

Intensity of Trade with the EU and Corruption in Africa

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Abstract

Via partnership agreements, the EU provides African countries with access to its markets and asks for compliance with a given set of good governance norms and procedures. While the EU markets are significant for African countries, African markets are not significant for the EU. This asymmetric relationship should give the EU the power to “convince” the African countries to adopt better governance practices. Results from panel data regression analyses indicate that for 34 African countries, an increase in the intensity of *trade* and *imports* from the EU between 1984–2009 reduced the level of corruption, but not always the intensity of *exports* to the EU. These findings do not provide strong evidence in favor of the idea that the EU has effectively used its asymmetric trade relationship in convincing African countries to adopt better governance practices, but they consistently support alternative-rival-hypotheses, namely trade openness and imports-as-market discipline hypotheses.

JEL Classifications: C23, F14, O10

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I. Introduction

In this study, we assess the effectiveness of the EU policies towards Africa. In particular, we examine the relationship between the intensity of trade with the EU and the level of corruption in 34 countries in Africa. We hypothesize that for an African country, the more important or the greater the intensity of a trade with the EU is, the more likely that this African country could adopt better governance practices (as demanded by the EU) and consequently lower its level of corruption.

The Cotonou Partnership Agreement (CPA), which was signed in June 2000, is the key framework for relations between the EU and Africa.¹ The agreement covers economic issues such as aid, trade, and policy coherence for development. It also contains articles regarding political issues on human rights, migration, peace and security, and governance. Good governance is considered one of the “fundamental elements” of the CPA (ECDPM, 2010, p. 12). Article 97 of the CPA details the procedure to deal with the violations of a fundamental element of the Agreement. Regarding good governance and corruption, this article makes it clear that “serious cases of corruption; e.g., acts of bribery leading to corruption, are grounds to suspend cooperation” (European Commission, 2010, page 85).

The CPA is not the first agreement in which the EU links economics with politics. Since the fourth Lomé Convention in 1989, the EU has systematically followed similar strategies towards Africa, mixing economics and politics and using conditionality-induced processes that merge both positive and negative conditionality (Ethier, 2003; Schimmelfennig *et al.*, 2003; Haughton, 2007; Nottebaum, 2012). The EU provides exporters in the African, Caribbean, and Pacific countries (the ACP) with access to its vast markets via preferential trade agreements (positive conditionality) in exchange for compliance with a given set of democratic norms and procedures. By the same token, as the Article 97 of the CPA demonstrates very vividly, included in these agreements is a threat to suspend these privileges if these norms and procedures are not followed (negative conditionality).

Implicitly, the necessary condition for the effective implementation of conditionality is the existence of an asymmetry, and Hirschman (1945) provides a clear explanation on how trade can be used by nation states to exercise power on other states. Hirschman focuses on the asymmetric dependence between powerful big countries and less powerful small countries when he writes:

“... the trade conducted between Country A, on the one hand, and Countries B, C, D, etc., on the other, is worth something to B, C, D, etc., and they would therefore consent to grant A certain advantages—military, political, economic—in order to retain the possibility of trading with A. If A wants to increase

¹ The CPA was signed in 2000 and ten years later its second revision was completed in June 2010 (European Commission, 2010). For an excellent summary of all formal agreements and policy frameworks between the EU and Africa, see Table 1 in ECDPM (2010, p. 5).

its hold on B, C, D, etc., it must create a situation in which these countries would do anything in order to retain its foreign trade with A. Such situation arises when it is extremely difficult and onerous for these countries (1) to disperse entirely with the trade they conduct with A and (2) to replace A as a market source of supply with other countries.” (p. 17)

If we follow Hirschman’s logic, the asymmetric relationship between the EU and an African country—both in terms of size of economies and importance of having access to each other’s markets—should give the EU the power to “convince” the African country to improve its political environment, or its human rights record, freedom of speech, and governance, by accepting and implementing reform projects.

In the rest of the study, we first identify the channels through which trade openness affects good governance (regardless of the presence of conditionality). In addition to these channels, we explain which other relevant factors we will be taking into account, such as level of income, democratic accountability, and ethnic diversity based on the findings of the empirical corruption studies. Third, we construct a regression model followed by an assembly of a panel data of 34 countries in Africa for 26 years (between 1984 and 2009) and utilize the panel data estimation techniques to capture a possible group (country specific effects), to estimate the parameters of this model, and consequently to check the validity of our hypothesis. We also run a robustness check to address possible bias in the estimated coefficient for the variable and intensity of trade with the EU due to the possible relationship between country size, trade openness, and corruption. Fifth and finally, we provide a summary and offer concluding remarks.

II. Trade Intensity and Corruption

Trade intensity can affect the quality of domestic institutions and governance. Specifically, the higher the economic openness of a country is, the lower its corruption (Gokcekus and Knoerich, 2006). In other words, countries which are more open—with a higher ratio of total trade (exports and imports) to GDP—often have lower levels of corruption. Bonaglia *et al.* (2001) identifies two channels through which economic openness reduces corruption: (1) the number and stringency of the rules and regulations regarding trade and (2) increased competition.

As explained by Kruger (1974) and Gatti (1999), complicated trade laws, restrictions, and incentives effectively provide a potentially higher level of rents and therefore provide more reasons to look for ways around the red tape. At the same time, they allow public officials to interpret complex rules subjectively, causing the officials to become more tempted to abuse their power.² This creates an environment more susceptible to corrupt activities or the use

² At an individual company level, paying bribes can, in some instances, be seen as an effective and productive avenue for obtaining

of public office for private gains. Accordingly, installing a more liberal trade regime means having simpler trade laws and less restrictions, and therefore smaller potential rents to seek; i.e., less corruption.

International trade also means a more intensive competition in output markets, both at home and abroad (De Melo and Urata, 1986; Gokcekus, 1997; Levinsohn, 1998; Ades and Di Tella, 1999; Min, 1999; Kohpaiboon, 2010). Particularly, foreign competition via imports puts constraints on domestic companies' market powers and by doing so it forces domestic companies to allocate their resources in a more efficient manner. This is also known as the imports as market-discipline-hypothesis. This induces the requirement for a more efficient resource allocation, which could be an outcome of competition faced in foreign markets via exports as well as in domestic markets via imports, restraining domestic companies and forcing them to stay away from illicit activities such as paying bribes, smuggling, and black market transacting.

III. Other Factors and Corruption

There are almost an unlimited number of economic, social and political factors influencing corruption (Treisman, 2000). In our model, we include three variables, namely (1) *per capita income*, (2) *democracy*, and (3) *diversity* next to the key variable, we are focusing on which is *intensity of trade with the EU*.³

Almost every empirical corruption study includes *per capita income* as an explanatory variable. Per capita income is used as the proxy for the level of economic development, and *a priori* expectation is a negative relationship between corruption and economic development. In more economically developed countries, where populations are more educated and literate, and where the normative separation between "public" and "private" is clearer (Treisman, 2000), corruption is defined as "using public office for private gains" (Shleifer and Vishny, 1993; Rosa-Ackerman, 1999).

A number of empirical corruption studies such as those by Goel and Nelson (2005), Chowdhury (2004), and Treisman (2000) include *democracy* — democratic accountability — as an explanatory variable. Democratic countries with proper checks and balances provide fewer opportunities for public sector rents. Moreover, the degree of public scrutiny of corrupt acts by rent-seekers and public officials in these countries is higher (Mohtadi and Roe, 2003). Similarly,

licenses, permits, or achieving some other objectives. However, as a good example of the *fallacy of composition*, when paying bribes becomes a common way of doing business, this creates equity, efficiency, and misallocation problems for the entire economy.

³ We do not include a number of relevant variables which may differ from one country to another but are time invariant because the fixed effect model controls any time invariant effects including the effects of *language*, *legal system*, being a *colony*, or geography (e.g., being landlocked) of a country.

ethnic *diversity* is included as an explanatory variable in Treisman (2000), Glaeser and Saks (2004), Gokcekus and Knoerich (2006), and Dincer (2008). Vanhanen (1999) provides the justification for the positive relationship between corruption and ethnic diversity by pointing to the ethnocentric behavior of the members of an ethnic group to favor its group members over non-members.

IV. A Model

In this section we describe a regression model to quantify the effect of intensity of trade with the EU on good governance in Africa. The following model depicts the relationship between the corruption in African countries and the intensity of their trade with the EU:

$$\ln(\text{corruption})_{it} = \alpha + \beta \ln\left(\frac{\text{trade with the EU}}{\text{GDP}}\right)_{it} + \gamma_1 \ln(\text{income})_{it} + \gamma_2 \text{democracy}_{it} + \gamma_3 \text{diversity}_{it} + e_{it} \quad (1)$$

In equation (1), \ln is the natural logarithm operator, *corruption* is the level of corruption in country i at year t , *intensity of trade with the EU* is the volume of trade between an African country and the EU, with value of imports and exports divided by a country's gross domestic product, *income* is the per capita income, *democracy* is democratic accountability, *diversity* is about the ethnic tensions in a given African country, and e is an independent and identically distributed error term.

V. Data and Results

For each variable in the model, Table 1 presents the summary statistics, mean and standard deviations, data sources, and names of the 34 countries in our sample for the 26 years between 1984~2009.⁴ As briefly described in column 1, for corruption, democracy, and diversity indicators, higher ratings imply lower corruption, more democratic accountability, and less ethnic tensions, respectively. Accordingly, we expect the following signs and check their statistical significance for the coefficients in equation (1):

⁴ Although we started with 48 African countries whose trade data were available in the IMF's Direction of Trade Statistics, we ended up dropping 14 countries: (1) 13 of 48 countries was due to either the unavailability of corruption or GDP statistics; and (2) Liberia, which was an outlier with an astronomically high, over 1600% Trade/GDP ratio for the sample period, due to its acceptance of the flag of convenience for merchant shipping.

Table 1. Summary Statistics of Data

Variable	Mean	Standard Error	Data Source
Corruption ICRG-Corruption: Range: 1-6; the higher the score the lower the level of corruption	2.44	1.03	International Country Risk Guide
Trade with the EU / GDP (%)	21.46	14.30	IMF, Direction of Trade Statistics (<i>Trade (exports + imports)</i>) and World Bank, Development Indicators (GDP)
Trade with the EU / Total trade (%)	43.09	16.8	IMF, Direction of Trade Statistics
GDP current US\$ (billion)	18.93	35.95	World Bank, World Development Indicators
Per Capita Income Atlas method per capita GNI (current US\$)	892.34	1324.43	World Bank, World Development Indicators
Democracy ICRG-Democratic Accountability: the highest number of risk points (6) is assigned to Alternating Democracies, while the lowest number of risk points (0) is assigned to Autarchies.	2.73	1.21	International Country Risk Guide
Diversity ICRG-Ethnic Tensions: Range is 1-6; higher ratings are given to countries where racial and nationality tensions are minimal, even though such differences may still exist.	3.17	1.24	International Country Risk Guide
Years:	1984~2009		
34 African Countries in the sample:	Angola, Burkina Faso, Cote d'Ivoire, Cameroon, Democratic Republic of Congo, Republic of Congo, Algeria, Egypt, Ethiopia, Gabon, Gambia, Ghana, Guinea, Guinea-Bissau, Kenya, Libya, Morocco, Madagascar, Mali, Mozambique, Malawi, Niger, Nigeria, Sudan, Senegal, Sierra Leone, Somalia, Togo, Tunisia, Tanzania, Uganda, South Africa, Zambia, Zimbabwe		

- (1) $\beta > 0$, (the higher the intensity of trade, the lower the corruption) and
- (2) $\gamma_1 > 0$; $\gamma_2 > 0$; and $\gamma_3 > 0$, (the higher the income and democratic accountability, and the lower the diversity/ethnic tensions, the lower the corruption).

A. Extent of the Asymmetry

Our claim regarding the effect of trade intensity with the EU on corruption in African countries hinges upon the existence of an asymmetry in favor of the EU—the party which imposes the conditionality. Therefore, before we start conducting our regression analyses, we check the importance of the EU's and African countries' markets for each other. We calculate (1) the share of exports to the EU in total exports of the 34 African countries, (2) the share of exports to the 34 African countries in total exports of the EU, and the ratio of share in (1) to share in (2), to determine the “*export asymmetry in favor of the EU*.” As Table 2 presents, there is indeed a significant asymmetry. For instance, in the 1980s (1984~1989), 61 percent of the total exports of the 34 African countries in our sample went to the EU. In the 1990s (1990~1999) the percentage of exports was 54 percent and in the 2000s (2000~2009) it was 42 percent. However, these shares for the EU were only 3 percent in the 1980s and 2 percent in the 1990s and 2000s. On average the EU markets were 27 times more important for these African countries than their markets were for the EU. Although the number of times was fluctuating within a wide range of 16.0-35.9, we interpret this data as evidence that there was an *export asymmetry in favor of the EU* by an average of 27 times between 1984 and 2009.

Table 2. The Extent of the Asymmetry

Exports to Each Other's Markets as Percentage of their Total Exports

Year	The shares		Export asymmetry in favor of the EU
	the EU for Africa*	Africa for the EU	
1984	60.0	3.6	16.5
1985	62.1	3.1	20.0
1986	62.3	2.5	24.7
1987	62.1	2.1	29.2
1988	60.4	2.1	29.3
1989	59.5	2.0	29.6
1990	60.4	1.9	31.2
1991	62.2	1.8	35.4
1992	57.9	1.8	31.4
1993	54.3	1.8	29.7
1994	56.2	1.6	35.9
1995	54.1	1.5	35.5
1996	51.9	1.5	34.9
1997	49.8	1.4	34.5
1998	44.7	1.9	23.6
1999	47.3	1.9	24.3
2000	43.7	1.8	24.0
2001	45.7	1.7	26.4
2002	45.2	1.7	26.8
2003	43.6	1.8	24.4
2004	44.3	1.8	24.9
2005	41.2	1.8	22.8
2006	40.1	1.8	22.4
2007	37.9	2.0	19.2
2008	39.2	2.2	18.0
2009	37.7	2.4	16.0

(Note) * For the 34 African countries in our sample

(Source) Our own calculations based on IMF's Directions of Trade Statistics

B. Regression Results

Having a panel data with 34 countries for 26 years, we ran three sets of regressions to find out the best fitting model among the classic (OLS), fixed effects, and random effects models.⁵ Regression results are presented in Table 3.

Table 3. Regression Estimation Results

for Equation (1)			
<i>Dependent variabel: Ln(Corruption)</i>			
	OLS	Fixed Effects	Random Effects
<i>ln(trade with the EU / GDP)</i>	0.435* (0.24)	1.023*** (0.36)	0.982*** (0.31)
<i>ln(income)</i>	0.163 (0.16)	-0.119 (0.37)	-0.040 (0.28)
<i>democracy</i>	0.552*** (0.12)	0.352*** (0.13)	0.373*** (0.12)
<i>diversity</i>	0.397*** (0.12)	-0.078 (0.15)	0.002 (0.15)
<i>constant</i>	-4.947*** (1.04)	-2.803 (2.79)	-3.445* (2.04)
No. of Observations	806	806	806
Adjusted R ²	0.06		
Within R ²		0.02	0.02
F-test		13.20***	
Hausman Statistic		5.82	

(Note) Standard errors are in parentheses.

*** indicates level of significance at 1% (two-tailed)

** indicates level of significance at 5% (two-tailed)

* indicates level of significance at 10% (two-tailed)

⁵ For details of fixed and random effects models, see Greene, 2011.

⁶ For all eight different specifications of the model discussed in this section, the difference between the estimated coefficients for

The F-test result in column 3 indicates that there are statistically significant country-specific effects at the 0.01 level on corruption. On the other hand, the Hausman statistic of 5.82 does not reject the hypothesis that estimates from fixed and random effects models are systematically different. It indicates that the estimated coefficients from the fixed effects model and random effects model are both consistent. Indeed, the estimated coefficients from fixed effects model and random effects model are quite similar.⁶

Two major findings emerge from the regression analyses. First, while higher democratic accountability has a significant effect on corruption (the higher the democratic accountability, the lower the corruption), income and diversity do not have a significant effect on corruption. Second, and more importantly, as presented in column 3, the estimated coefficient for $\ln\left(\frac{\text{trade with the EU}}{\text{GDP}}\right)$ in the fixed effects model, which is statistically significant at 0.01 level (two-tailed), is 1.02. Specifically, one percent increase in the intensity of trade with the EU increases the corruption rating by one percent (lowers the corruption). This result, though, does not refute the idea that the EU is effectively using its asymmetric trade relationship with Africa in convincing the African countries to adopt better governance practices.

C. Exports or Imports

As we presented in Table 2, the EU markets are major export destinations for the 34 African countries. If indeed the EU conditionality is playing a role in reducing corruption, we argue that exports should matter more than imports (strong support for our hypothesis) or at least they should matter as much as imports (weak support for our hypothesis) in reducing corruption. To explore the possible differences between how exports and imports affect corruption, we estimate the two following models in this section:

$$\ln(\text{corruption})_{it} = \alpha + \beta_{11} \ln\left(\frac{\text{exports to the EU}}{\text{GDP}}\right)_{it} + \gamma_1 \ln(\text{income})_{it} + \gamma_2 \text{democracy}_{it} + \gamma_3 \text{diversity}_{it} + e_{it} \quad (2)$$

$$\ln(\text{corruption})_{it} = \alpha + \beta_{12} \ln\left(\frac{\text{imports from the EU}}{\text{GDP}}\right)_{it} + \gamma_1 \ln(\text{income})_{it} + \gamma_2 \text{democracy}_{it} + \gamma_3 \text{diversity}_{it} + e_{it} \quad (3)$$

Regarding equation (2) for the exports, fixed and random effects models provide a better fit than the OLS model as reported in column 3 of Table 4. The coefficient of the democracy variable is the only statistically significant one at 0.01 level among the other relevant variables, and most importantly the estimated coefficient for $\ln\left(\frac{\text{exports to the EU}}{\text{GDP}}\right)$ is 0.18, which is not

⁶ For all eight different specifications of the model discussed in this section, the difference between the estimated coefficients for intensity of trade variables in fixed and random effects models varies within a narrow range. Therefore, for brevity, we only refer to the estimated coefficients from the fixed effects models.

statistically significant. The intensity of exports to the EU does not affect the corruption rating in African countries. This result refutes the idea that the EU is effectively using its asymmetric trade relationship with Africa in convincing the African countries to adopt better governance practices.

Regarding equation (3), the imports model (as reported in column 6), fixed, and random effects models provide a better fit than the OLS; the coefficient of the democracy variable is the only statistically significant one at 0.01 level among the other relevant variables; and most importantly, 1.47 is the estimated coefficient for $\ln\left(\frac{\text{imports from the EU}}{\text{GDP}}\right)$, which is statistically significant at 0.01 level. Expressed another way, a one percent increase in the intensity of imports from the EU increases the corruption rating by 1.5 percent (lowers the corruption). That is to say, the intensity of imports from the EU significantly affects the corruption rating.

To further analyze the effects of imports and exports on corruption in the same model, we estimate the following:

$$\ln(\text{corruption})_{it} = \alpha + \beta_1 \ln\left(\frac{\text{exports to the EU}}{\text{GDP}}\right)_{it} + \beta_2 \ln\left(\frac{\text{imports from the EU}}{\text{GDP}}\right)_{it} + \gamma_1 \ln(\text{income})_{it} + \gamma_2 \text{democracy}_{it} + \gamma_3 \text{diversity}_{it} + e_{it} \quad (4)$$

The regression results of the two previous separate exports and imports models also hold with this specification. As reported in column 8 of Table 4, the fixed effects model confirms the robustness of the findings discussed above. The coefficient of the democracy variable is the only statistically significant one at 0.01 level among the other control variables. More importantly while the coefficient for $\ln\left(\frac{\text{exports to the EU}}{\text{GDP}}\right)$ is not statistically significant, the coefficient for $\ln\left(\frac{\text{imports from the EU}}{\text{GDP}}\right)$, which is statistically significant at 0.01 level, is 1.56.

The results regarding the estimated coefficients for the imports may not necessarily refute the idea that the EU is effectively using its asymmetric trade relationship with Africa in convincing the African countries to adopt better governance practices. However, when they are considered together with the findings that there is no statistically significant effect from exports, they bring alternative rival hypotheses into play. For instance, they raise the possibility that perhaps the relevant hypothesis is the imports-as-market discipline hypothesis rather than the hypothesis about the EU conditionality via the intensity of trade channel.

Table 4. Regression Estimation Results

for equations (2), (3), and (4)

	<i>Dependent variable: Ln(Corruption)</i>						
	OLS	Fixed Effects	Random Effects	OLS	Fixed Effects	Random Effects	Fixed Effects
<i>ln(exports to the EU/GDP)</i>	-0.295* (0.15)	0.175 (0.21)	0.161 (0.19)				-0.159 (0.22)
<i>ln(imports from the EU/GDP)</i>				1.257*** (0.23)	1.467*** (0.34)	1.485*** (0.30)	1.558*** (0.36)
<i>ln(income)</i>	0.364** (0.17)	-0.368 (0.37)	-0.091 (0.27)	0.086 (0.16)	-0.054 (0.36)	0.026 (0.27)	-0.111 (0.37)
<i>democracy</i>	0.509*** (0.12)	0.367*** (0.13)	0.369*** (0.12)	0.585*** (0.12)	0.345*** (0.12)	0.368*** (0.12)	0.343*** (0.12)
<i>diversity</i>	0.405*** (0.12)	-0.115 (0.15)	0.017 (0.15)	0.331*** (0.12)	-0.030 (0.15)	0.035 (0.15)	-0.022 (0.15)
<i>constant</i>	-4.307*** (0.96)	1.439 (2.383)	-0.513 (1.77)	-5.970*** (1.00)	-3.762 (2.54)	-4.528** (1.93)	-3.346 (2.61)
No. of Observations	806	806	806	806	806	806	806
Adjusted R ²	0.06			0.09			
Within R ²		0.01	0.01		0.04	0.03	0.04
F-test	12.82***				12.54***		11.81***
Hausman Statistic	10.01**				3.56		5.73

(Note) Standard errors are in parentheses.

*** indicates level of significance at 1% (two-tailed)

** indicates level of significance at 5% (two-tailed)

* indicates level of significance at 10% (two-tailed)

D. Trade Intensity and Size

So far, we checked (1) the presence of country-specific effects by utilizing random effects and fixed effects models in our estimations and (2) the different potential effects of exports and imports. There is one more issue that needs to be addressed before we reach a conclusion regarding the hypothesis we described earlier: For an African country, the more important or the greater the intensity of a trade with the EU is, the more likely that this African country could adopt better governance practices (as demanded by the EU) and consequently lower its level of corruption.

In this section, we check the possible bias in the estimated coefficient of β due to the size of the countries. As Knack and Azfar (2003) show, there is a possible relationship between the size of a country and its openness. Specifically, smaller countries tend to be more open than the others. They produce a smaller number of goods than they consume; therefore, they need a large number of exchanges with other countries.

Accordingly, the actual trade intensity captured by a ratio of trade to the GDP potentially includes “natural openness” due to size and “residual openness” due to trade policies (Wei, 2000). If size is correlated with corruption then the estimated coefficient is biased. To deal with this potential bias, we use the *relative intensity of trade with the EU* or the volume of trade with the EU instead of using the intensity of trade with the EU. Accordingly, we rewrite equation (1) as follows:

$$\ln(\text{corruption})_{it} = \alpha + \beta \ln\left(\frac{\text{trade with the EU}}{\text{total trade}}\right)_{it} + \gamma_1 \ln(\text{income})_{it} + \gamma_2 \text{democracy} + \gamma_3 \text{diversity}_{it} + e_{it} \quad (5)$$

As the regression results in Table 5 show, the results for equation (5) are similar to the ones for equation (1): The test statistics favor fixed effects and random effects models over the OLS. Income and diversity do not have significant effects on corruption but democracy does. Most importantly, the estimated coefficient for $\ln\left(\frac{\text{trade with the EU}}{\text{total trade}}\right)$, which is statistically significant at 0.01 level, is 1.75. In other words, a one percent increase in the relative intensity of trade trade with the EU increases the corruption rating by 1.8 percent. Clearly, this result does not refute the idea that the EU is effectively using its asymmetric trade relationship with Africa in convincing African countries to adopt better governance practices.

As we did with the earlier specification, to determine the varying impact of exports and imports, we formulate the three following equations:

$$\ln(\text{corruption})_{it} = \alpha + \beta_{11} \ln\left(\frac{\text{exports to the EU}}{\text{total exports}}\right)_{it} + \gamma_1 \ln(\text{income})_{it} + \gamma_2 \text{democracy} + \gamma_3 \text{diversity}_{it} + e_{it} \quad (6)$$

$$\ln(\text{corruption})_{it} = \alpha + \beta_{12} \ln\left(\frac{\text{imports from the EU}}{\text{total imports}}\right)_{it} + \gamma_1 \ln(\text{income})_{it} + \gamma_2 \text{democracy} + \gamma_3 \text{diversity}_{it} + e_{it} \quad (7)$$

$$\ln(\text{corruption})_i = \alpha + \beta_1 \ln\left(\frac{\text{exports to the EU}}{\text{total exports}}\right)_i + \beta_2 \ln\left(\frac{\text{imports from the EU}}{\text{total imports}}\right)_i + \gamma_1 \ln(\text{income})_i + \gamma_2 \text{democracy} + \gamma_3 \text{diversity}_i + e_i \quad (8)$$

Table 5. Regression Estimation Results

for equation (5)			
<i>Dependent variable: Ln(Corruption)</i>			
	OLS	Fixed Effects	Random Effects
<i>ln(trade with the EU/ total trade)</i>	1.152 ^{***} (0.35)	1.748 ^{***} (0.40)	1.743 ^{***} (0.38)
<i>ln(income)</i>	0.148 (0.16)	-0.160 (0.36)	-0.035 (0.27)
<i>democracy</i>	0.611 ^{***} (0.13)	0.464 ^{***} (0.13)	0.477 ^{***} (0.12)
<i>diversity</i>	0.442 ^{***} (0.12)	0.006 (0.16)	0.084 (0.15)
<i>constant</i>	-8.147 ^{***} (1.53)	-6.626 (2.95)	-7.620 ^{***} (2.39)
No. of Observations	806	806	806
Adjusted R ²	0.07		
Within R ²		0.04	0.04
F-test		13.36 ^{***}	
Hausman Statistic		5.49	

(Note) Standard errors are in parentheses.

*** indicates level of significance at 1% (two-tailed)

** indicates level of significance at 5% (two-tailed)

* indicates level of significance at 10% (two-tailed)

Table 6. Regression Estimation Results

for equations (6), (7), and (8)

	<i>Dependent variabel: Ln(Corruption)</i>						
	OLS	Fixed Effects	Random Effects	OLS	Fixed Effects	Random Effects	Fixed Effects
<i>ln(exports to the EU/ total exports)</i>	-0.007 (0.21)	0.547** (0.24)	0.527** (0.23)				0.084 (0.26)
<i>ln(imports from the EU/total imports)</i>				2.047*** (0.34)	2.122*** (0.41)	2.158*** (0.38)	2.068*** (0.44)
<i>ln(income)</i>	0.256 (0.16)	-0.284 (0.36)	-0.027 (0.28)	-0.146 (0.17)	-0.200 (0.35)	-0.135 (0.27)	-0.179 (0.36)
<i>democracy</i>	0.525*** (0.12)	0.421*** (0.13)	0.418*** (0.12)	0.698*** (0.12)	0.492*** (0.13)	0.513*** (0.12)	0.497*** (0.13)
<i>diversity</i>	0.413*** (0.12)	-0.099 (0.15)	-0.009 (0.15)	0.534*** (0.12)	0.063 (0.16)	0.151 (0.15)	0.061 (0.16)
<i>constant</i>	-4.221*** (1.24)	-0.954 (2.58)	-2.692 (2.05)	-10.14*** (1.35)	-8.005*** (2.88)	-8.829*** (2.28)	-8.246*** (2.98)
No. of Observations	806	806	806	806	806	806	806
Adjusted R ²	0.05			0.09			
Within R ²		0.02	0.02		0.05	0.05	0.05
F-test		13.20***			12.59***		12.38***
Hausman Statistic		10.34**			4.37		7.09

(Note) Standard errors are in parentheses.

*** indicates level of significance at 1% (two-tailed)

** indicates level of significance at 5% (two-tailed)

* indicates level of significance at 10% (two-tailed)

Table 6 summarizes the regression results for these three specifications. Regarding equation (6), the results for fixed effects model in column 3 indicate that (1) among other relevant factors, only the estimated coefficient of democratic accountability variable is statistically significant at 0.01 level; (2) the estimated coefficient for $\ln\left(\frac{\text{exports to the EU}}{\text{total exports}}\right)$, which is significant at 0.05 level, is 0.55. To put it simply, the relative intensity of exports to the EU affects the corruption rating in African countries. This result does not refute the idea that the EU is effectively using its asymmetric trade relationship with Africa in convincing the African countries to adopt better governance practices.

Regarding equation (7), as the regression results in column 6 indicate (1) among other relevant factors, only the estimated coefficient of democracy variable is significant at 0.01 level;⁷ (2) the estimated coefficient for $\ln\left(\frac{\text{imports from the EU}}{\text{total imports}}\right)$, which is statistically significant at 0.01 level, is 2.12. In other words, one percent increase in the intensity of imports from the EU increases the corruption rating by 2.1 percent. That is to say, the relative intensity of imports from the EU affects the corruption rating. Moreover, the sizes of estimates of the coefficients for exports and imports suggest that, consistent with the results in equations (2) and (3), imports from the EU are more important in reducing corruption in Africa than exports to the EU.

Finally, as summarized in column 8 when both exports and imports are included in the model as in equation (8), the fixed effects model results confirm that the positive impact of relative intensity of exports to the EU on corruption rating, shown in equation (6), is not robust. In particular, it shows that it is the relative intensity of imports from the EU rather than exports to the EU which reduces corruption in African countries. While the coefficient for $\ln\left(\frac{\text{exports to the EU}}{\text{total exports}}\right)$ is not statistically significant, the coefficient for $\ln\left(\frac{\text{imports from the EU}}{\text{total imports}}\right)$, statistically significant at 0.01 level, is 2.07.

IV. Concluding Remarks

Cataloguing the findings, the six following findings in four categories emerge from the regression analyses of the eight specifications of the model: First, whether it is measured as a ratio of the trade with the EU to GDP or the ratio of trade with the EU to total trade, an increase in the intensity of trade with the EU lowers corruption. Second, country specific factors are important determinants of the level of corruption among the 34 African countries. Third, in these 34 countries, the level of corruption is also a function of democratic accountability. Fourth, the intensity of imports from the EU has a significant effect on the

⁷ Consistently getting insignificant estimated coefficient for income coupled with (1) the low correlation between income and trade intensity and (2) tests results favoring both fixed and random effects models over the OLS models indicate that endogeneity is less an issue in our data set.

level of corruption; however, the intensity of exports to the EU is not playing as clear a role as imports for two reasons. First, in three of the four relevant specifications of the model the estimated coefficient indicates an insignificant effect of intensity of exports to the EU on the level of corruption in the 34 African countries. Second, even the statistically significant estimate of the coefficient for exports in equation (6) is much smaller than the one for imports.

Based on two observations, (1) the enormous *export asymmetry in favor of the EU* coupled with (2) the *conditionality* strategy the EU implements towards African countries (as clearly spelled out in the CPA), we hypothesized that for an African country the more important and the greater the intensity a trade with the EU is, the more likely that this African country could adopt better governance practices (as demanded by the EU) and consequently lower its level of corruption. Although findings (1a), (1b), and (4a) do not refute this hypothesis, finding (4b) does not support it either. If indeed the main policy tools for the EU are giving preferential access to African countries' exporters to its vast markets via preferential trade agreements in exchange for compliance with a given set of democratic norms and procedures and threatening to suspend these privileges in case these norms and procedures are not followed, we should not get this result. Nonetheless, we think that this is not enough to refute the hypothesis until further studies are conducted taking the following four issues into account.

First, in this study we did not take into account how "seriously" the EU imposed the conditionality. Studying the implementation of the IMF programs, Bird (2008, p. 41) writes "in order to work, programs need to be implemented." While assessing the effectiveness of the EU conditionality in this study, in a sense, we implicitly assumed that because the rules about good governance and corruption are in the agreements, these rules are enforced. Furthermore, there are probably political limits to enforcing good governance practices through trade links, given the existing obligations under the WTO, as well as a multitude of other EU interests in Africa. Clearly, there is a need to check the validity of this assumption.

Second, when EU companies sell their products in Africa, their representatives probably will have to fly to Africa quite frequently to strike sales deals locally. In this process, these representatives might set examples of good business practices while they are in Africa especially since some countries have implemented legislation which makes the corrupt behavior of their citizens in other countries illegal. When African countries export to the EU, however, it might be the Africans who have to travel, or trade might be arranged through a "middleman." This idea might help explain why imports have a stronger impact on corruption than exports, and this needs further exploration.

Third, we also did not take into account the increasing presence of the other players in Africa, and whether this occurrence affected the dynamics of the relationship between the EU and the African countries. As Figure 1 clearly shows, between 1984 and 2009, while these African countries were becoming more open—i.e., trade/GDP increasing—the EU was steadily becoming a smaller trade partner for Africa. For instance, while in 1989 the share of the EU in total African trade was 58.2 percent, it was 48.0 percent in 1999 and 37.0 percent in 2009.

Meanwhile, China has increasingly become a bigger player in Africa⁸ (Ademola *et. al*, 2009; De Grauwe *et. al*, 2012). As various studies have documented (Alden, 2005; Tull, 2006; Jianbo and Xiaomin, 2011), China does not mention good governance or impose conditionality unlike the EU, which in general terms advocates the “Washington Consensus” regarding good governance and has an explicit “conditionality” strategy.

Finally, as spelled out in the Cotonou Partnership Agreement, the EU is not only concerned about good governance, but also about political issues such as human rights, migration, peace, and security. These issues could be taken into account in subsequent studies.

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⁸ For different aspects of China’s relationship with Africa, see the 2009 special issue, 21(4), “China in Africa: A relationship in Transition,” of the *European Journal of Development Research*.

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Figure 1. The Increasing Importance of Trade for the 34 African Countries and the Declining Importance of the EU as a Trade Partner: 1984~2009

