AFRICAN GOVERNANCE AND DEVELOPMENT INSTITUTE

A G D I Working Paper

WP/14/040

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AGDI Working Paper

Research Department

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May 2014

Abstract

The Kodila-Tedika & Bolito-Losembe (2014, ADR) finding on no evidence of causality flowing from State fragility to classical corruption or extreme corruption could have an important influence on academic and policy debates. Using updated data (1996-2010) from 53 African countries, we provide evidence of a positive (negative) nexus between political stability/no violence and corruption-control (corruption). As a policy implication, the finding of the underlying paper maybe more expositional than factual and should be treated with caution.

JEL Classification: F52; K42; O17; O55; P16
Keywords: Fragility; Corruption; Conflicts; Africa

1. Introduction

This note is a direct response to Kodila-Tedika & Bolito-Losembe (2014, ADR) who have concluded on no causality flowing from State fragility to classical corruption or extreme corruption. The paper concludes: "*Robust empirical evidence shows a correlation between the*

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level of corruption and state fragility. In a further assessment with the econometrics of instrumental variables we find evidence of causality neither flowing from state fragility to classical corruption nor to extreme corruption" (p. 50). We postulate that there should be significant causality for two main reasons. On the one hand, an atmosphere of political instability and/or State fragility should increase the confidence about less impunity and corruption-control because resources allocated in the fight against corruption may not be optimal. On the other hand, in the absence such impunity from corruption, political instability further increases corruption. Hence, two hypotheses result from the postulation. First, State fragility has a negative effect on corruption-control. Second, State fragility increases corruption.

It is important to investigate these hypotheses because the findings of the underpinnings paper could have an important influence on policy making decisions. The rest of the note is organized as follows. Section 2 discusses the data and methodology. The empirical analysis is covered in Section 3. Section 4 concludes with policy recommendations.

2. Data and Methodology

We examine a panel of 53 African countries with annual data from World Bank development indicators for the period 1996-2010. The periodicity begins from 1996 because corruption, corruption-control and political stability indicators are only available from this period. The scope of the African continent is consistent with the underlying study motivating this note. We measure State fragility with the political stability or no violence indicator. The corruption and corruption-control indices that are employed as dependent variables are in accordance with the hypotheses stipulated in the introduction. We control for government expenditure, trade openness, GDP per capita growth, inflation and foreign direct investment (FDI). While the first-three control variables have been adopted by the underpinning study, we have added the last-two

for more subtlety in the analysis. Accordingly, the first specifications only involve the first-three while the last-two are included into the conditioning information set in the second specifications (see Table 1).

Before diving into the empirical specification, it is relevant to highlight the expected signs from the control variables. Government expenditure should increase corruption (Asongu & Jellal, 2013, p. 2196; Baliamoune-Lutz & Ndikumana, 2008). Trade openness decreases corruption (Asongu, 2014; Asongu, 2012, p. 2178). Economic prosperity increases corruption (Asongu & Jellal, 2013, p. 2196; Asongu, 2013a, p. 63), decreases corruption-control (Asongu, 2013b, p. 44) and per capital economic prosperity also increases corruption (Asongu, 2013c, p. 16). From intuition, low inflation should be favorable to corruption-control while high inflation should not; essentially because in situations of soaring food prices, many citizens revert to corrupt means to make ends meet. Like trade openness, financial globalization (FDI) is also a powerful tool in the fight against corruption (Asongu, 2014). The definition of the variables, summary statistics and correlation analysis are presented in Appendix 1, Appendix 2 and Appendix 3 respectively.

In accordance with Asongu (2013d), we adopt a system Generalized Methods of Moments (GMM) for three main reasons: it controls for the potential endogeneity in all the regressors, mitigates potential biases of the difference estimator in small samples and, does not eliminate cross-country variations. Hence, we prefer the system GMM estimation (Arellano & Bover, 1995; Blundell & Bond, 1998) to the difference estimator (Arellano & Bond, 1991) in accordance with Bond et al. (2001, pp. 3-4). The *two-step* approach is preferred to the *one-step* because it controls for heteroscedasticity. Two tests are performed to assess the validity of the models. The Arellano & Bond autocorrelation (AR(2)) test and the Sargan overidentifying restrictions (OIR) test for the absence of autocorrelation and validity of instruments respectively. We control for time-effects and ensure the instruments are less than the number of cross-sections in the

specifications by using three-year non-overlapping intervals. Hence, the basic condition for using a GMM technique has been met: N>T (53>5). We do not provide the equations in levels and first difference because the GMM estimation technique is standard and well known. However, details of the specifications and equations could be provided or disclosed upon request.

3. Empirical results

This section presents the findings of the two main hypotheses outlined in the introduction. As shown in Table 1 below, but for a thin exception (second specification of corruption), the models are overwhelmingly valid. This is essentially because the null hypotheses of the AR(2) and Sargan OIR tests are not rejected for the most part[2]. Contrary to the findings of the underlying paper, the two hypotheses are validated, notably: (1) political stability increases corruption-control and; (2) political stability mitigates corruption. In the interpretation of the incidence on corruption, note should be taken of the fact that the corruption perception index (CPI) which is our indicator for corruption is measured in decreasing order by Transparency International. In this light, high CPI values imply low levels of corruption. The significant control variable has the expected sign. Accordingly, trade openness is a good tool in the fight against corruption (Asongu, 2014).

[2] It should be recalled that, in order to examine the validity of the models, we have performed two tests, notably the Arellano and Bond test for autocorrelation which investigates the null hypothesis of no autocorrelation and the Sargan-test which examines the over-identification restrictions. The latter test investigates if instruments are uncorrelated with the error term in the equation of interest. The null hypothesis of this test is the stance that the instruments as a group are strictly exogenous (that is, they do not suffer from endogeneity). We only report AR(2) in difference because it is more relevant than the AR(1) which detects autocorrelation in levels. Overwhelmingly for almost all estimated models, we are neither able to reject the AR(2) null hypothesis for the absence of autocorrelation nor the Sargan null for the validity of the instruments.

Table 1: The effect of political stability on corruption and corruption-control

	Corruption				Corruption-Control			
Corruption (-1)	**0.655*** (0.002)**	**0.445*** (0.0003)**	**0.793*** (0.004)**	**0.533*** (0.003)**	---	---	---	---
Corruption Control (-1)	---	---	---	---	**0.967** (0.013)**	**1.057*** (0.000)**	**0.648** (0.023)**	**0.620*** (0.004)**
Constant	**1.138* (0.099)**	**2.072*** (0.002)**	0.677 (0.463)	**1.696*** (0.002)**	0.089 (0.594)	0.134 (0.381)	-0.070 (0.514)	-0.084 (0.400)
Political Stability	**0.304** (0.016)**	**0.438** (0.014)**	**0.245* (0.081)**	**0.466*** (0.002)**	0.073 (0.613)	0.042 (0.717)	0.244 (0.145)	**0.232** (0.028)**
Government Expenditure	-0.0008 (0.776)	-0.0006 (0.863)	0.006 (0.568)	-0.002 (0.824)	0.001 (0.546)	0.0006 (0.785)	0.001 (0.707)	-0.000 (0.973)
Trade	0.001 (0.336)	**0.003* (0.060)**	-0.0003 (0.935)	0.002 (0.239)	-0.001 (0.241)	-0.001 (0.131)	-0.0007 (0.523)	-0.0003 (0.673)
GDP per capita growth	-0.009 (0.676)	-0.003 (0.875)	-0.020 (0.451)	0.009 (0.771)	-0.005 (0.475)	-0.002 (0.748)	-0.001 (0.913)	0.005 (0.626)
Inflation	---	---	0.011 (0.653)	-0.006 (0.810)	---	---	0.008 (0.430)	0.002 (0.737)
Foreign Direct Investment	---	---	0.011 (0.554)	-0.001 (0.933)	---	---	0.003 (0.586)	0.001 (0.755)
Time effects	No	Yes	No	Yes	No	Yes	No	Yes
AR(2)	**-1.626 (0.103)**	-1.865* (0.062)	**-1.199 (0.230)**	**-1.581 (0.113)**	**-0.984 (0.325)**	**-0.908 (0.363)**	**-0.725 (0.468)**	**-1.112 (0.265)**
Sargan OIR	**9.496 (0.302)**	**3.372 (0.908)**	**11.265 (0.187)**	**7.483 (0.485)**	**6.428 (0.599)**	**5.669 (0.684)**	**10.231 (0.249)**	**7.217 (0.513)**
Wald (joint)	**827.48*** (0.000)**	**1184.31*** (0.000)**	**2461.93*** (0.000)**	**1330.5*** (0.000)**	**323.64*** (0.000)**	**486.39*** (0.000)**	**268.54*** (0.000)**	**426.43*** (0.000)**
Instruments	14	17	16	19	14	17	16	19
Countries	21	21	18	18	36	36	28	28
Observations	70	70	63	63	128	128	100	100

***, **, and * indicate significance at 1%, 5% and 10% levels respectively. AR(2): Second Order Autocorrelation test. OIR: Overidentifying Restrictions test. The significance of bold values is twofold. 1) The significance of estimated coefficients and the Wald statistics. 2) The failure to reject the null hypotheses of: a) no autocorrelation in the AR(2) tests and; b) the validity of the instruments in the Sargan OIR test. P-values in brackets.

4. Conclusion and policy recommendations

The Kodila-Tedika & Bolito-Losembe (2014, ADR) finding on no evidence of causality flowing from State fragility to classical corruption or extreme corruption could have an important influence on academic and policy debates. Using updated data (1996-2010) from 53 African countries, we have investigated two hypotheses to provide policy makers with the much needed guidance on the issue. We have postulated that on the one hand, an atmosphere of political instability and/or state fragility should increase the confidence of impunity owing to less corruption-control. On the other hand, in the absence such impunity from corruption, political instability further fuels corruption. Our findings have validated both hypotheses. Hence we have

provided evidence of a positive (negative) nexus between political stability/no violence and corruption-control (corruption). Differences in findings could result from data, periodicity and methodological variations. Elucidating such variations is not within the scope of this note because its purpose has been to assess if the findings of the underpinning paper withstand more empirical scrutiny. As a policy implication, the finding of the underlying paper maybe more expositional than factual and should be treated with caution.

Appendices

Appendix 1: Definitions of variables

Variable(s)	Definition(s)	Source(s)
Corruption	Corruption Perception Index represents an aggregation of perceived levels of corruption as determined by expert assessments and opinion surveys.	World Bank (WDI)
Corruption-Control	Control of corruption (estimate): captures perceptions of the extent to which public power is exercised for private gain, including both petty and grand forms of corruption, as well as 'capture' of the state by elites and private interests.	World Bank (WDI)
Political Stability/ No violence	Political stability/no violence (estimate): measured as the perceptions of the likelihood that the government will be destabilized or overthrown by unconstitutional and violent means, including domestic violence and terrorism.	World Bank (WDI)
Government Expenditure	Government Final Expenditure (% of GDP)	World Bank (WDI)
Trade Openness	Exports plus Imports of Commodities (% of GDP)	World Bank (WDI)
GDP per capita growth	Gross Domestic Product per capita growth rate (annual %)	World Bank (WDI)
Inflation	Consumer Price Index (annual %)	World Bank (WDI)
Foreign Investment	Gross Foreign Direct Investment (% of GDP)	World Bank (WDI)

WDI: World Bank Development Indicators. GDP: Gross Domestic Product.

Appendix 2: Summary statistics

	Mean	S.D	Min	Max	Obs.
Corruption	3.005	1.064	1.066	6.100	181
Corruption Control	-0.598	0.622	-2.344	0.971	265
Political Stability	-0.571	0.952	-3.229	1.143	265
Government Expenditure	4.495	8.064	-17.387	49.275	164
Trade Openness	78.340	39.979	20.980	250.95	247
GDP per capita growth rate	2.320	5.016	-11.248	38.258	257
Inflation	56.191	575.70	-45.335	8603.3	230
Foreign Direct Investment	4.706	11.354	-4.112	145.20	202

S.D: Standard Deviation. Min: Minimum. Max: Maximum. Obs: Observations.

Appendix 3: Correlation Analysis

PolSta	Gov. Exp.	Trade	GDPpcg	Inflation	FDI	Corruption	C. Control	
1.000	-0.037	0.321	0.071	-0.098	0.012	0.673	0.691	PolSta
	1.000	-0.070	0.245	-0.243	0.011	-0.095	0.056	Gov. Exp.
		1.000	0.245	0.024	0.512	0.209	0.194	Trade
			1.000	-0.105	0.577	0.077	-0.055	GDPpcg
				1.000	0.041	-0.054	-0.121	Inflation
					1.000	0.013	-0.045	FDI
						1.000	0.896	Corruption
							1.000	C. Control

PolSta: Political Stability. Gov. Exp: Government Expenditure. GDPpcg: GDP per capita growth rate. FDI: Foreign Direct Investment. C. Control: Corruption Control.

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