850**	0.0152	−0.0196	−0.573***	−0.240***	−0.317***	−0.105**	−0.0591
	(0.0479)	(0.0404)	(0.0428)	(0.0413)	(0.0407)		(0.0470)	(0.0465)	(0.0479)	(0.0486)
Language		1.052***		0.186**	0.0475		1.113***		0.208**	0.0791
		(0.0937)		(0.0870)	(0.0779)		(0.0954)		(0.0874)	(0.0792)
Colony		1.093***	0.705***	0.604***			1.025***	0.639***	0.600***	
		(0.0998)	(0.135)	(0.0844)			(0.102)	(0.130)	(0.0838)	
Landlocked	−1.344***	−1.043***	−0.722***	−1.039***	−0.656***	−1.474***	−1.133***	−0.842***	−1.109***	−0.680***
	(0.108)	(0.0911)	(0.0988)	(0.0952)	(0.0937)	(0.105)	(0.0897)	(0.0920)	(0.0941)	(0.0946)
Resource	−0.0996	0.0224	−0.112	0.0851	0.162*	0.198*	0.214**	0.164*	0.228**	0.207**
	(0.104)	(0.0867)	(0.0910)	(0.0881)	(0.0863)	(0.109)	(0.0904)	(0.0888)	(0.0919)	(0.0926)
Governance						0.635***	0.457***	0.691***	0.355***	0.123
						(0.0874)	(0.0734)	(0.0739)	(0.0760)	(0.0757)
Time dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
R-squared	0.727	0.823	0.741	0.760	0.742	0.751	0.836	0.780	0.771	0.744

Note: Standard errors in parentheses ***$p < 0.01$, **$p < 0.05$, *$p < 0.1$.

In particular, the results show that the two European countries import more from African countries in times when their governance issues are getting better. Explicitly, the results in Table A1 in Appendix A indicate that Germany and the UK have significantly imported more from African countries that are more politically stable, are less corrupted, have a better rule of law and so on. The same finding holds true for France but the coefficient on the index of governance is not statistically significant. Going through the results for France across the six governance indicators reported in Table A1 in Appendix A, we observe that only the indicator on regulatory quality is (barely) statistically significant for African exports.

For China, the results show that it imports more from African countries with a lower governance quality (see Table 2). In particular, the results indicate that China imports more from African countries with corrupt governments, with less rule of law, with less accountability and with less regulation (see detailed results in Table A1). These results are supporting the widespread belief that China is deliberately pursuing tighter economic relations with those countries that are isolated by the rest of world. The USA displays a similar result to China but the coefficients are not statistically significant for the index of governance. Our findings thus suggest that the USA and France do not statistically import more from African countries with better governance. Moreover, we find that Germany and the UK are the only countries studied in this paper that trade more with African countries that improve the quality of their governance. Finally, our results show that, in line with the other main African trade partners, China exports more to African countries with a better quality of governance. On the contrary, China is ready to import more from African countries that fail to keep their governance in order.

4.2. *Results with alternative estimation methods*

In order to check the robustness of the results reported in the previous section, we estimate separately the gravity equations for trade between each of the five countries and the set of African countries. For this purpose we use two different estimation methods. First, we employ the OLS estimation method and adjust the standard errors for potential heteroscedasticity and autocorrelation. Second, we use the panel data approach where we use the random effects method given that many of our regressors barely vary over time. Tables 4–7 display estimated results of our gravity model for African exports and imports with OLS and the panel data method, respectively. In the first five columns of the tables we report the basic gravity equations for the five countries. The next five columns of the tables contain the results including the governance quality variable. We focus on results with the aggregate measure of governance quality. Tables B1, B2, C1 and C2, respectively in Appendices B and C report results across the six measures of governance.

The results are broadly in line with our earlier findings. In particular, the traditional regressors of the gravity model for trade present the expected signs where the results are more robust for African imports. Moreover, African imports are positively associated with the increase in governance quality. Finally, China is consistently the only partner where a negative and significant relationship is found

Table 4. Gravity on African exports and the index of governance, OLS.

	Basic Gravity Model					Gravity Model with Governance				
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
VARIABLES	China	France	Germany	UK	USA	China	France	Germany	UK	USA
Distance	4.303***	0.0361	0.0413	0.276	2.112***	5.331***	0.0137	−0.0274	0.296*	2.004***
	(0.632)	(0.136)	(0.161)	(0.179)	(0.475)	(0.628)	(0.135)	(0.165)	(0.160)	(0.466)
Real GDP	1.369***	1.133***	1.274***	1.218***	1.181***	1.376***	1.131***	1.270***	1.221***	1.177***
	(0.0790)	(0.0469)	(0.0636)	(0.0528)	(0.0562)	(0.0789)	(0.0469)	(0.0634)	(0.0530)	(0.0558)
Real GDP pc	−0.0935	0.300***	−0.111	0.734***	0.228**	0.265**	0.254***	−0.241**	0.366***	0.319***
	(0.114)	(0.0615)	(0.0851)	(0.0615)	(0.0907)	(0.120)	(0.0852)	(0.108)	(0.0913)	(0.115)
Language		0.582***		1.571***	−0.205		0.632***		1.254***	−0.133
		(0.168)		(0.180)	(0.200)		(0.192)		(0.191)	(0.226)
Colony		1.124***	0.915***	−0.0974			1.069***	0.876***	0.0191	
		(0.171)	(0.200)	(0.173)			(0.187)	(0.224)	(0.154)	
Landlocked	−0.396	−0.921***	−0.477***	−0.449**	−0.170	−0.192	−0.950***	−0.543***	−0.607***	−0.124
	(0.257)	(0.161)	(0.174)	(0.179)	(0.209)	(0.234)	(0.157)	(0.176)	(0.162)	(0.194)
Resource	1.488***	0.697***	0.773***	0.119	1.791***	0.976***	0.757***	0.926***	0.578***	1.674***
	(0.226)	(0.132)	(0.169)	(0.135)	(0.214)	(0.240)	(0.168)	(0.194)	(0.178)	(0.247)
Governance						−0.967***	0.127	0.391**	1.086***	−0.256
						(0.201)	(0.176)	(0.178)	(0.217)	(0.249)
Time dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
R-squared	0.572	0.715	0.593	0.707	0.579	0.594	0.716	0.599	0.745	0.581

Note: Robust standard errors in parentheses ***$p < 0.01$, **$p < 0.05$, *$p < 0.1$.

Table 5. Gravity for African imports with the index of governance, OLS.

	Basic Gravity Model					Gravity Model with Governance				
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
VARIABLES	China	France	Germany	UK	USA	China	France	Germany	UK	USA
Distance	1.529***	−0.396***	−0.760***	−0.616***	−1.296***	0.910**	−0.471***	−0.884***	−0.610***	−1.257***
	(0.393)	(0.0794)	(0.102)	(0.114)	(0.206)	(0.367)	(0.0786)	(0.0959)	(0.119)	(0.204)
Real GDP	0.959***	0.967***	0.959***	0.869***	0.890***	0.955***	0.961***	0.950***	0.870***	0.892***
	(0.0380)	(0.0320)	(0.0418)	(0.0354)	(0.0340)	(0.0368)	(0.0315)	(0.0400)	(0.0357)	(0.0343)
Real GDP pc	−0.320***	−0.0702*	−0.0821	0.0185	0.00980	−0.535***	−0.223***	−0.316***	−0.102*	−0.0234
	(0.0489)	(0.0377)	(0.0516)	(0.0352)	(0.0403)	(0.0584)	(0.0474)	(0.0627)	(0.0548)	(0.0549)
Language		0.809***		0.355***	0.208**		0.977***		0.251**	0.182*
		(0.142)		(0.104)	(0.0924)		(0.156)		(0.116)	(0.0983)
Colony		1.410***	0.304***	0.552***			1.224***	0.233**	0.591***	
		(0.124)	(0.0704)	(0.103)			(0.138)	(0.0942)	(0.102)	
Landlocked	−1.330***	−1.013***	−0.679***	−1.036***	−0.613***	−1.452***	−1.110***	−0.797***	−1.088***	−0.630***
	(0.111)	(0.0957)	(0.0927)	(0.0979)	(0.0918)	(0.109)	(0.0903)	(0.0937)	(0.0925)	(0.0889)
Resource	−0.209**	−0.0221	−0.106	0.0697	0.0915	0.0995	0.178*	0.171	0.220**	0.134
	(0.101)	(0.0846)	(0.107)	(0.0776)	(0.0887)	(0.117)	(0.0997)	(0.120)	(0.0983)	(0.0990)
Governance						0.582***	0.424***	0.705***	0.356***	0.0936
						(0.0974)	(0.106)	(0.112)	(0.119)	(0.0990)
Time dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
R-squared	0.732	0.826	0.745	0.762	0.747	0.754	0.837	0.784	0.771	0.747

Note: Robust standard errors in parentheses ***$p < 0.01$, **$p < 0.05$, *$p < 0.1$.

Table 6. Gravity on African exports and the index of governance, panel data.

	Basic Gravity Model					Gravity Model with Governance				
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
VARIABLES	China	France	Germany	UK	USA	China	France	Germany	UK	USA
Distance	3.993**	0.0224	0.167	0.344	2.270*	4.587***	0.0337	0.158	0.348	2.203*
	(1.734)	(0.458)	(0.554)	(0.469)	(1.237)	(1.617)	(0.458)	(0.562)	(0.462)	(1.164)
Real GDP	1.567***	1.154***	1.366***	1.260***	1.242***	1.566***	1.155***	1.366***	1.261***	1.238***
	(0.167)	(0.122)	(0.136)	(0.107)	(0.153)	(0.153)	(0.122)	(0.138)	(0.106)	(0.144)
Real GDP pc	−0.164	0.368**	−0.165	0.755***	0.245	0.0157	0.386**	−0.180	0.530***	0.299
	(0.229)	(0.152)	(0.175)	(0.140)	(0.200)	(0.235)	(0.159)	(0.186)	(0.150)	(0.200)
Language		0.549		1.598***	−0.214		0.527	1.141	1.409***	−0.166
		(0.508)		(0.450)	(0.509)		(0.510)	(0.848)	(0.445)	(0.480)
Colony		1.272**	1.143	−0.163			1.297**		−0.0941	
		(0.539)	(0.838)	(0.444)			(0.541)		(0.438)	
Landlocked	−0.365	−0.807**	−0.527	−0.360	0.136	−0.257	−0.793**	−0.536	−0.479	0.167
	(0.549)	(0.390)	(0.452)	(0.341)	(0.539)	(0.505)	(0.391)	(0.459)	(0.338)	(0.508)
Resource	1.694***	0.669*	1.061**	0.262	1.861***	1.425***	0.643*	1.080**	0.546*	1.788***
	(0.548)	(0.379)	(0.422)	(0.325)	(0.505)	(0.523)	(0.384)	(0.432)	(0.329)	(0.481)
Governance						−0.530*	−0.0614	0.0497	0.704***	−0.181
						(0.293)	(0.153)	(0.193)	(0.186)	(0.185)
Time dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
R-squared	0.569	0.713	0.589	0.706	0.576	0.586	0.713	0.591	0.739	0.577

Note: Standard errors in parentheses ***$p < 0.01$, **$p < 0.05$, *$p < 0.1$.

Table 7. Gravity for African imports with the index of governance, panel data.

	Basic Gravity Model					Gravity Model with Governance				
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
VARIABLES	China	France	Germany	UK	USA	China	France	Germany	UK	USA
Distance	1.675*	−0.414*	−0.683**	−0.573	−1.191**	1.341	−0.453*	−0.723**	−0.573	−1.111*
	(0.960)	(0.248)	(0.313)	(0.357)	(0.565)	(0.958)	(0.250)	(0.305)	(0.361)	(0.571)
Real GDP	1.064***	1.002***	1.045***	0.990***	0.924***	1.058***	0.999***	1.040***	0.990***	0.925***
	(0.0904)	(0.0678)	(0.0761)	(0.0790)	(0.0709)	(0.0894)	(0.0680)	(0.0742)	(0.0799)	(0.0714)
Real GDP pc	−0.397***	−0.0866	0.0583	0.0236	−0.114	−0.494***	−0.156*	−0.00599	−0.0148	−0.178*
	(0.117)	(0.0873)	(0.0958)	(0.0995)	(0.0979)	(0.121)	(0.0946)	(0.0979)	(0.106)	(0.105)
Language		0.864***		0.465	0.262		0.944***		0.432	0.212
		(0.274)		(0.343)	(0.231)		(0.278)		(0.348)	(0.235)
Colony		1.462***	0.366	0.423			1.372***	0.355	0.434	
		(0.292)	(0.474)	(0.337)			(0.296)	(0.461)	(0.341)	
Landlocked	−1.237***	−1.050***	−0.480*	−0.949***	−0.606**	−1.300***	−1.100***	−0.519**	−0.969***	−0.647***
	(0.305)	(0.212)	(0.255)	(0.258)	(0.247)	(0.302)	(0.214)	(0.249)	(0.262)	(0.250)
Resource	−0.0973	0.0109	−0.117	0.148	0.272	0.0510	0.105	−0.0422	0.198	0.355
	(0.301)	(0.207)	(0.238)	(0.245)	(0.232)	(0.303)	(0.213)	(0.234)	(0.251)	(0.239)
Governance						0.305***	0.215*	0.194**	0.128	0.189*
						(0.114)	(0.110)	(0.0948)	(0.105)	(0.113)
Time dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
R-squared	0.729	0.825	0.736	0.758	0.740	0.745	0.833	0.754	0.764	0.741

Note: Standard errors in parentheses ***$p < 0.01$, **$p < 0.05$, *$p < 0.1$.

between African exports and the quality of governance. Note, however, that the results with the panel data method are less statistically significant.

5. Conclusions

This paper has analyzed the dynamics and determinants of African trade over the last few decades. We have shown that China has not only drastically increased its trade level with African countries, but also become a major African partner. This position is quite closely reciprocated. Africa is a very big market that China has entered with its products. In the same time span, China has increased its imports from African counties at an even faster pace. Most of these imports are raw materials.

We estimate a number of gravity equations for African trade. In particular, we regress the China–Africa trade data on the traditional gravity variables, augmented with a set of indicators capturing the quality of governance of African countries. As a benchmark, we use similar regressions to examine the determinants of trade between African countries and their other main trading partners including three European countries (France, Germany, and the UK) and the USA. We find that, next to the standard gravity variables, governance plays a significant role in the dynamics of African trade. In particular, we find that, ceteris paribus, China, France, Germany, the UK, and the USA export significantly more to African countries with a better quality of governance. Imports present, however, a different picture. China covers the unique role of importing more from African countries that display a bad governance (a trend that is not consistently present for the other major African trade partners). While our analysis does not show the final objective of the Chinese strategy, it highlights the issue clearly.

The European Union is the major trade partner to reward better governance. This leaves out countries that do not meet the EU's governance requirements. China is now importing more from these countries, and creating a market for these countries to export to. The economic literature has traced in the past a positive correlation between trade and GDP growth. If this connection is assumed in existence, then China is playing a key role in the future development of these 'left out' countries.

There is a need to extend our analysis to a larger set of countries. For instance, are the determinants of China–Africa trade significantly different from those of African trade with other emerging market economies? In the same vein, are the results different from trade between developed countries and developing countries in general? These questions are on our research agenda.

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Notes

1. However, China's trade (imports plus exports) with Africa only accounts for about 6% of Africa GDP (in 2007). Moreover, Africa only accounts for less than 5% of China's total trade with the world.
2. In the empirical application we discuss possible departures from this assumption.
3. Algeria, Angola, Benin, Botswana, Burundi, Cameroon, Cape Verde, Central African Republic, Chad, Comoros, Republic of Congo, Djibouti, Egypt, Equatorial Guinea, Ethiopia, Gabon, Gambia, Ghana, Guinea, Guinea Bissau, Côte d'Ivoire, Kenya, Liberia, Libya, Madagascar, Malawi, Mali, Mauritania, Mauritius, Morocco, Mozambique, Namibia, Niger, Nigeria, Rwanda, Sao Tome and Principe, Senegal, Seychelles, Sierra Leone, Somalia, South Africa, Sudan, Tanzania, Togo, Tunisia, Uganda, Burkina Faso, Congo Dem. Rep., Zambia, Zimbabwe, Lesotho, Swaziland, and Eritrea.
4. This period is chosen according to the availability of data on the governance indicator. Moreover, we drop observations for 1997, 1999 and 2002 because of missing data on all governance indicators. In addition, data on government indicators are missing for a number countries, especially for 1996.
5. The DOTS data was accessed from the Katholieke Universiteit Leuven: Leuven Centre for Global Governance Studies. Interdisciplinary database on international political, economic and Legal development. Financed by Hercules Foundation. Leuven, September 2010. www.globalgovernancestudies.eu
6. The following is a short summary of the governance variables as from Kaufmann, Kraay, and Mastruzzi (2010): (1) Voice and Accountability – broadly defined as the voice that each citizen has in the making of the government; (2) Political Stability and Absence of Violence – the stability of the government and the perceived danger that this will be overthrown violently; (3) Government Effectiveness – looking at the quality of the government policies; and their effectiveness and credibility; (4) Regulatory Quality – the ability of the government to pass a regulatory framework to regulate private property; (5) Rule of Law – summarizing the perceptions on the credibility and enforcement of contracts; and (6) Control of Corruption – looking at the perception of government power yielded to defend private interests and the extent of private elites.
7. The results of the tests are not reported here for space consideration but can be obtained upon request.
8. SUR uses the feasible, generalized least-squares algorithm.

References

Anderson, J. 1979. A theoretical foundation for the gravity equation. *American Economic Review* 69, no. 1: 106–16.

Anderson, J. 2011. The gravity model. *Annual Review of Economics* 3: 133–60.

Anderson, J.E., and D. Marcouiller. 2002. Insecurity and the pattern of trade: An empirical investigation. *Review of Economics and Statistics* 84: 342–52.

Anderson, J., and E. van Wincoop. 2003. Gravity with gravitas: A solution to the border puzzle. *American Economic Review* 93, no. 1: 170–92.

Bergstrand, J.H. 1985. The gravity equation in international trade: Some microeconomic foundations and empirical evidence. *The Review of Economics and Statistics* 67, no. 3: 474–81.

Biggeri, M., and M. Sanfilippo. 2009. Understanding China's move into Africa: An empirical analysis. *Journal of Chinese Economic and Business Studies* 7, no. 1: 31–54.

Cameron, A.C., and P.K. Trivedi. 2009. *Microeconometrics Using Stata*. Texas: Stata Press.

Chaney, T. 2008. Distorted gravity: The intensive and extensive margins of international trade. *American Economic Review* 98, no. 4: 1707–21.

Chit, M.M. 2008. Exchange rate volatility and exports: Evidence from the ASEAN-China free trade area. *Journal of Chinese Economic and Business Studies* 6, no. 3: 261–77.

Collier, P., and S.A. O'Connell. 2009. Opportunities, episodes, and syndromes. In *The political economy of economic growth in Africa, 1960–2000*, eds. B.J. Ndulu, S.A. O'Connell, R.H. Bates, P. Collier and C.C. Soludo, Vol. 1. Cambridge: Cambridge University Press.

Dumludag, D., E. Saridogan, and S. Kurt. 2007. Determinants of foreign direct investment: An institutionalist approach. *EHES*.

Eaton, J., and S. Kortum. 2002. Technology, geography, and trade. *Econometrica* 70, no. 5: 1741–79.

Frankel, J.A. 1997. *Regional trading blocs in the world economic system*. Washington, DC: Institute for International Economics.

Kaufmann, D., A. Kraay, and M. Mastruzzi. 2010. Governance matters viii: aggregate and individual governance indicators 1996–2009. Policy Research Working Paper Series 4978, The World Bank.

Obstfeld, M. 2009. International finance and growth in developing countries: What have we learned? *NBER Working Paper* 14691.

Pilling, D. 2009. Africa is getting a better deal from Beijing. *Financial Times*.

Rose, A.K. 2004. Do we really know that the WTO increases trade? *American Economic Review* 94, no. 1: 98–114.

Tinbergen, J. 1962. Shaping the world economy: Suggestions for an international economic policy. *The first use of a gravity model to analyze international trade flows*. New York: The Twentieth Century Fund.

Yao, S., and Z. Zhang. 2003. Openness and economic performance: A comparative study of china and the Asian NIEs. *Journal of Chinese Economic and Business Studies* 1, no. 1: 71–95.

Zafar, A. 2007. *The growing relationship between China and Sub-Saharan Africa: Macroeconomic, trade, investment, and aid links*. Oxford University Press on behalf of the International Bank for Reconstruction and Development. The World Bank.

Zellner, A., and D.S. Huang. 1962. Further properties of efficient estimators for seemingly unrelated regression equations. *International Economic Review* 3: 300–13.

Appendix A. SUR and the six governance indicators

Table A1. Gravity for African exports with the six governance indicators.

VARIABLES	China	France	Germany	UK	USA	China	France	Germany	UK	USA
	Regulatory Quality					Control of Corruption				
Distance	5.642***	−0.403***	−0.336*	0.150	2.118***	5.086***	−0.386**	−0.344*	0.243	2.066***
	(0.718)	(0.155)	(0.196)	(0.197)	(0.428)	(0.676)	(0.154)	(0.193)	(0.199)	(0.421)
Real GDP	1.460***	1.040***	1.221***	1.101***	1.192***	1.350***	1.060***	1.252***	1.210***	1.169***
	(0.0729)	(0.0513)	(0.0577)	(0.0534)	(0.0631)	(0.0698)	(0.0501)	(0.0560)	(0.0531)	(0.0617)
Real GDP pc	0.150	0.283***	−0.159**	0.508***	0.260***	0.252**	0.310***	−0.218***	0.448***	0.362***
	(0.109)	(0.0686)	(0.0795)	(0.0734)	(0.0956)	(0.112)	(0.0736)	(0.0839)	(0.0790)	(0.100)
Language		0.600***		1.030***	−0.306*		0.570***		0.875***	−0.210
		(0.143)		(0.161)	(0.162)		(0.145)		(0.166)	(0.163)
Colony		0.722***	1.128***	0.441***			0.751***	1.038***	0.505***	
		(0.154)	(0.252)	(0.161)			(0.155)	(0.252)	(0.162)	
Landlocked	−0.173	−0.978***	−0.511***	−0.604***	−0.115	−0.197	−0.943***	−0.510***	−0.529***	−0.0859
	(0.224)	(0.145)	(0.172)	(0.158)	(0.204)	(0.219)	(0.145)	(0.170)	(0.159)	(0.201)
Resource	1.113***	0.693***	0.788***	0.409***	1.754***	1.011***	0.664***	0.866***	0.516***	1.626***
	(0.227)	(0.139)	(0.160)	(0.149)	(0.191)	(0.225)	(0.144)	(0.163)	(0.155)	(0.194)
Governance	−0.808***	0.179*	0.245**	0.859***	−0.113	−1.068***	0.0680	0.405***	0.915***	−0.432***
	(0.167)	(0.103)	(0.121)	(0.111)	(0.142)	(0.179)	(0.118)	(0.137)	(0.129)	(0.161)
Time dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
R-squared	0.590	0.712	0.593	0.734	0.579	0.599	0.710	0.597	0.728	0.585
	Political Stability and Absence of Violence/Terrorism					Government Effectiveness				
Distance	4.688***	−0.398***	−0.328*	0.177	2.117***	5.427***	−0.416***	−0.398**	0.177	2.038***
	(0.720)	(0.154)	(0.196)	(0.196)	(0.423)	(0.686)	(0.154)	(0.193)	(0.195)	(0.422)
Real GDP	1.341***	1.073***	1.276***	1.307***	1.155***	1.475***	1.040***	1.198***	1.084***	1.209***
	(0.0751)	(0.0519)	(0.0585)	(0.0544)	(0.0652)	(0.0720)	(0.0510)	(0.0575)	(0.0530)	(0.0631)
Real GDP pc	0.0135	0.278***	−0.191**	0.353***	0.307***	0.292**	0.276***	−0.241***	0.361***	0.344***
	(0.126)	(0.0777)	(0.0895)	(0.0823)	(0.106)	(0.116)	(0.0751)	(0.0856)	(0.0793)	(0.103)

Language		0.575***		0.956***	−0.276*		0.579***		0.784***	−0.179
		(0.144)		(0.160)	(0.162)		(0.145)		(0.164)	(0.166)
Colony		0.737***	1.093***	0.471***			0.738***	1.053***	0.531***	
		(0.152)	(0.252)	(0.159)			(0.153)	(0.252)	(0.159)	
Landlocked	−0.359	−0.950***	−0.477***	−0.498***	−0.126	−0.178	−0.961***	−0.519***	−0.551***	−0.101
	(0.225)	(0.143)	(0.171)	(0.156)	(0.201)	(0.220)	(0.144)	(0.170)	(0.156)	(0.201)
Resource	1.371***	0.679***	0.793***	0.462***	1.727***	0.940***	0.702***	0.889***	0.616***	1.646***
	(0.232)	(0.141)	(0.161)	(0.149)	(0.191)	(0.230)	(0.145)	(0.164)	(0.153)	(0.197)
Governance	−0.175	0.0946	0.171*	0.678***	−0.140	−1.098***	0.172	0.461***	1.145***	−0.351**
	(0.129)	(0.0794)	(0.0934)	(0.0854)	(0.108)	(0.188)	(0.121)	(0.142)	(0.132)	(0.169)
Time dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
R-squared	0.573	0.711	0.593	0.734	0.580	0.598	0.711	0.597	0.738	0.583
			Rule of Law					Voice and Accountability		
Distance	5.003***	−0.381**	−0.314	0.347*	2.051***	6.183***	−0.398**	−0.575***	−0.189	2.202***
	(0.681)	(0.153)	(0.193)	(0.196)	(0.426)	(0.736)	(0.164)	(0.207)	(0.206)	(0.424)
Real GDP	1.383***	1.058***	1.243***	1.196***	1.181***	1.384***	1.061***	1.225***	1.158***	1.183***
	(0.0702)	(0.0499)	(0.0559)	(0.0518)	(0.0618)	(0.0702)	(0.0504)	(0.0563)	(0.0534)	(0.0620)
Real GDP pc	0.280**	0.264***	−0.249***	0.336***	0.326***	0.151	0.309***	−0.170**	0.582***	0.217**
	(0.118)	(0.0772)	(0.0882)	(0.0813)	(0.107)	(0.106)	(0.0665)	(0.0769)	(0.0721)	(0.0916)
Language		0.595***		0.906***	−0.218		0.567***		0.999***	−0.340**
		(0.144)		(0.162)	(0.165)		(0.143)		(0.165)	(0.164)
Colony		0.729***	1.115***	0.371**			0.799***	1.107***	0.474***	
		(0.151)	(0.251)	(0.159)			(0.157)	(0.251)	(0.164)	
Landlocked	−0.152	−0.978***	−0.551***	−0.628***	−0.0958	−0.263	−0.932***	−0.463***	−0.421***	−0.153
	(0.222)	(0.145)	(0.172)	(0.157)	(0.204)	(0.219)	(0.143)	(0.169)	(0.159)	(0.201)
Resource	0.953***	0.728***	0.919***	0.683***	1.660***	0.851***	0.681***	0.874***	0.482***	1.820***
	(0.233)	(0.148)	(0.168)	(0.156)	(0.202)	(0.241)	(0.143)	(0.164)	(0.155)	(0.196)
Governance	−0.933***	0.169	0.402***	1.029***	−0.249	−0.831***	0.0917	0.364***	0.705***	0.0465
	(0.173)	(0.112)	(0.130)	(0.121)	(0.156)	(0.152)	(0.0964)	(0.113)	(0.104)	(0.126)
Time dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
R-squared	0.595	0.711	0.598	0.740	0.581	0.594	0.711	0.594	0.725	0.578

Note: Standard errors in parentheses ***$p < 0.01$, **$p < 0.05$, *$p < 0.1$.

Table A2. Gravity for African imports with the six governance indicators.

VARIABLES	China	France	Germany	UK	USA	China	France	Germany	UK	USA
	Regulatory Quality					Control of Corruption				
Distance	0.131	−0.527***	−0.804***	−0.493***	−0.719***	0.392	−0.490***	−0.788***	−0.499***	−0.736***
	(0.278)	(0.0984)	(0.0966)	(0.103)	(0.197)	(0.270)	(0.0998)	(0.0942)	(0.104)	(0.195)
Real GDP	0.890***	0.909***	0.916***	0.835***	0.889***	0.953***	0.959***	0.974***	0.870***	0.899***
	(0.0347)	(0.0321)	(0.0319)	(0.0315)	(0.0296)	(0.0343)	(0.0321)	(0.0306)	(0.0317)	(0.0292)
Real GDP pc	−0.493***	−0.189***	−0.202***	−0.0732*	−0.0482	−0.476***	−0.155***	−0.267***	−0.00468	−0.0126
	(0.0513)	(0.0426)	(0.0443)	(0.0437)	(0.0446)	(0.0543)	(0.0469)	(0.0461)	(0.0476)	(0.0472)
Language		1.097***		0.196**	0.0648		1.075***	0	0.246***	0.0883
		(0.0933)		(0.0864)	(0.0781)		(0.0965)	(0)	(0.0877)	(0.0791)
Colony		1.012***	0.675***	0.611***			1.063***	0.562***	0.582***	
		(0.101)	(0.134)	(0.0836)			(0.103)	(0.129)	(0.0837)	
Landlocked	−1.484***	−1.153***	−0.833***	−1.127***	−0.684***	−1.420***	−1.087***	−0.814***	−1.058***	−0.654***
	(0.106)	(0.0900)	(0.0957)	(0.0941)	(0.0953)	(0.107)	(0.0919)	(0.0934)	(0.0959)	(0.0945)
Resource	0.0905	0.143*	0.0165	0.182**	0.191**	0.0628	0.112	0.109	0.104	0.149
	(0.105)	(0.0864)	(0.0888)	(0.0881)	(0.0890)	(0.108)	(0.0919)	(0.0896)	(0.0930)	(0.0914)
Governance	0.530***	0.412***	0.463***	0.347***	0.121*	0.416***	0.236***	0.606***	0.0691	−0.0148
	(0.0784)	(0.0642)	(0.0676)	(0.0662)	(0.0663)	(0.0876)	(0.0752)	(0.0753)	(0.0780)	(0.0760)
Time dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
R-squared	0.747	0.836	0.763	0.773	0.744	0.738	0.827	0.772	0.761	0.743
	Political Stability and Absence of Violence/Terrorism					Government Effectiveness				
Distance	0.233	−0.495***	−0.806***	−0.481***	−0.680***	0.340	−0.505***	−0.838***	−0.495***	−0.729***
	(0.274)	(0.0993)	(0.0965)	(0.103)	(0.195)	(0.274)	(0.0993)	(0.0929)	(0.104)	(0.196)
Real GDP	1.015***	0.997***	1.027***	0.918***	0.921***	0.898***	0.923***	0.893***	0.845***	0.893***
	(0.0351)	(0.0329)	(0.0324)	(0.0322)	(0.0306)	(0.0349)	(0.0324)	(0.0306)	(0.0320)	(0.0297)
Real GDP pc	−0.579***	−0.217***	−0.286***	−0.133***	−0.0812	−0.524***	−0.199***	−0.319***	−0.0748	−0.0443
	(0.0576)	(0.0489)	(0.0499)	(0.0491)	(0.0497)	(0.0556)	(0.0474)	(0.0459)	(0.0483)	(0.0485)

Language		1.091***	0	0.183**	0.0514		1.076***	0	0.217**	0.0895
		(0.0954)	(0)	(0.0868)	(0.0783)		(0.0962)	(0)	(0.0891)	(0.0805)
Colony		1.061***	0.719***	0.608***			1.073***	0.549***	0.598***	
		(0.101)	(0.133)	(0.0838)			(0.102)	(0.128)	(0.0842)	
Landlocked	−1.423***	−1.088***	−0.787***	−1.086***	−0.676***	−1.444***	−1.107***	−0.833***	−1.093***	−0.673***
	(0.105)	(0.0901)	(0.0949)	(0.0931)	(0.0939)	(0.106)	(0.0908)	(0.0911)	(0.0948)	(0.0945)
Resource	0.103	0.130	0.0415	0.200**	0.209**	0.124	0.162*	0.168*	0.191**	0.188**
	(0.105)	(0.0887)	(0.0896)	(0.0887)	(0.0893)	(0.109)	(0.0915)	(0.0880)	(0.0928)	(0.0925)
Governance	0.406***	0.240***	0.367***	0.269***	0.113**	0.533***	0.360***	0.737***	0.281***	0.0829
	(0.0594)	(0.0499)	(0.0520)	(0.0510)	(0.0506)	(0.0905)	(0.0765)	(0.0760)	(0.0803)	(0.0794)
Time dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
R-squared	0.748	0.831	0.764	0.773	0.745	0.743	0.831	0.783	0.766	0.744
			Rule of Law					Voice and Accountability		
Distance	0.368	−0.462***	−0.770***	−0.478***	−0.734***	0.123	−0.701***	−0.979***	−0.535***	−0.736***
	(0.267)	(0.0981)	(0.0943)	(0.104)	(0.196)	(0.291)	(0.103)	(0.101)	(0.106)	(0.194)
Real GDP	0.939***	0.956***	0.957***	0.867***	0.899***	0.942***	0.930***	0.947***	0.866***	0.900***
	(0.0332)	(0.0313)	(0.0301)	(0.0311)	(0.0291)	(0.0342)	(0.0313)	(0.0307)	(0.0311)	(0.0290)
Real GDP pc	−0.584***	−0.250***	−0.334***	−0.114**	−0.0487	−0.451***	−0.174***	−0.189***	−0.0398	−0.0432
	(0.0554)	(0.0481)	(0.0476)	(0.0491)	(0.0499)	(0.0507)	(0.0409)	(0.0422)	(0.0426)	(0.0427)
Language		1.098***	0	0.206**	0.0955		1.125***	0	0.211**	0.0670
		(0.0948)	(0)	(0.0878)	(0.0794)		(0.0935)	(0)	(0.0867)	(0.0790)
Colony		1.071***	0.620***	0.602***			0.959***	0.693***	0.600***	
		(0.0998)	(0.131)	(0.0841)			(0.103)	(0.131)	(0.0837)	
Landlocked	−1.501***	−1.154***	−0.880***	−1.128***	−0.680***	−1.404***	−1.086***	−0.760***	−1.068***	−0.667***
	(0.105)	(0.0902)	(0.0927)	(0.0948)	(0.0954)	(0.106)	(0.0878)	(0.0930)	(0.0936)	(0.0935)
Resource	0.216**	0.245***	0.213**	0.252***	0.196**	0.150	0.220**	0.113	0.205**	0.214**
	(0.108)	(0.0924)	(0.0908)	(0.0940)	(0.0948)	(0.113)	(0.0883)	(0.0899)	(0.0913)	(0.0912)
Governance	0.616***	0.429***	0.659***	0.341***	0.0825	0.404***	0.423***	0.488***	0.250***	0.116**
	(0.0813)	(0.0693)	(0.0705)	(0.0732)	(0.0731)	(0.0719)	(0.0595)	(0.0614)	(0.0610)	(0.0590)
Time dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
R-squared	0.754	0.836	0.780	0.771	0.744	0.741	0.839	0.771	0.769	0.745

Note: Standard errors in parentheses ***$p < 0.01$, **$p < 0.05$, *$p < 0.1$.

Appendix B. OLS regressions with the six governance indicators

Table B1. Gravity for African exports with the six governance indicators.

VARIABLES	China	France	Germany	UK	USA	China	France	Germany	UK	USA
	Regulatory Quality					Control of Corruption				
Distance	5.368***	0.0118	0.0157	0.301*	2.040***	4.759***	0.0340	0.0337	0.422**	1.912***
	(0.628)	(0.136)	(0.164)	(0.166)	(0.465)	(0.646)	(0.134)	(0.159)	(0.171)	(0.480)
Real GDP	1.455***	1.116***	1.249***	1.139***	1.191***	1.347***	1.134***	1.282***	1.248***	1.165***
	(0.0806)	(0.0495)	(0.0664)	(0.0538)	(0.0583)	(0.0796)	(0.0473)	(0.0619)	(0.0554)	(0.0559)
Real GDP pc	0.138	0.265***	−0.170*	0.518***	0.263***	0.240**	0.286***	−0.235**	0.464***	0.374***
	(0.115)	(0.0704)	(0.0993)	(0.0794)	(0.0971)	(0.112)	(0.0722)	(0.104)	(0.0817)	(0.107)
Language		1.061***		1.434***	−0.181		1.106***		1.262***	−0.0768
		(0.184)		(0.186)	(0.212)		(0.182)		(0.198)	(0.223)
Colony		0.622***	0.876***	−0.0317			0.599***	0.803***	0.0159	
		(0.179)	(0.213)	(0.162)			(0.186)	(0.231)	(0.169)	
Landlocked	−0.181	−0.961***	−0.532***	−0.646***	−0.135	−0.202	−0.930***	−0.539***	−0.567***	−0.0956
	(0.235)	(0.156)	(0.177)	(0.166)	(0.192)	(0.238)	(0.155)	(0.179)	(0.167)	(0.199)
Resource	1.148***	0.741***	0.838***	0.368**	1.747***	1.050***	0.716***	0.925***	0.468***	1.603***
	(0.235)	(0.148)	(0.182)	(0.158)	(0.229)	(0.236)	(0.159)	(0.191)	(0.170)	(0.239)
Governance	−0.788***	0.133	0.237	0.839***	−0.125	−1.058***	0.0427	0.412**	0.876***	−0.460**
	(0.175)	(0.143)	(0.168)	(0.196)	(0.199)	(0.170)	(0.153)	(0.164)	(0.198)	(0.209)
Time dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
R-squared	0.590	0.716	0.596	0.737	0.579	0.599	0.715	0.600	0.731	0.585
	Political Stability and Absence of Violence/Terrorism					Government Effectiveness				
Distance	4.548***	0.0260	0.0138	0.278*	2.043***	5.089***	0.0225	−0.0104	0.389**	1.950***
	(0.626)	(0.132)	(0.164)	(0.162)	(0.463)	(0.621)	(0.134)	(0.159)	(0.171)	(0.467)
Real GDP	1.341***	1.148***	1.301***	1.334***	1.152***	1.469***	1.119***	1.230***	1.129***	1.209***
	(0.0821)	(0.0537)	(0.0681)	(0.0623)	(0.0609)	(0.0819)	(0.0482)	(0.0669)	(0.0539)	(0.0593)
Real GDP pc	0.00616	0.252***	−0.197*	0.372***	0.312***	0.277**	0.246***	−0.253**	0.380***	0.354***
	(0.134)	(0.0917)	(0.105)	(0.0977)	(0.112)	(0.116)	(0.0814)	(0.106)	(0.0872)	(0.115)

Language		1.085***		1.395***	−0.169		1.073***		1.141***	−0.0778
		(0.179)		(0.186)	(0.209)		(0.177)		(0.210)	(0.237)
Colony		0.624***	0.950***	−0.000689			0.640***	0.801***	0.0479	
		(0.188)	(0.216)	(0.156)			(0.186)	(0.227)	(0.165)	
Landlocked	−0.362	−0.939***	−0.507***	−0.542***	−0.143	−0.185	−0.954***	−0.544***	−0.585***	−0.111
	(0.250)	(0.159)	(0.170)	(0.164)	(0.198)	(0.233)	(0.157)	(0.176)	(0.162)	(0.198)
Resource	1.389***	0.740***	0.837***	0.411**	1.720***	0.983***	0.768***	0.942***	0.568***	1.630***
	(0.223)	(0.154)	(0.179)	(0.160)	(0.221)	(0.238)	(0.163)	(0.190)	(0.176)	(0.249)
Governance	−0.168	0.0829	0.157	0.655***	−0.148	−1.080***	0.156	0.450***	1.099***	−0.378
	(0.145)	(0.115)	(0.118)	(0.144)	(0.162)	(0.198)	(0.168)	(0.174)	(0.214)	(0.255)
Time dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
R-squared	0.573	0.716	0.595	0.738	0.580	0.598	0.716	0.601	0.742	0.583
			Rule of Law					Voice and Accountability		
Distance	4.755***	0.0455	0.0464	0.525***	1.957***	5.847***	0.0311	−0.145	−0.00657	2.114***
	(0.624)	(0.135)	(0.159)	(0.170)	(0.477)	(0.688)	(0.155)	(0.191)	(0.177)	(0.474)
Real GDP	1.379***	1.135***	1.271***	1.234***	1.179***	1.380***	1.133***	1.260***	1.195***	1.181***
	(0.0791)	(0.0472)	(0.0633)	(0.0530)	(0.0556)	(0.0762)	(0.0468)	(0.0642)	(0.0533)	(0.0561)
Real GDP pc	0.270**	0.226**	−0.266**	0.343***	0.336***	0.136	0.299***	−0.169*	0.598***	0.221**
	(0.125)	(0.0878)	(0.112)	(0.0998)	(0.125)	(0.105)	(0.0666)	(0.0926)	(0.0647)	(0.0910)
Language		1.076***		1.266***	−0.120		1.119***		1.392***	−0.214
		(0.176)		(0.191)	(0.231)		(0.194)		(0.178)	(0.208)
Colony		0.649***	0.856***	−0.107			0.585***	0.919***	0.0104	
		(0.186)	(0.226)	(0.163)			(0.184)	(0.217)	(0.150)	
Landlocked	−0.157	−0.972***	−0.576***	−0.665***	−0.104	−0.271	−0.922***	−0.492***	−0.465***	−0.172
	(0.234)	(0.157)	(0.178)	(0.162)	(0.194)	(0.239)	(0.158)	(0.176)	(0.171)	(0.207)
Resource	0.983***	0.801***	0.976***	0.646***	1.643***	0.901***	0.701***	0.897***	0.425***	1.805***
	(0.240)	(0.176)	(0.203)	(0.198)	(0.265)	(0.242)	(0.155)	(0.190)	(0.163)	(0.229)
Governance	−0.926***	0.179	0.409**	1.023***	−0.269	−0.804***	0.00760	0.287**	0.650***	0.0274
	(0.190)	(0.164)	(0.169)	(0.217)	(0.241)	(0.146)	(0.128)	(0.140)	(0.152)	(0.148)
Time dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
R-squared	0.595	0.716	0.600	0.743	0.581	0.594	0.715	0.598	0.728	0.579

Note: Robust Standard errors in parentheses ***$p < 0.01$, **$p < 0.05$, *$p < 0.1$.

Table B2. Gravity for African imports with the six governance indicators.

VARIABLES	China	France	Germany	UK	USA	China	France	Germany	UK	USA
	Regulatory Quality					Control of Corruption				
Distance	0.885**	−0.467***	−0.812***	−0.606***	−1.245***	1.362***	−0.406***	−0.772***	−0.607***	−1.319***
	(0.367)	(0.0765)	(0.0971)	(0.116)	(0.205)	(0.387)	(0.0806)	(0.0946)	(0.118)	(0.206)
Real GDP	0.906***	0.919***	0.908***	0.836***	0.883***	0.967***	0.971***	0.971***	0.871***	0.889***
	(0.0376)	(0.0315)	(0.0409)	(0.0352)	(0.0344)	(0.0379)	(0.0325)	(0.0387)	(0.0363)	(0.0344)
Real GDP pc	−0.460***	−0.172***	−0.202***	−0.0711	−0.0157	−0.442***	−0.134***	−0.271***	0.00207	0.0263
	(0.0523)	(0.0414)	(0.0608)	(0.0462)	(0.0479)	(0.0567)	(0.0438)	(0.0577)	(0.0499)	(0.0528)
Language		0.926***		0.298***			0.889***		0.336***	
		(0.147)		(0.113)			(0.159)		(0.117)	
Colony		1.229***	0.225***	0.580***	0.191**		1.328***	0.132	0.559***	0.223**
		(0.134)	(0.0779)	(0.105)	(0.0950)		(0.139)	(0.0927)	(0.101)	(0.0977)
Landlocked	−1.459***	−1.128***	−0.788***	−1.118***	−0.639***	−1.400***	−1.057***	−0.773***	−1.043***	−0.605***
	(0.115)	(0.0916)	(0.0947)	(0.0934)	(0.0895)	(0.109)	(0.0916)	(0.0959)	(0.0951)	(0.0900)
Resource	−0.00320	0.104	0.0249	0.173**	0.123	−0.0486	0.0650	0.126	0.0910	0.0702
	(0.111)	(0.0914)	(0.116)	(0.0875)	(0.0926)	(0.113)	(0.100)	(0.119)	(0.0972)	(0.0968)
Governance	0.476***	0.381***	0.478***	0.349***	0.0903	0.387***	0.194*	0.630***	0.0535	−0.0521
	(0.0945)	(0.0891)	(0.109)	(0.101)	(0.0873)	(0.0940)	(0.100)	(0.104)	(0.110)	(0.0918)
Time dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
R-squared	0.750	0.837	0.768	0.774	0.748	0.742	0.828	0.776	0.762	0.747
	Political Stability and Absence of Violence/Terrorism					Government Effectiveness				
Distance	0.987***	−0.423***	−0.824***	−0.616***	−1.252***	1.171***	−0.425***	−0.848***	−0.586***	−1.275***
	(0.364)	(0.0774)	(0.100)	(0.117)	(0.201)	(0.375)	(0.0793)	(0.0920)	(0.121)	(0.204)
Real GDP	1.020***	1.006***	1.021***	0.916***	0.909***	0.913***	0.938***	0.882***	0.845***	0.887***
	(0.0404)	(0.0368)	(0.0477)	(0.0407)	(0.0368)	(0.0374)	(0.0323)	(0.0391)	(0.0350)	(0.0341)
Real GDP pc	−0.540***	−0.199***	−0.280***	−0.128**	−0.0447	−0.488***	−0.183***	−0.323***	−0.0758	−0.00735
	(0.0590)	(0.0515)	(0.0674)	(0.0555)	(0.0496)	(0.0582)	(0.0469)	(0.0580)	(0.0539)	(0.0561)

Language		0.921***		0.284**			0.931***		0.240*	
		(0.158)		(0.113)			(0.155)		(0.123)	
Colony		1.307***	0.384***	0.591***	0.185*		1.301***	0.110	0.591***	0.191*
		(0.136)	(0.0876)	(0.104)	(0.0948)		(0.133)	(0.0906)	(0.102)	(0.101)
Landlocked	−1.404***	−1.062***	−0.746***	−1.074***	−0.631***	−1.425***	−1.082***	−0.792***	−1.072***	−0.621***
	(0.107)	(0.0915)	(0.0877)	(0.0931)	(0.0896)	(0.107)	(0.0904)	(0.0929)	(0.0929)	(0.0883)
Resource	0.0102	0.0918	0.0417	0.188**	0.137	0.0208	0.126	0.182	0.189*	0.113
	(0.104)	(0.0940)	(0.115)	(0.0882)	(0.0916)	(0.117)	(0.100)	(0.117)	(0.102)	(0.102)
Governance	0.371***	0.219***	0.361***	0.265***	0.0955	0.491***	0.327***	0.766***	0.293**	0.0513
	(0.0630)	(0.0686)	(0.0796)	(0.0739)	(0.0596)	(0.100)	(0.109)	(0.108)	(0.129)	(0.106)
Time dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
R-squared	0.751	0.832	0.768	0.774	0.748	0.747	0.832	0.788	0.767	0.747
			Rule of Law					Voice and Accountability		
Distance	1.241***	−0.375***	−0.752***	−0.534***	−1.269***	0.870**	−0.661***	−1.092***	−0.730***	−1.290***
	(0.369)	(0.0814)	(0.0971)	(0.126)	(0.208)	(0.396)	(0.0890)	(0.113)	(0.119)	(0.207)
Real GDP	0.952***	0.971***	0.954***	0.874***	0.891***	0.954***	0.936***	0.933***	0.860***	0.892***
	(0.0366)	(0.0321)	(0.0409)	(0.0360)	(0.0341)	(0.0382)	(0.0323)	(0.0405)	(0.0356)	(0.0342)
Real GDP pc	−0.551***	−0.239***	−0.336***	−0.111*	−0.00921	−0.417***	−0.159***	−0.186***	−0.0364	−0.0152
	(0.0583)	(0.0499)	(0.0652)	(0.0591)	(0.0575)	(0.0513)	(0.0365)	(0.0523)	(0.0374)	(0.0446)
Language		0.963***		0.254**	0.193*		0.972***		0.283**	
		(0.152)		(0.115)	(0.101)		(0.145)		(0.109)	
Colony		1.299***	0.207**	0.549***			1.148***	0.310***	0.596***	0.172*
		(0.129)	(0.0930)	(0.104)			(0.132)	(0.0972)	(0.100)	(0.0950)
Landlocked	−1.482***	−1.130***	−0.841***	−1.108***	−0.625***	−1.383***	−1.065***	−0.705***	−1.043***	−0.620***
	(0.108)	(0.0904)	(0.0931)	(0.0922)	(0.0883)	(0.109)	(0.0906)	(0.0939)	(0.0949)	(0.0913)
Resource	0.113	0.215**	0.227*	0.245**	0.118	0.0413	0.178*	0.115	0.193**	0.149
	(0.117)	(0.104)	(0.127)	(0.106)	(0.106)	(0.125)	(0.0916)	(0.117)	(0.0878)	(0.0944)
Governance	0.589***	0.410***	0.670***	0.339***	0.0475	0.343***	0.397***	0.511***	0.263***	0.111
	(0.0911)	(0.102)	(0.107)	(0.118)	(0.0958)	(0.0788)	(0.0712)	(0.0824)	(0.0796)	(0.0700)
Time dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
R-squared	0.758	0.837	0.784	0.771	0.747	0.744	0.840	0.775	0.770	0.748

Note: Robust Standard errors in parentheses ***$p < 0.01$, **$p < 0.05$, *$p < 0.1$

Appendix C. Panel data regressions with the six governance indicators

Table C1. Gravity for African exports with the six governance indicators.

VARIABLES	China	France	Germany	UK	USA	China	France	Germany	UK	USA
	Regulatory Quality					Control of Corruption				
Distance	4.217***	0.00157	0.158	0.344	2.445**	4.168***	0.0350	0.169	0.380	2.216*
	(1.622)	(0.458)	(0.557)	(0.465)	(1.170)	(1.526)	(0.462)	(0.561)	(0.467)	(1.182)
Real GDP	1.578***	1.139***	1.359***	1.205***	1.208***	1.544***	1.150***	1.366***	1.269***	1.232***
	(0.155)	(0.123)	(0.138)	(0.108)	(0.145)	(0.147)	(0.123)	(0.138)	(0.107)	(0.146)
Real GDP pc	−0.125	0.341**	−0.180	0.628***	0.165	−0.0349	0.408***	−0.158	0.690***	0.291
	(0.222)	(0.155)	(0.180)	(0.144)	(0.196)	(0.215)	(0.155)	(0.180)	(0.145)	(0.196)
Language		0.580		1.525***	−0.263		0.493		1.516***	−0.158
		(0.508)		(0.446)	(0.480)		(0.513)		(0.450)	(0.487)
Colony		1.223**	1.136	−0.118			1.334**	1.150	−0.139	
		(0.541)	(0.842)	(0.441)			(0.545)	(0.849)	(0.442)	
Landlocked	−0.328	−0.841**	−0.543	−0.499	0.0345	−0.289	−0.776**	−0.524	−0.393	0.158
	(0.506)	(0.391)	(0.457)	(0.341)	(0.511)	(0.484)	(0.394)	(0.459)	(0.340)	(0.516)
Resource	1.629***	0.704*	1.077**	0.408	1.963***	1.515***	0.610	1.053**	0.348	1.798***
	(0.511)	(0.381)	(0.426)	(0.326)	(0.479)	(0.490)	(0.384)	(0.429)	(0.328)	(0.485)
Governance	−0.148	0.100	0.0555	0.493***	0.262*	−0.488**	−0.167	−0.0300	0.243	−0.209
	(0.234)	(0.118)	(0.149)	(0.148)	(0.141)	(0.234)	(0.117)	(0.149)	(0.154)	(0.141)
Time dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
R-squared	0.575	0.714	0.591	0.730	0.571	0.588	0.712	0.588	0.717	0.580
	Political Stability and Absence of Violence/Terrorism					Government Effectiveness				
Distance	3.946**	0.0135	0.175	0.357	2.244*	4.558***	0.0457	0.180	0.394	2.137*
	(1.733)	(0.455)	(0.561)	(0.461)	(1.200)	(1.586)	(0.461)	(0.562)	(0.463)	(1.131)
Real GDP	1.571***	1.164***	1.360***	1.332***	1.233***	1.619***	1.175***	1.374***	1.226***	1.259***
	(0.166)	(0.122)	(0.138)	(0.107)	(0.149)	(0.153)	(0.123)	(0.139)	(0.107)	(0.141)
Real GDP pc	−0.182	0.322**	−0.138	0.494***	0.272	0.0455	0.442***	−0.141	0.613***	0.336*
	(0.246)	(0.158)	(0.185)	(0.149)	(0.203)	(0.225)	(0.157)	(0.182)	(0.147)	(0.192)

Language		0.588		1.482***	−0.203		0.463		1.418***	−0.0983
		(0.506)		(0.443)	(0.493)		(0.513)		(0.449)	(0.467)
Colony		1.235**	1.131	−0.0931			1.348**	1.163	−0.112	
		(0.537)	(0.849)	(0.437)			(0.544)	(0.850)	(0.439)	
Landlocked	−0.374	−0.829**	−0.515	−0.452	0.147	−0.240	−0.756*	−0.515	−0.427	0.180
	(0.545)	(0.388)	(0.459)	(0.337)	(0.523)	(0.500)	(0.394)	(0.459)	(0.338)	(0.493)
Resource	1.712***	0.709*	1.041**	0.468	1.839***	1.385***	0.565	1.030**	0.449	1.735***
	(0.550)	(0.379)	(0.429)	(0.323)	(0.492)	(0.511)	(0.386)	(0.431)	(0.328)	(0.466)
Governance	0.0294	0.0739	−0.0483	0.456***	−0.0464	−0.699***	−0.270**	−0.0956	0.492***	−0.352**
	(0.156)	(0.0756)	(0.0965)	(0.0981)	(0.0908)	(0.266)	(0.135)	(0.172)	(0.174)	(0.164)
Time dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
R-squared	0.569	0.714	0.588	0.733	0.576	0.592	0.708	0.586	0.730	0.579
			Rule of Law					Voice and Accountability		
Distance	4.282***	0.0220	0.162	0.463	2.219*	4.942***	0.0526	0.0831	0.265	2.273*
	(1.589)	(0.458)	(0.558)	(0.470)	(1.150)	(1.701)	(0.463)	(0.570)	(0.473)	(1.225)
Real GDP	1.567***	1.155***	1.364***	1.267***	1.238***	1.567***	1.157***	1.362***	1.256***	1.240***
	(0.153)	(0.122)	(0.137)	(0.107)	(0.142)	(0.158)	(0.122)	(0.138)	(0.107)	(0.151)
Real GDP pc	0.0312	0.406**	−0.264	0.575***	0.280	−0.0436	0.376**	−0.187	0.723***	0.288
	(0.232)	(0.159)	(0.185)	(0.152)	(0.197)	(0.226)	(0.153)	(0.178)	(0.143)	(0.200)
Language		0.513		1.452***	−0.176		0.530		1.561***	−0.154
		(0.510)		(0.451)	(0.474)		(0.509)		(0.450)	(0.505)
Colony		1.302**	1.112	−0.181			1.301**	1.152	−0.134	
		(0.540)	(0.844)	(0.443)			(0.543)	(0.848)	(0.444)	
Landlocked	−0.226	−0.775**	−0.600	−0.479	0.157	−0.303	−0.803**	−0.531	−0.364	0.151
	(0.506)	(0.392)	(0.458)	(0.343)	(0.502)	(0.520)	(0.389)	(0.458)	(0.341)	(0.534)
Resource	1.410***	0.612	1.196***	0.509	1.809***	1.349**	0.646*	1.115***	0.341	1.740***
	(0.519)	(0.386)	(0.432)	(0.335)	(0.476)	(0.544)	(0.383)	(0.431)	(0.332)	(0.505)
Governance	−0.566**	−0.120	0.313*	0.523***	−0.124	−0.483**	−0.0481	0.126	0.168	−0.239*
	(0.270)	(0.142)	(0.179)	(0.177)	(0.173)	(0.233)	(0.120)	(0.151)	(0.148)	(0.143)
Time dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
R-squared	0.588	0.711	0.597	0.733	0.577	0.588	0.713	0.593	0.715	0.572

Note: Standard errors in parentheses ***$p < 0.01$, **$p < 0.05$, *$p < 0.1$.

Table C2. Gravity for African imports with the six governance indicators.

VARIABLES	China	France	Germany	UK	USA	China	France	Germany	UK	USA
	Regulatory Quality					Control of Corruption				
Distance	1.333	−0.463*	−0.697**	−0.576	−1.019*	1.656*	−0.420*	−0.685**	−0.575	−1.171**
	(0.964)	(0.248)	(0.314)	(0.360)	(0.572)	(0.965)	(0.250)	(0.305)	(0.350)	(0.558)
Real GDP	1.033***	0.967***	1.033***	0.969***	0.896***	1.066***	1.004***	1.044***	0.989***	0.927***
	(0.0906)	(0.0687)	(0.0770)	(0.0804)	(0.0720)	(0.0908)	(0.0683)	(0.0742)	(0.0778)	(0.0701)
Real GDP pc	−0.459***	−0.153*	0.0377	−0.0209	−0.192*	−0.414***	−0.107	0.0466	0.0238	−0.131
	(0.119)	(0.0900)	(0.0979)	(0.102)	(0.102)	(0.119)	(0.0911)	(0.0953)	(0.100)	(0.0996)
Language		0.941***		0.439	0.213		0.892***		0.466	0.242
		(0.275)		(0.346)	(0.233)		(0.278)		(0.338)	(0.229)
Colony		1.342***	0.355	0.441			1.432***	0.361	0.424	
		(0.294)	(0.475)	(0.340)			(0.296)	(0.461)	(0.331)	
Landlocked	−1.304***	−1.136***	−0.503*	−0.999***	−0.702***	−1.247***	−1.066***	−0.488**	−0.950***	−0.616**
	(0.304)	(0.213)	(0.257)	(0.261)	(0.251)	(0.306)	(0.214)	(0.249)	(0.254)	(0.244)
Resource	−0.000921	0.0955	−0.0944	0.201	0.370	−0.0747	0.0407	−0.106	0.147	0.295
	(0.302)	(0.208)	(0.239)	(0.248)	(0.236)	(0.304)	(0.211)	(0.232)	(0.242)	(0.231)
Governance	0.212**	0.256***	0.0820	0.171**	0.262***	0.0704	0.0795	0.0190	−0.00703	0.0747
	(0.0880)	(0.0855)	(0.0729)	(0.0806)	(0.0870)	(0.0872)	(0.0878)	(0.0729)	(0.0814)	(0.0886)
Time dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
R-squared	0.741	0.835	0.743	0.767	0.738	0.732	0.827	0.738	0.758	0.740
	Political Stability and Absence of Violence/Terrorism					Government Effectiveness				
Distance	1.367	−0.418*	−0.712**	−0.571	−1.140**	1.616*	−0.422*	−0.697**	−0.573	−1.193**
	(0.956)	(0.251)	(0.311)	(0.359)	(0.572)	(0.966)	(0.251)	(0.303)	(0.361)	(0.568)
Real GDP	1.088***	1.009***	1.068***	1.001***	0.937***	1.058***	0.995***	1.036***	0.991***	0.924***
	(0.0898)	(0.0690)	(0.0757)	(0.0800)	(0.0723)	(0.0909)	(0.0689)	(0.0741)	(0.0801)	(0.0714)
Real GDP pc	−0.515***	−0.109	−0.0396	−0.0184	−0.164	−0.419***	−0.113	0.0249	0.0266	−0.113
	(0.121)	(0.0945)	(0.0987)	(0.105)	(0.105)	(0.120)	(0.0928)	(0.0958)	(0.104)	(0.103)

Language		0.884***		0.446	0.243		0.894***		0.468	0.264
		(0.279)		(0.346)	(0.234)		(0.279)		(0.349)	(0.234)
Colony		1.444***	0.411	0.435			1.436***	0.346	0.421	
		(0.297)	(0.470)	(0.340)			(0.296)	(0.459)	(0.341)	
Landlocked	−1.286***	−1.061***	−0.523**	−0.965***	−0.630**	−1.250***	−1.068***	−0.499**	−0.947***	−0.606**
	(0.302)	(0.215)	(0.253)	(0.260)	(0.250)	(0.306)	(0.215)	(0.247)	(0.261)	(0.249)
Resource	0.0185	0.0307	−0.0452	0.182	0.314	−0.0649	0.0470	−0.0793	0.145	0.270
	(0.301)	(0.211)	(0.236)	(0.248)	(0.236)	(0.305)	(0.212)	(0.231)	(0.250)	(0.236)
Governance	0.193***	0.0394	0.169***	0.0727	0.0800	0.0801	0.0904	0.0969	−0.00798	−0.00478
	(0.0558)	(0.0569)	(0.0463)	(0.0523)	(0.0571)	(0.102)	(0.0998)	(0.0844)	(0.0943)	(0.102)
Time dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
R-squared	0.743	0.827	0.752	0.764	0.742	0.733	0.828	0.746	0.758	0.740
			Rule of Law					Voice and Accountability		
Distance	1.585*	−0.413*	−0.686**	−0.535	−1.163**	1.448	−0.539**	−0.719**	−0.578	−1.185**
	(0.948)	(0.249)	(0.304)	(0.361)	(0.572)	(0.969)	(0.245)	(0.306)	(0.362)	(0.571)
Real GDP	1.060***	1.002***	1.043***	0.992***	0.924***	1.062***	0.991***	1.041***	0.990***	0.926***
	(0.0891)	(0.0680)	(0.0741)	(0.0798)	(0.0715)	(0.0898)	(0.0657)	(0.0737)	(0.0798)	(0.0716)
Real GDP pc	−0.460***	−0.139	0.0275	−0.0282	−0.133	−0.422***	−0.127	0.0406	0.0224	−0.141
	(0.120)	(0.0946)	(0.0975)	(0.105)	(0.105)	(0.118)	(0.0863)	(0.0940)	(0.101)	(0.100)
Language		0.912***		0.420	0.245		0.946***	0.369	0.463	0.230
		(0.277)		(0.347)	(0.235)		(0.267)	(0.458)	(0.347)	(0.234)
Colony		1.422***	0.358	0.414			1.337***		0.424	
		(0.294)	(0.461)	(0.341)			(0.287)		(0.341)	
Landlocked	−1.286***	−1.094***	−0.503**	−0.984***	−0.620**	−1.250***	−1.071***	−0.488**	−0.949***	−0.617**
	(0.301)	(0.214)	(0.249)	(0.261)	(0.251)	(0.303)	(0.205)	(0.246)	(0.260)	(0.250)
Resource	−0.00206	0.0875	−0.0795	0.222	0.299	−0.0165	0.113	−0.0886	0.153	0.338
	(0.301)	(0.214)	(0.234)	(0.251)	(0.240)	(0.306)	(0.204)	(0.232)	(0.250)	(0.239)
Governance	0.209**	0.152	0.0758	0.165*	0.0531	0.118	0.198**	0.0517	0.0112	0.125
	(0.106)	(0.102)	(0.0886)	(0.0985)	(0.106)	(0.0897)	(0.0858)	(0.0744)	(0.0821)	(0.0873)
Time dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
R-squared	0.743	0.832	0.744	0.765	0.741	0.735	0.836	0.742	0.759	0.742

Note: Standard errors in parentheses ***$p < 0.01$, **$p < 0.05$, *$p < 0.1$.