Institutional Persistence and African Economic Growth: Re-examination of Empirical Evidence

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Outline of Presentation

- Introduction
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- Data and Methodology
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- Conclusions

Introduction

- The aim of this research is to investigate the intra-sub-Saharan African post-colonial development disparities from the perspective of colonial history.

- Theories of Sub-Saharan African under-development:
  - Poor geography (Nunn et al., 2012; Sachs et al., 1997)
  - Ethnic fractionalisation (Easterly et al., 1997)
  - Political and structural instabilities (Easterly et al., 1997; Guillaumont et al., 1999)
  - Distortionary external and internal macroeconomic policies (Collier et al., 1999)
  - Slave raiding (Nunn 2007)
  - Extractive colonial rule (Acemoglu et al., 2002)

- Lesser is known about the development variance within Africa (Bertocchi & Canova, 2002; Englebert, 2000; p.7).

Introduction Cont'd

- It has been argued theoretically that the post-colonial development divergence between different ex-colonies is dependent on the kind of institutions they inherited from their respective colonial masters (North, 1989; 1990; Lange et al., 2006).

- Previous empirical studies have shown that different countries with different colonial masters have developed differently
  - Failure of these studies to empirically identify the mechanisms causing the development disparities

- To better understand the impact of the identity of the coloniser, further studies are needed to identify the specific role and the relative weight of different colonial institutions on post-colonial economic development of ex-colonies (Lange et al., 2006)

Introduction Cont'd

- This paper aims to provide an empirical investigation of the economic development disparities between the ex-British and French colonies based on the distinctive institutions inherited during colonisation.
  - Whether coloniser identity is a significant determinant of current economic, legal and political institutions in sub-Saharan Africa
  - Whether the inherited economic, legal and political institutions can explain the economic growth disparities between the former countries (ex-British and French colonies) with different colonial history within sub-Saharan African nations.
  - Whether colonizer identity affects post-colonial development beyond the legal origin explanations

Literature Review

- Geography and Endowment Theory (GET)
  - The role of hostile disease and lootable environment (AJR, 2001; 2002; 2003; Sokoloff & Engerman, 2000).

- National-Origin Theory (NOT)
  - The role of colonizer identity (see Grier, 1999; Lange et al., 2006; North, 1989; 1990; La Porta et al., 1998).

- Empirics
  - Legal origin and Finance (La Porta et al., 1998; Beck, 2011; Asongu, 2011).
  - Trade liberalization policies (Lange et al., 2006).

British and French Colonial Institutional Differences

British	French
Indirect rule	Direct rule
Common law	Civil law
Liberal economic institutions	Bureaucratic economic institutions

Methodology and Data

Estimation Approach

❖ The study estimated the growth regression as specify below:

$$Y_{it} = \alpha_0 + \beta_1 rpol_{it} + \beta_2 eco_{it} + \beta_3 leg_{it} + \beta_4 X_{it} + \mu_{it} \quad (1)$$

where i=1,2,3……..N and t=1,2,3…….T;

❖ Two Stage Least Squares (2SLS) was utilized for the estimation.

$$rpol_{it} = \alpha_1 + Z_1 Brit\_dummy_i + \pi_1 X_{it} + \varepsilon_{rpolit} \quad (2)$$

$$leg_{it} = \alpha_2 + Z_2 Brit\_dummy_i + \pi_2 X_{it} + \varepsilon_{legit} \quad (3)$$

$$eco_{it} = \alpha_3 + Z_3 Brit\_dummy_i + \pi_3 X_{it} + \varepsilon_{ecoit} \quad (4)$$

Data

- 29 countries that comprise the ex-British and French colonies within sub-Saharan Africa
  - Data Period ranges between 1960-2016
- **Dependent Variable**
  - Real GDP per capita (Penn World Tables 9.0)
  - GDP constant (World Bank)
- **Institutional Variables**
  - Economic institutions (Economic Freedom of the World (EFW), Economic Freedom index (EF), KunČIČ Economic institution index (ECON))
  - Political institutions (Polity (RPOL), Democracy (DEMO) and Executive constraint (XCONST))
  - Legal Institutions (legal structure and property right index (LPR), Property right index (PR)
- **Instrumental Variables**
  - Coloniser identity (1 = ex-British and Zero =French)
  - Legal origin (Klerman et al., 2011)
- **Control Variables**
  - Initial GDP growth, Gross domestic physical capital formation, Primary school enrolment, Population, CPI, Government consumption, Financial development, Trade and FDI

Empirical Results

OLS Results

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8
	Economic Institutions			**Legal Institutions**			**Political Institutions**	
EF	**0.019*** **							
	(0.00)							
EFW		**0.104*** **						
		(0.02)						
ECON			**1.201*** **					
			(0.13)					
PR				**0.002***				
				(0.00)				
LPR					**0.038*** **			
					(0.01)			
RPOL						**0.021*** **		
						(0.00)		
DEMO							0.001	
							(0.00)	
XCONST								0.001
								(0.00)
Observations	538	818	597	538	811	1482	1483	1483
R^2	0.065	0.051	0.105	0.004	0.008	0.054	0.001	0.001

OLS reduced-form regressions. Robust standard error in parenthesis. Constant term omitted for space. * p < 0.1, ** p <0.05, *** p < 0.01

Main 2SLS results without controls variables

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8
		Economic institutions		Legal institutions		Political institutions		
Panel A: 2nd Stage Estimates (Log GDP per capita is dependent variable)								
EF	**0.070*** **							
	(0.02)							
EFW		**0.759*** **						
		(0.13)						
ECON			**1.538*** **					
			(0.36)					
LPR				**0.378*** **				
				(0.05)				
PR					**0.020*** **			
					(0.00)			
RPOL						**0.062*** **		
						(0.01)		
DEMO							**0.066*** **	
							(0.02)	
XCONST								**0.087*** **
								(0.03)
Panel B: 1st Stage Estimates (EF/EFW/ECON/PR/LPR/RPOL/DEMO/XCONST is the dependent variable)								
Brit_dummy	**3.074*** **	**0.481*** **	**0.118*** **	**0.979*** **	**10.641*** **	**3.790*** **	**3.604*** **	**2.703*** **
	(0.63)	(0.08)	(0.11)	(0.08)	(1.23)	(0.32)	(0.84)	(0.84)
Observations	538	818	597	811	538	1482	1483	1483
Partial R^2	0.042	0.042	0.154	0.157	0.121	0.0895	0.012	0.007
P(DWH)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
F(Effective)	24.063	37.045	110.975	16.38	75.347	142.231	18.407	10.424
Crit(tau5)	16.38	16.38	16.38	16.38	16.38	16.38	16.38	16.38
Crit(tau10)	8.96	8.96	8.96	8.96	8.96	8.96	8.96	8.96
Crit(tau20)	6.66	6.66	6.66	6.66	6.66	6.66	6.66	6.66
Crit(tau30)	5.53	5.53	5.53	5.53	5.53	5.53	5.53	5.53

- Robust standard error in parenthesis. Partial R2 is the first stage partial R-square of the endogenous regression (i.e. EF/EFW/ECON/PR/LPR/RPOL/DEMO/XCONST). P(DWH) is the p-value of Durbin-Wu-Hausman (DWH) test of endogeneity. F(Effective) is robust F-statistics that should be compared to the critical values to determine the weakness of instrumental variable. The constant term is omitted for space. * p < 0.1, ** p <0.05, *** p < 0.01

Main 2SLS results with control variables

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8
	Economic Institutions			Legal Institutions			Political Institutions	
Panel A: 2nd Stage Estimates (Log GDP per capita is dependent variable)								
EF	**0.032*** **							
	(0.01)							
EFW		**0.192** **						
		(0.07)						
ECON			**0.744*** **					
			(0.20)					
LPR				**0.083*** **				
				(0.02)				
PR					**0.013*** **			
					(0.00)			
RPOL						**0.074** **		
						(0.03)		
DEMO							**0.027*** **	
							(0.01)	
XCONST								**0.030** **
								(0.01)
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Fixed effect	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Panel B: 1st Stage Estimates (EF/EFW/ECON/PR/LPR/RPOL/DEMO/XCONST is the dependent variable)								
Brit_dummy	**2.813*** **	**0.457*** **	**0.140*** **	**1.096*** **	**6.816*** **	**1.300** **	**3.563*** **	**3.183** **
	(0.66)	(0.11)	(0.02)	(0.10)	(1.69)	(0.54)	(1.27)	(1.26)
Observations	329	472	321	470	329	663	663	663
R^2	0.904	0.768	0.918	0.896	0.904	0.439	0.654	0.587
Partial R^2	0.056	0.033	0.208	0.177	0.056	0.009	0.014	0.01
P(DWH)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
F(Effective)	18.041	18.429	77.610	113.613	16.287	5.814	7.870	6.345

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Robustness Check: Legal origin or Coloniser identity?

- Ex-colonies may not necessarily solely adopt and practice the legal system of their colonial masters (Klerman et al., 2011; Rostowski et al., 2006; Treisman, 2000)

- Bivariate correlation between the legal origin (Common law dummy) and coloniser identity (Brit_dummy) in our sample is **0. 648**

Legal origin or Coloniser identity?

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8
	Economic Institutions			Legal Institutions		Political Institutions		
Panel A: 2nd Stage Estimates (Log GDP per capita is dependent variable)								
EF	**0.032*** **							
	(0.01)							
EFW		**0.193*** **						
		(0.07)						
ECON			**0.840*** **					
			(0.19)					
LPR				**0.079*** **				
				(0.02)				
PR					**0.013*** **			
					(0.00)			
RPOL						**0.006*** **		
						(0.00)		
DEMO							**0.024*** **	
							(0.01)	
XCONST								**0.031** **
								(0.01)
Control	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Fixed effect	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Panel B: 1st Stage Estimates (EF/EFW/ECON/LPR/PR/RPOL/DEMO/XCONST is the dependent variable)								
Brit_dummy	2.820	**0.479** **	**0.259*** **	**0.888*** **	**6.533***	**11.464*** **	**6.583*** **	**3.667** **
	(1.79)	(0.19)	(0.04)	(0.21)	(3.93)	(1.08)	(1.58)	(1.51)
Common law	-0.008	-0.028	**-0.135*** **	0.272	0.312	**-12.343*** **	**-3.667*** **	-0.588
	(1.66)	(0.18)	(0.04)	(0.25)	(3.71)	(1.15)	(1.35)	(1.25)
Observations	329	472	321	470	329	663	663	663
R^2	0.904	0.767	0.912	0.897	0.906	0.930	0.723	0.582
Partial R^2	0.056	0.033	0.247	0.179	0.056	0.197	0.017	0.011
Sargan test	0.068	0.499	0.185	0.118	0.053	0.723	0.358	0.834
P(DWH)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Using GDP constant 2010 as dependent variable

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8
	Economic Institutions			Legal Institutions		Political Institutions		
Panel A: 2nd Stage Estimates (Log GDP constant (2010) is dependent variable)								
EF	**0.024****							
	(0.01)							
EFW		**0.166****						
		(0.07)						
ECON			**0.579*****					
			(0.21)					
PR				**0.009****				
				(0.00)				
LPR					**0.073*****			
					(0.02)			
RPOL						**0.066****		
						(0.03)		
DEMO							**0.024****	
							(0.01)	
XCONST								**0.027****
								(0.01)
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Fixed Effect	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Panel B: 1st Stage Estimates (EF/EFW/ECON/LPR/PR/RPOL/DEMO/XCONST is the dependent variable)								
Brit_dummy	**2.548*****	**0.457*****	**0.140*****	**6.469*****	**1.096*****	**1.307****	**3.529*****	**3.133****
	(0.66)	(0.11)	(0.02)	(1.66)	(0.10)	(0.53)	(1.24)	(1.23)
Observations	343	472	321	343	470	675	675	675
R^2	0.912	0.786	0.918	0.922	0.881	0.579	0.724	0.672
Partial R^2	0.013	0.033	0.278	0.051	0.177	0.009	0.014	0.011
P(DWH)	0.010	0.000	0.000	0.025	0.000	0.000	0.000	0.000
F(Effective)	15.085	18.429	77.610	15.188	113.613	6.015	8.039	6.[illegible]

Conclusions and Policy Implications

- In this paper, we document a high correlation between the coloniser identity and quality of current economic, legal and political institutions.
- We also estimate large effects of institutional quality variation caused by the coloniser identity on GDP per capita.
- Evidence also shows that ex-British colonies with the pure common law tradition relative to the ex-British colonies with the mixed-legal system tend to have better legal and property right protection institutions but have less economic and political institutional quality.
- This study has demonstrated that different colonial masters that colonised Africa serve as one of the fundamental exogenous sources of variation in institutional quality thereby causing post-colonial development divergence among countries within sub-Saharan Africa.
- It is important to interpret our findings with caution since we do not mean institutions are not subject to change, but it is difficult to change.
- To achieve sustainable economic development in Africa, institutions that ensure property right protection and lower transaction cost should be pursued.

Thank You

Sub-Saharan ex-colonies of the British and French before gaining independence

Former British colonies	Colonisation date	Independence date	Income classifications	Legal System
Uganda	1885	1962	Low income	Common law
Botswana	1885	1966	Upper Middle	Mixed legal origin
Zambia	1891	1964	Low income	Common law
Zimbabwe	1890	1981	Low income	Mixed legal origin
Malawi	1891	1964	Low income	Common law
Mauritius	1715	1968	Upper Middle	Mixed legal origin
Nigeria	1861	1960	Lower Middle	Common law
Sierra Leone	1787	1961	Lower income	Common law
Swaziland	1902	1968	Lower middle	Common law
Gambia	1765	1965	Low income	Common law
Ghana	1874	1957	Lower middle	Common law
Kenya	1885	1963	Lower middle	Common law
Lesotho	1867	1966	Lower middle	Mixed legal origin
South Africa	1795	1961	Upper middle	Mixed legal origin
Seychelles	1744	1976	High income	Mixed legal origin
Former French colonies				
Madagascar	1885	1960	Low income	Civil law
Benin	1909	1960	Low income	Civil law
Mali	1898	1959	Low middle	Civil law
Mauritania	1903	1960	Low income	Civil law
Burkina Faso	1895	1960	Low income	Civil law
Niger	1861	1960	Low income	Civil law
Central A. Republic	1880	1960	Low income	Civil law
Senegal	1758	1959	Low income	Civil law
Chad	1900	1960	Low income	Civil law
Congo Brazzaville	1897	1960	Lower middle	Civil law
Gabon	1839	1960	Upper middle	Civil law
Guinea	1898	1958	Low income	Civil law
Ivory Coast	1843	1960	Lower middle	Civil law
Togo	1914	1960	Low income	Civil law

Correlation Matrix

	rgdpna (1)	Initial (2)	pse (3)	pop (4)	gcfgdp (5)	cpi (6)	credit (7)	trade (8)	govc (9)	fdi (10)	EF (11)	Brit_dummy (12)	common law (13)	EFW (14)	ECON (15)	PR (16)	LPR (17)	Rpol (18)	Demo (19)	Xconst (20)
(1)	1.000																			
(2)	0.125	1.000																		
(3)	0.180	-0.007	1.000																	
(4)	0.772	0.107	-0.040	1.000																
(5)	-0.307	0.018	0.065	-0.410	1.000															
(6)	0.221	0.005	0.210	0.130	-0.008	1.000														
(7)	0.407	-0.008	0.147	0.069	-0.056	0.140	1.000													
(8)	-0.163	-0.140	0.265	-0.531	0.244	-0.075	0.163	1.000												
(9)	0.894	0.108	0.073	0.613	-0.109	0.199	0.538	-0.195	1.000											
(10)	0.087	0.017	0.030	0.218	-0.103	0.036	-0.009	0.057	0.001	1.000										
(11)	0.263	0.230	0.099	0.082	0.234	0.314	0.272	-0.275	0.442	-0.080	1.000									
(12)	0.620	0.191	0.367	0.451	-0.303	0.314	0.371	-0.172	0.539	0.173	0.398	1.000								
(13)	0.381	0.106	0.297	0.521	-0.382	0.179	-0.074	-0.305	0.172	0.198	0.054	0.763	1.000							
(14)	0.263	0.049	0.496	0.088	0.088	0.276	0.281	0.132	0.271	0.138	0.412	0.448	0.248	1.000						
(15)	0.430	0.284	0.250	0.259	0.079	0.292	0.315	-0.241	0.512	-0.002	0.759	0.706	0.410	0.421	1.000					
(16)	0.120	0.155	0.115	-0.093	0.045	0.176	0.273	-0.021	0.211	-0.070	0.668	0.349	0.054	0.298	0.465	1.000				
(17)	0.286	0.119	0.262	0.045	0.125	0.339	0.376	0.014	0.390	0.079	0.564	0.475	0.146	0.795	0.471	0.464	1.000			
(18)	0.298	0.257	-0.054	0.207	0.016	0.202	0.321	-0.068	0.370	-0.047	0.420	0.189	-0.130	0.332	0.393	0.329	0.503	1.000		
(19)	0.109	0.188	0.093	0.043	0.377	0.122	0.070	-0.064	0.134	-0.072	0.226	0.088	-0.052	0.143	0.192	0.227	0.251	0.360	1.000	
(20)	0.090	0.176	0.114	0.043	0.380	0.109	0.017	-0.084	0.099	-0.058	0.185	0.087	-0.004	0.101	0.161	0.181	0.190	[illegible]	0.987	1.000