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Fighting African capital flight: trajectories, dynamics, and tendencies

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Abstract

This study provides a harmonization framework for common capital flight policies in Africa. It builds on evidence of persistent extreme poverty in the continent to assess how common measures can be adopted by sampled countries on one cause of extreme poverty: capital flight. The dataset is sub-divided into fundamental characteristics of African capital flight based on income levels, legal foundations, natural resources, political stability, regional proximity, and religious domination. The main finding shows that from a projection date of 2010, a feasible timeframe for harmonizing policies is between 2016 and 2023. This timeframe coincides with the beginning of the post-2015 agenda on sustainable development goals.

Keywords: Econometric modeling, Capital flight, Poverty, Africa

JEL classification: C50, E62, F34, O19, O55

Introduction

There are at least four reasons for reviewing Asongu (2014a) on "Fighting African Capital Flight: Empirics on Benchmarking Policy Harmonization": (i) recent extreme poverty trends in Sub-Saharan Africa (SSA); (ii) a critique of Piketty's *Capital in the twenty-first Century* that builds on capital flight to elucidate the sub-region's extreme poverty; (iii) a recent methodological innovation for common policy initiatives based on negative macroeconomic and institutional signals (reverse Solow-Swan); and (iv) the imperative to account for more fundamental characteristics of the sub-region's development in order to inform policy formulation and enable a robust response.

First, an April 2015 World Bank report on the attainment of the Millennium Development Goal (MDG) extreme poverty target has revealed that extreme poverty has been decreasing in all regions of the world, with the exception of Africa, where 45% of countries in SSA are substantially off track in terms of achieving the MDG extreme poverty target (World Bank, 2015). As documented in recent literature (Efobi et al., 2018; Asongu and Kodila-Tedika, 2017; Tchamyou, 2019a, 2019b; Tchamyou et al., 2019; Asongu & le Roux, 2017, 2019), whereas extreme poverty has been declining in all regions of the world, it has been increasing in SSA. This is despite over two decades of growth resurgence that began in the mid-1990s.

Second, responding to the increasing poverty levels in SSA, Asongu and Nwachukwu (2016a) present a critique of Piketty (2014) *Capital in the twenty-first Century*. Building on: (i) responses from Kenneth Rogoff and Joseph Stiglitz; (ii) post-Washington

Consensus paradigms; and (iii) underpinnings from Boyce-Fofack-Ndikumana and Solow-Swan, Asongu and Nwachukwu (2016a) conclude that extreme poverty in SSA would increase as long as the return on political economy (or illicit capital flight) is higher than the growth rate in the sub-region.

Third, a recent stream of literature builds on theoretical underpinnings of neoclassical growth models to propose the need for common policies based on negative macroeconomic and institutional signals. In essence, whereas the theoretical underpinnings of income convergence have exclusively been limited to catch-up in positive signals, a new stream of literature is evolving on catch-up in negative signals. According to this stream, it is more relevant to initiate common policies based on negative signals because these are policy syndromes by conception and definition. The three most prominent studies in this stream of literature are: (i) Asongu (2013) on harmonizing policies against software piracy; (ii) Asongu and Nwachukwu (2016b), who predicted the 2011 Spring using negative signals in institutional and macroeconomic variables; and (iii) Asongu (2014a) on benchmarking policy harmonization against capital flight in SSA.

Fourth, Asongu (2014a) uses two fundamental characteristics to project horizons for common policies against capital flight in SSA. We extend the underlying study by accounting for income levels, legal foundations, regional proximity, and religious domination. In essence, accounting for more fundamental characteristics of the sub-region's development is essential in order to inform policy formulation and enable a robust response. Accordingly, upholding blanket policies in the battle against capital fight may not be effective unless they are contingent on fundamental characteristics and prevailing trajectories of capital flight in SSA. Hence, policy makers are most likely to ask the following three questions before considering the harmonization of policies on capital flight: (i) Is capital flight converging within SSA? (ii) If so, what is the degree and timeframe of the convergence process? (iii) For which relevant fundamental characteristics of capital flight do answers to the first and second questions apply? While an answer to the first question will guide the feasibility of harmonizing blanket policies, the answer to the second will determine an optimal timeframe for the blanket policies. However, ultimately, the answer to the third (given that the first and second questions are already answered), will determine the feasibility of, timeframe for, and exclusiveness (or non-arbitrariness) of the common policies. This third question is the most relevant because it underlines the need for common policies to be contingent on the prevailing speeds of, and time required for, full (100%) convergence within each identified fundamental characteristic of capital flight.

The focus of the research also departs from contemporary literature on capital flight, which has been oriented towards, inter alia: the connection between fiscal policy and capital flight (Muchai & Muchai, 2016); lessons on causes and effects of capital flight from Africa (Ndikumana, 2016); the connection between capital flight and public social expenses in Madagascar (Ramiandrisoa and Rakotomanana, 2016) and Congo-Brazzaville (Moulemvo, 2016); insights into relationships between mis-invoicing in trade and the flight of capital from Zimbabwe by Kwaramba et al. (2016); the nexus between natural resources and capital flight in Cameroon (Mpenya et al., 2016); how capital flight is related to tax income in Burkina Faso (Ndiaye & Siri, 2016); linkages between terrorism, capital flight, and military expenditure (Efobi & Asongu, 2016;

Asongu & Amankwah-Amoah, 2018); the effects of the institutional environment on the nexus between capital flows and capital flight by Gankou and Bendoma (2016); the bundling and unbundling of institutions in the fight against capital flight (Asongu & Nwachukwu, 2017); and how terrorism sustains the addiction to capital flight (Asongu et al., 2019).

The rest of the paper is organized in the following manner. Section 2 presents the data and methodology, Section 3 the empirical analysis and discussion of results, and Section 4 concludes.

Data and methodology

Data

The research focuses on 37 countries in Africa, using data for the period 1980 to 2010 from a plethora of sources: Boyce and Ndikumana (2012a); the African Development Indicators (ADI); and the Financial Development and Structure Database (FDSD) of the World Bank. The geographical and temporal scope of the research is contingent on the availability of data at the time of the study. The capital flight data come from Boyce and Ndikumana (2012a), and at the time of the study only 37 countries were available for the corresponding periodicity. Insights into the sampled countries and related categories are disclosed in Appendix 4. In what follows, some essential points surrounding the selection of data are clarified, notably: (i) the determination of fundamental features, (ii) how the capital flight measure is comparable and compatible and (iii) choice of control variables.

Determination of fundamental characteristics

Building on the attendant scholarship, it is not feasible to establish convergence when sampled countries exhibit significant heterogeneity (Asongu, 2013). In view of improving the homogenous characterization of the dataset, it is classified based on certain fundamental characteristics pertaining to capital flight. In the choice of these fundamental features, governance (inter alia, regulation quality, corruption-control, and transparency) and macroeconomic features have the shortcoming of being dynamic over time. Therefore, an adopted threshold may be inconsistent within the sampled periodicity, especially given the length of the sample (i.e., a 30-year span).

In light of the above, the research follows Weeks (2012) in the selection of fundamental features, using petroleum-exporting and conflict-affected countries, inter alia. In addition to these features, this study uses the following categorizations: religious domination, legal foundations, and income levels. Whereas the categorization approach employed by Weeks (2012) is exclusive, there is a consensus in the literature that "conflicts" and political strife, as well as a reliance on the petroleum industry, influence the macroeconomic performance of African countries (Boyce & Ndikumana, 2012a, 2012b). Moreover, there are some apparent issues in the assignment of countries to the selected categories on an exclusive and non-arbitrary basis. In order to avoid repetition, more information on the adopted categories can be found in Asongu (2014a), which builds on a body of literature for the categorization of countries, notably: Weeks (2012), Boyce and Ndikumana (2003, 2012a), La Porta et al. (1998) and Asongu (2014b).

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Comparability and compatibility of the capital flight measurement

There are two principal shortcomings associated with the capital flight measurement: (i) it is not compatible with underpinnings of the convergence theory, and (ii) it is not comparable with other variables in the study. The measurement of capital flight from Boyce and Ndikumana (2012a) is expressed in constant 2010 USD (in millions). Two conclusions can be drawn from the nature of the indicator: on the one hand, the indicator cannot be compared with attendant control variables that are largely expressed in current USD-GDP ratio; on the other, the indicator is incompatible with the GDP-centric endogenous indicators from the attendant convergence scholarship. In order to tackle the discussed concerns, this study is consistent with Asongu (2014a) by first converting current GDP to constant 2010 terms. The value obtained is then divided by 1,000,000, from which values in terms of "GDP constant of 2010 USD (in millions)" are obtained. The last step of the process consists of dividing the capital flight values from the second step by "GDP constant of 2010 USD (in millions)". As apparent in Appendix 1, the transformation produces a measurement of capital flight that is compatible with the theoretical underpinnings pertaining to the convergence literature, and with the other variables.

Control variables

In accordance with Asongu (2014a), 14 variables are adopted for the conditioning information set. These elements in the conditioning information set are used in two distinct specifications that account for trade and financial globalization (i.e., trade openness, private capital flows, and foreign direct investment), expenditure of the government (i.e., public investment and government spending), economic prosperity (i.e., GDP per capita growth and GDP growth), institutional quality (i.e., rule of law and regulation quality), the stability of prices (i.e., inflation), financial development (i.e., liquid liabilities and money supply), and development assistance (entailing total foreign aid and foreign aid from the DAC[1] countries). It is worthwhile to clarify that the choice of the variables is consistent with the theoretical insights into conditional convergence, which maintain that if there are disparities between countries in institutional and macroeconomic features that are exogenous to capital flight, conditional convergence is likely to be apparent. According to Asongu (2015), globalization drives capital flight. Boyce and Ndikumana (2012b) maintain that one of the most critical mechanisms by which government funds are stolen is through public spending. Weeks (2012) posits that capital flight is associated with high dependence on foreign aid and low quality of institutions. It is documented in the literature that investors prefer investing in economies that are less characterized by features of ambiguity (Kelsey & le Roux, 2017, 2018) such as very high inflation. In line with Boyce and Ndikumana (2003), high levels of economic growth that are not driven by petroleum exports are linked with lower levels of capital flight, in the light of higher anticipated returns from investment. Insights into the summary statistics, correlation matrix, and definitions of variables are presented in Appendix 1, Appendix 2, and Appendix 3, respectively.

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Methodology

This research uses the beta (β) convergence technique that is in line with the methodological motivations of the paper. This is consistent with literature that emphasizes the need for the adopted estimation technique to be compatible with data behavior and the study's objective (Chao et al., 2019; Zhang et al., 2019; Li et al., 2014, 2016; Kou et al., 2012, 2014, 2016, 2019, 2019). This procedure of estimation is typically in line with the income catch-up scholarship that builds on models of neoclassical growth, notably: Baumol (1986); Barro and Sala-i-Martin (1992, 1995), and Mankiw et al. (1992). The attendant theoretical insights have been extended to other areas of development studies, including financial markets and financial intermediary developments (Narayan et al., 2011; Tchamyou & Asongu, 2017; Tchamyou et al., 2018; Efobi et al., 2019).

Following the attendant convergence studies (Fung, 2009; Asongu, 2013), Eq. (1) and Eq. (2) below are the main specifications used to assess conditional convergence if $W_{i,\ t}$ is taken as strictly exogenous.

$$\ln\left(Y_{i,t}\right) - \ln\left(Y_{i,t-\tau}\right) = \beta \ln\left(Y_{i,t-\tau}\right) + \delta W_{i,t-\tau} + \eta_i + \xi_t + \varepsilon_{i,t} \tag{1}$$

$$\ln\left(Y_{i,t}\right) = \sigma \ln\left(Y_{i,t-\tau}\right) + \delta W_{i,t-\tau} + \eta_i + \xi_t + \varepsilon_{i,t} \tag{2}$$

Where $Y_{i,\ t}$ represents the measure of capital flight of country i in period t. $\sigma = 1 + \beta$. $W_{i,\ t}$ denotes a vector of capital flight determinants, η_i reflects a country-specific effect, ξ_t is a time-specific constant, and $\varepsilon_{i,\ t}$ an error term. In light of the neoclassical growth underpinnings discussed in the preceding paragraph, a statistically significant negative coefficient on β in Eq. (1) implies that, countries that are comparatively close to their steady states in terms of changes in capital flight will be characterized by a slowdown in capital flight growth (Narayan et al., 2011). Within the same framework, as documented in Fung (2003) and in contemporary literature on convergence, if $0 < |\sigma| < 1$ in Eq. (2), it follows that $Y_{i,\ t}$ is stable dynamically with a capital flight growth rate trend that is similar to that of W_t, and with a corresponding height relative to the level of W_t. These indicators are encapsulated in $W_{i,\ t-\tau}$, and the individual effects η_i are measurements of the long-term capital flight convergence path. It follows that the country-specific effect η_i articulates other drivers of the steady state of the country that are not observed in $W_{i,\ t-\tau}$.

In order to eliminate fixed effects that can cause endogeneity owing to the correlation between the lagged outcome variable and fixed effects, the difference of Eq. (2) is taken to produce Eq. (3).

$$\ln\left(Y_{i,t}\right) - \ln\left(Y_{i,t-\tau}\right) = \sigma \ln\left(Y_{i,t-\tau} - Y_{i,t-2\tau}\right) + \delta\left(W_{i,t-\tau} - W_{i,t-2\tau}\right) + \left(\xi_{i,t} - \xi_{i,t-\tau}\right) + \left(\varepsilon_{i,t} - \varepsilon_{i,t-\tau}\right) \tag{3}$$

Eq. (2) and Eq. (3) are then combined within a framework of a generalized method of moments (GMM), that ensures parallel conditions between the dependent variables and error terms by using lagged differences of the regressors as instruments in Eq. (2) and lagged levels of the regressors as instruments in Eq. (3). The choice of the system estimator of the GMM technique (Arellano & Bond, 1991) over the difference estimator of the same technique (Arellano & Bover, 1995; Blundell & Bond, 1998) is

motivated by the need to obtain more efficient estimates, as Bond et al. (2001) document. The specification is two-step in order to account for heteroscedasticity.

As Islam maintains ((1995), 14), it is not appropriate to assess convergence using yearly time spans because these are too short, and consequently short-term disturbances may persist. Therefore, given a dataset spanning 31 years, the research follows Asongu (2013) in employing two-year data averages in terms of non-overlapping intervals (NOI). In addition to the justification provided above, four more additional motivations are worth clarifying. (i) While NOI that are characterized by higher numerical values absorb more short-term disturbances, there is also an associated shortcoming of having estimated models that are weakened in the light of the information criteria used to assess and validate them. Therefore, the selection of the two-year NOI over NOIs with higher numerical values is also motivated by the need to take on board as many time series properties as possible. (ii) As a corollary to the preceding point, two-year NOIs are associated with greater degrees of freedom that are relevant for the modeling of conditional convergence. (iii) Consistent with Asongu (2013), the choice of higher numerical NOIs comes with the cost of low convergence rates and corresponding lengthier time spans to full convergence, which may not reflect the reality on the ground. For example, a policy recommendation with Absolute Convergence (AC) and Conditional Convergence (CC) of 47.9 years and 40.3 years respectively (based on the three-year NOI) for petroleum exporting countries (in the system GMM results) may not be welcomed by policy makers because it is a distant prospect and does not reflect the urgency of the capital flight issue under consideration. (iv) From an exploratory visual analysis, it is apparent that evidence of persistence in short-term or business-cycle disturbances is not associated with capital flight. Hence, the coefficient of auto-regression is 2 (i.e., τ is set to 2) and the research computes the implied convergence rate by calculating σ/2.

Accordingly, the estimated coefficient of the lagged difference outcome variable is divided by the number of NOIs (i.e., 2) because it has been employed to absorb short-term disturbances. In essence, the criterion for assessing convergence is that the absolute value of the estimated lagged coefficient should be within the interval of zero and one $(0 < |\sigma| < 1)$. Hence, when the estimated lagged dependent variable falls within this interval in a specific fundamental characteristic, convergence can be established. The corresponding interpretation is that past variations induce a less proportionate influence on future variations, indicating that the difference in the left-hand side of Eq. (3) is decreasing over time given that the country is converging to a steady state (Asongu, 2013).

Empirical analysis
Presentation of results
This section looks at three principal concerns: (i) investigation of the presence of convergence; (ii) computation of the speed of convergence; and (iii) determination of the time needed for full (100%) convergence. The summary of overall findings is presented in Table 1 in which the three concerns are addressed. Findings for absolute (unconditional) and conditional convergence are presented in Table 2 and Tables 3-4 respectively.

Table 1 Summary of results on Absolute and Conditional Convergences

	Income Levels				Legal Origins		Religious Dom.		Regions		Resources		Stability		Africa
	UMI	LMI	MI	LI	English	French	Christ.	Islam	SSA	NA	Oil	Non-oil	Conflict	Non-co.	
Panel A: Absolute Convergence with Specifications in Table 2															
Absolute C (AC)	Yes	No	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	No	Yes
% of A.C	2%	n.a	2%	33.10%	33.05%	12.50%	33.05%	n.a	33.05%	17.70%	15.55%	33.05%	33.11%	n.a	33.05%
Years to A. C	100Yrs	n.a	100Yrs	6.04Yrs	6.05Yrs	16Yrs	6.05Yrs	n.a	6.05Yrs	11.2Yrs	12.8Yrs	6.05Yrs	6.04Yrs	n.a	6.05Yrs
Panel B: Conditional Convergence with Specifications in Table 3															
Conditional C (CC)	No	No	No	No	No	No	No	No	Yes	No	No	Yes	No	No	No
% of C.C	n.a	n.a	n.a	n.a	n.a	n.a	n.a	n.a	11.10%	n.a	n.a	11.25%	n.a	n.a	n.a
Years to C. C	n.a	n.a	n.a	n.a	n.a	n.a	n.a	n.a	18.1Yr	n.a	n.a	17.7Yrs	n.a	n.a	n.a
Panel C: Conditional Convergence with Specifications in Table 4															
Conditional C (CC)	Yes	No	No	Yes	No	Yes	Yes	No	Yes	No	Yes	No	Yes	Yes	Yes
% of C.C	16.6%	n.a	n.a	20.05%	n.a	16.40%	16.40%	n.a	16.55%	n.a	15.65%	n.a	29.75%	16.88%	16.50%
Years to C. C	12Yrs	n.a	n.a	9.97Yrs	n.a	12.1Yrs	12.1Yrs	n.a	12Yrs	n.a	12.7Yrs	n.a	6.72Yrs	11.8Yrs	12.1Yrs

AC Absolute Convergence, *CC* Conditional Convergence, *Yrs* Years, *UMI* Upper Middle Income, *LMI* Lower Middle Income, *MI* Middle Income, *LI* Low Income, *English* English Common-law, *French* French Civil-law, *Christ* Christianity dominated countries, *Islam* Islam dominated countries, *SSA* Sub-Saharan Africa, *NA* North Africa. Oil: Petroleum exporting countries. Non-oil: Countries with no significant exports in petroleum. Conflict: Countries with significant political instability. Non-co: Countries without significant political instability. Dom: Domination

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Table 2 Absolute Convergence

	Income Levels				Legal Origins		Religious Dom.		Regions		Resources		Stability		Africa
	UMI	LMI	MI	LI	English	French	Christ.	Islam	SSA	NA	Oil	Non-oil	Conflict	Non-co.	
Initial	0.04***	0.092	0.04***	0.662***	0.661***	−0.25***	0.661***	0.167	0.661***	0.354**	−0.31***	0.661***	0.662***	−0.077	0.661***
	(0.000)	(0.813)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.421)	(0.000)	(0.030)	(0.000)	(0.000)	(0.000)	(0.484)	(0.000)
AR(1)	0.994	−1.381	0.939	−1.051	−1.005	−1.078	−1.056	−1.647*	−1.057	−1.398	−1.000	−1.009	−1.001	−0.773	−1.057
	(0.320)	(0.167)	(0.347)	(0.293)	(0.314)	(0.280)	(0.290)	(0.099)	(0.290)	(0.162)	(0.317)	(0.312)	(0.316)	(0.439)	(0.290)
AR(2)	−0.999	0.676	−0.998	−0.991	−1.010	−0.921	−1.002	0.525	−1.002	−1.244	−1.038	−1.009	−0.999	−0.727	−1.002
	(0.317)	(0.499)	(0.318)	(0.321)	(0.312)	(0.357)	(0.316)	(0.598)	(0.316)	(0.213)	(0.299)	(0.312)	(0.317)	(0.467)	(0.316)
Sargan OIR	4.854	10.928	14.590	7.313	2.567	18.113	11.487	8.424	14.870	3.207	6.594	7.191	6.012	21.551	15.022
	(1.000)	(1.000)	(1.000)	(1.000)	(1.000)	(1.000)	(1.000)	(1.000)	(1.000)	(1.000)	(1.000)	(1.000)	(1.000)	(1.000)	(1.000)
Wald	674***	0.055	938***	8e+5***	2e+6***	25***	4e+5***	0.645	4e+5***	4.69**	2087***	2e+6***	7e+7***	0.488	442672***
	(0.000)	(0.813)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.421)	(0.000)	(0.030)	(0.000)	(0.000)	(0.000)	(0.484)	(0.000)
Countries	5	11	16	19	15	20	25	10	31	4	8	27	11	24	35
Observations	70	158	233	271	219	285	359	145	444	60	115	389	161	343	504

***, **,*: significance levels of 1%, 5% and 10% respectively. AR(2): Second Order Autocorrelation test. *OIR* Over-identifying Restrictions test. Initial: lagged endogenous estimated coefficient. Wald: test for the joint significance of estimated coefficients. *AC* Absolute Convergence, *CC* Conditional Convergence, *Yrs* Years, *UMI* Upper Middle Income, *LMI* Lower Middle Income, *MI* Middle Income, *LI* Low Income. *English* English Common-law, *French* French Civil-law, *Christ* Christianity dominated countries, *Islam* Islam dominated countries, *SSA* Sub-Saharan Africa, *NA* North Africa, *Oil* Petroleum exporting countries, *Non-oil*: Countries with no significant exports in petroleum. Conflict: Countries with significant political instability. Non-co: Countries without significant political instability. 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(1) and AR(2) tests and; b) the validity of the instruments in the Sargan OIR test

Table 3 Conditional Convergence (First Specification)

	Income Levels				Legal Origins		Religious Dom.		Regions		Resources		Stability		Africa
	UMI	LMI	MI	LI	English	French	Christ.	Islam	SSA	NA	Oil	Non-oil	Conflict	Non-co.	
Initial	− 0.011	− 0.130	− 0.003	− 0.318	− 0.015	− 0.297	− 0.219	0.566	**− 0.222***	1.247	0.002	**− 0.22****	− 0.060	0.005	− 0.215
	(0.932)	(0.813)	(0.976)	(0.398)	(0.897)	(0.187)	(0.158)	(0.667)	**(0.086)**	(0.451)	(0.996)	**(0.044)**	(0.940)	(0.949)	(0.104)
Constant	0.051	0.013	0.145	− 0.072	− 0.136	− 0.247	− 0.0002	− 0.073	− 0.068	− 0.002	− 0.043	**− 0.193***	− 0.064	0.011	− 0.044
	(0.480)	(0.693)	(0.618)	(0.644)	(0.346)	(0.430)	(0.997)	(0.404)	(0.620)	(0.976)	(0.632)	**(0.097)**	(0.724)	(0.914)	(0.695)
Gov't Expenditure	− 0.002	− 0.0002	− 0.008	0.0002	− 0.003	0.002	**− 0.002***	0.001	− 0.002	− 0.0003	0.0001	− 0.0007	− 0.0009	− 0.004	− 0.001
	(0.897)	(0.709)	(0.184)	(0.939)	(0.276)	(0.722)	**(0.074)**	(0.590)	(0.399)	(0.441)	(0.983)	(0.806)	(0.735)	(0.128)	(0.483)
Trade	− 0.0004	0.000	− 0.0003	0.0003	0.0001	0.001	0.000	0.0003	0.0001	–	0.001	0.0004	0.002	0.0001	0.000
	(0.776)	(0.933)	(0.549)	(0.875)	(0.775)	(0.491)	(0.805)	(0.804)	(0.735)		(0.505)	(0.422)	(0.585)	(0.746)	(0.937)
Foreign Direct Ivt.	–	− 0.002	− 0.0005	− 0.004	0.0002	− 0.006	− 0.001	− 0.005	− 0.0001	–	–	− 0.0002	–	− 0.001	0.001
		(0.152)	(0.838)	(0.768)	(0.942)	(0.715)	(0.560)	(0.765)	(0.970)			(0.929)		(0.755)	(0.676)
GDP Growth	–	0.007	0.013	0.008	0.017	0.025	0.013	0.015	0.021	–	–	**0.033***	–	0.017	0.019
		(0.361)	(0.631)	(0.308)	(0.501)	(0.270)	(0.270)	(0.461)	(0.304)			**(0.055)**		(0.401)	(0.274)
Regulation Quality	–	–	− 0.020	− 0.149	**− 0.054***	− 0.090	− 0.009	–	− 0.041	–	–	− 0.019	–	0.007	**− 0.04****
			(0.533)	(0.367)	**(0.078)**	(0.545)	(0.751)		(0.210)			(0.663)		(0.868)	**(0.043)**
Financial Depth	–	–	− 0.094	–	0.186	0.155	0.095	–	0.070	–	–	**0.143***	–	0.009	0.048
			(0.628)		(0.240)	(0.620)	(0.299)		(0.636)			**(0.071)**		(0.896)	(0.621)
Foreign Aid	–	–	0.0004	–	− 0.002	− 0.000	0.002	–	− 0.000	–	–	0.0005	–	0.001	− 0.0003
			(0.900)		(0.638)	(0.988)	(0.256)		(0.989)			(0.875)		(0.664)	(0.852)
Inflation	–	–	− 0.003	–	–	–	**− 0.004***	–	− 0.001	–	–	− 0.001	–	− 0.005	− 0.001
			(0.213)				**(0.053)**		(0.581)			(0.711)		(0.145)	(0.421)
AR(1)	0.967	− 0.745	− 1.364	− 0.859	− 1.380	− 0.935	− 1.108	− 0.740	− 1.247	− 0.708	− 0.721	− 1.285	− 0.793	− 1.361	− 1.242
	(0.333)	(0.455)	(0.172)	(0.390)	(0.167)	(0.349)	(0.267)	([0.459)	(0.212)	(0.478)	(0.470)	(0.198)	(0.427)	(0.173)	(0.213)
AR(2)	− 0.885	− 0.153	− 1.097	0.120	− 1.021	− 0.088	− 0.687	0.543	− 0.587	− 1.250	0.403	− 0.796	0.550	− 1.082	− 0.643

Table 3 Conditional Convergence (First Specification) *(Continued)*

	Income Levels				Legal Origins		Religious Dom.		Regions		Resources		Stability		Africa
	UMI	LMI	MI	LI	English	French	Christ.	Islam	SSA	NA	Oil	Non-oil	Conflict	Non-co.	
	(0.375)	(0.877)	(0.272)	(0.904)	(0.307)	(0.929)	(0.491)	(0.587)	(0.556)	(0.211)	(0.686)	(0.426)	(0.582)	(0.278)	(0.519)
Sargan OIR	0.996	5.102	4.923	2.594	2.764	4.918	4.256	2.918	10.621	1.637	3.887	9.110	1.981	10.095	13.395
Wald	0.207	23.06***	22.55***	17.60***	18.78**	41.6***	32.89***	6.620	40.8***	7.910**	1.228	25.30***	4.381	21.01**	49.72***
	(0.976)	(0.000)	(0.007)	(0.007)	(0.016)	(0.000)	(0.000)	(0.250)	(0.000)	(0.019)	(0.746)	(0.002)	(0.223)	(0.012)	(0.000)
Countries	5	9	13	9	11	11	17	7	19	4	5	19	6	17	22
Observations	73	129	95	56	77	72	114	81	125	60	69	129	77	116	149

***, **, *: significance levels of 1%, 5% and 10% respectively. AR(2): Second Order Autocorrelation test. *OIR* Over-identifying Restrictions test. Initial: lagged endogenous estimated coefficient, Wald: test for the joint significance of estimated coefficients, *AC* Absolute Convergence, *CC* Conditional Convergence, *Yrs* Years, *UMI* Upper Middle Income, *MI* Middle Income, *LI* Low Income, English English Common-law, French French Civil-law, *Christ* Christianity dominated countries, *Islam* Islam dominated countries, *SSA* Sub-Saharan Africa, *NA* North Africa, *Oil* Petroleum exporting countries. Non-oil: Countries with no significant exports in petroleum. Conflict: Countries with significant political instability. Gov't: Government. Ivt: Investment. GDP: Gross Domestic Product. 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(1) and AR(2) tests and; b) the validity of the instruments in the Sargan OIR test

Table 4 Conditional Convergence (Second Specification)

	Income Levels				Legal Origins		Religious Dom.		Regions		Resources		Stability		Africa
	UMI	LMI	MI	LI	English	French	Christ.	Islam	SSA	NA	Oil	Non-oil	Conflict	Non-co.	
Initial	0.33***	0.357	−0.037	−0.40***	−0.092	−0.32***	−0.32***	0.292	−0.33***	0.618	−0.31***	−0.223	0.59***	−0.33***	−0.33***
	(0.000)	(0.750)	(0.654)	(0.000)	(0.376)	(0.000)	(0.000)	(0.269)	(0.000)	(0.195)	(0.000)	(0.124)	(0.000)	(0.000)	(0.000)
Constant	0.293*	0.053	0.133	−0.617	−0.012	−0.422	−0.263	−0.002	−0.257	0.027	−0.258	−0.097	5.001	0.102	−0.197
	(0.097)	(0.445)	(0.364)	(0.265)	(0.927)	(0.454)	(0.338)	(0.986)	(0.323)	(0.118)	(0.408)	(0.308)	(0.410)	(0.660)	(0.455)
Public Investment	−0.013	0.002	−0.009	0.032	−0.004	0.003	0.018	0.001	0.024	–	0.009	−0.005	−0.610	0.022	0.024
	(0.442)	(0.590)	(0.246)	(0.473)	(0.518)	(0.901)	(0.422)	(0.784)	(0.453)		(0.444)	(0.456)	(0.334)	(0.516)	(0.474)
Trade	−0.002	−0.0003	0.0001	0.023**	0.0001	0.009	0.004	0.0001	0.004	–	0.007	0.000	0.038	0.001	0.003
	(0.185)	(0.337)	(0.634)	(0.012)	(0.775)	(0.106)	(0.277)	(0.851)	(0.255)		(0.295)	(0.967)	(0.612)	(0.558)	(0.283)
Priv. Capital Flows	–	−0.002	0.003	−0.09**	0.004	−0.018	−0.013	−0.006	−0.015	–	−0.020	0.003	−0.291	−0.005	−0.014
		(0.412)	(0.472)	(0.044)	(0.414)	(0.486)	(0.505)	(0.295)	(0.362)		(0.245)	(0.705)	(0.514)	(0.763)	(0.523)
GDPpc Growth	–	0.009	0.006	0.003	0.015	0.007	0.012	0.002	0.013	–	–	0.018	0.181	0.040	0.011
		(0.308)	(0.601)	(0.795)	(0.501)	(0.768)	(0.393)	(0.842)	(0.359)			(0.289)	(0.387)	(0.284)	(0.480)
Rule of Law	–	−0.009	0.025	−0.415	−0.008	−0.093	−0.200	–	−0.197	–	–	−0.043	–	−0.111	−0.196
		(0.668)	(0.531)	(0.322)	(0.833)	(0.715)	(0.292)		(0.198)			(0.618)		(0.687)	(0.322)
Liquid Liabilities	–	−0.074	−0.137	−3.65***	−0.014	−0.120	−0.342	–	−0.450	–	–	0.150	–	−0.460	−0.425
		(0.543)	(0.394)	(0.004)	(0.945)	(0.836)	(0.456)		(0.436)			(0.224)		(0.356)	(0.299)
Foreign Aid (DAC)	–	–	0.0003	–	0.002	−0.002	−0.015	–	−0.018	–	–	0.005	–	−0.027	−0.020
			(0.974)		(0.588)	(0.911)	(0.504)		(0.443)			(0.405)		(0.567)	(0.442)
Inflation	–	–	−0.0004	−0.013	0.0001	−0.002	−0.002	–	−0.002	–	–	0.001	–	−0.009	−0.001
			(0.294)	(0.149)	(0.910)	(0.127)	(0.102)		(0.199)			(0.601)		(0.266)	(0.104)
AR(1)	−1.062	−0.816	−1.492	−1.033	−1.224	−1.070	−1.042	−1.915*	−1.034	−1.357	−1.037	−1.327	−1.004	−1.013	−1.034
	(0.287)	(0.414)	(0.135)	(0.301)	(0.220)	(0.284)	(0.297)	(0.055)	(0.300)	(0.174)	(0.299)	(0.184)	(0.314)	(0.310)	(0.300)
AR(2)	−0.996	0.734	−0.935	−0.937	−0.988	−0.884	−1.099	0.304	−1.132	−1.227	−0.789	−0.921	−1.001	−1.092	−1.135

Table 4 Conditional Convergence (Second Specification) (Continued)

	Income Levels				Legal Origins		Religious Dom.		Regions		Resources		Stability		Africa
	UMI	LMI	MI	LI	English	French	Christ.	Islam	SSA	NA	Oil	Non-oil	Conflict	Non-co.	
Sargan OIR	1.007	3.111	6.043	5.279	4.002	4.692	10.614	3.333	15.647	2.232	1.784	17.049	8.641	10.380	24.748
	(0.319)	(0.462)	(0.349)	(0.348)	(0.322)	(0.376)	(0.271)	(0.760)	(0.257)	(0.219)	(0.430)	(0.356)	(0.316)	(0.274)	(0.256)
Wald	133***	93.38***	8.576	1616***	4.629	2666***	2144***	4.684	3320***	1.674	120.3***	37.12***	8715***	10261***	3333***
	(0.000)	(0.000)	(0.477)	(0.000)	(0.865)	(0.000)	(0.000)	(0.455)	(0.000)	(0.195)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Countries	5	10	14	14	13	15	22	9	25	4	7	23	10	19	28
Observations	73	69	98	83	86	95	148	92	161	60	73	146	120	125	181

***, **, *: significance levels of 1%, 5% and 10% respectively. AR(2): Second Order Autocorrelation test. OIR Over-identifying Restrictions test, Initial lagged endogenous estimated coefficient, Wald test for the joint significance of estimated coefficients, AC Absolute Convergence, CC Conditional Convergence, Yrs Years, UMI Upper Middle Income, LMI Lower Middle Income, MI Middle Income, LI Low Income, English English Common-law, French French Civil-law, Christ Christianity dominated countries, Islam Islam dominated countries, SSA Sub-Saharan Africa, NA North Africa, Oil Petroleum exporting countries. Non-oil: Countries with no significant exports in petroleum. Conflict: Countries with significant political instability. Non-co.: Countries without significant political instability. Priv: Private. GDPpc: GDP per capita. DAC: Development Assistance Committee. 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(1) and AR(2) tests and; b) the validity of the instruments in the Sargan OIR test

Absolute convergence is estimated with only the lagged difference of the endogenous variable as the independent variable, whereas conditional convergence is in the presence of the conditioning information set (control variables). Hence, unconditional convergence is estimated without $W_{i,\ t}$: vector of determinants of capital flight (government expenditure, trade, FDI, GDP growth, regulation quality, financial depth, development assistance and inflation).[2] Accordingly, in order to assess the validity of the model and indeed the convergence hypothesis, we perform two tests: (i) the Sargan test, which assesses over-identification restrictions, and (ii) the Arellano and Bond test for autocorrelation, which examines the null hypothesis of no autocorrelation. The Sargan test investigates whether the instruments are uncorrelated with the error term in the equation of interest. The null hypothesis is the stance that the instruments as a group are strictly exogenous and do not suffer from endogeneity, which is necessary for the validity of the GMM estimates. The *p*-values of estimated coefficients are disclosed in brackets in the line following the reported values of the estimated coefficients. We broadly observe that the null hypothesis of the Sargan test is not rejected in any of the regressions. Priority is given to the second order autocorrelation: AR (2) test in the first difference because it is more relevant than AR (1), as it detects autocorrelation in difference. For almost every model, we are unable to reject the AR (2) null hypothesis for the absence of autocorrelation, especially for conditional convergence specifications. Therefore, there is robust evidence that most of the models are free from autocorrelation at the 1% significance level.

Table 1 presents a summary of the findings from Tables 2-4. This entails results for AC, CC, the Speed of Absolute Convergence (SAC), the Speed of Conditional Convergence (SCC) and the rate required to achieve full (100%) convergence in both types of convergences.

From a general perspective, the following conclusions could be drawn. (i) Conditional convergence findings based on the second specification (Table 4) are substantially more significant than those based on the first specification (Table 3). Therefore, conditional convergence is based on the variables we observe and empirically test (or model), which may not reflect all determinants of capital flight that facilitate the convergence process. Hence, the discussion of findings will be based only on the second specification for conditional convergence. (ii) Based on continental results, findings on "Petroleum exporting," "North African," "French civil law," "Middle-income" and "Upper-middle-income" countries significantly affect the absolute convergence process. In other words, these fundamental characteristics have rates of convergence that significantly differ from the 33.05% per annum observed for the African continent. Their respective degrees of convergence are much lower, implying a corresponding lengthier period required for full convergence. This disparity is most pronounced in "Middle-income" and "Upper-middle-income" countries, which both have a 2% per annum convergence rate and a time needed for full convergence of 100 years. (iii) Within the perspective of CC, but for the results of "Conflict-affected" and "Low-income" countries, findings for African nations are broadly consistent across other fundamental characteristics. (iv)

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[2]Note should be taken of the fact that the second vector of determinants entails the second set of control variables as presented in Table 4 (public investment, trade, private capital flows, GDP per capita growth, rule of law, liquid liabilities and development aid from DAC countries and inflation).

Regardless of fundamental characteristic, from a projection date of 2010, a feasible timeframe for harmonizing policies is between 2016 and 2023.

Discussion of results

Before we discuss the results, it is important first and foremost to understand the economic intuition motivating absolute and conditional convergence of capital flight in the African continent. Absolute convergence in capital flight occurs when countries share the same fundamental characteristics with regard to factors governing capital flight, such that only cross-country variations in initial levels of capital flight exist. Absolute convergence thus results from factors such as, inter alia: significant exports of petroleum; political instability due to conflicts; the emphasis legal foundations placed on property rights, enforcement of rights and the fight against corruption; and the manner in which economic prosperity affects the propensity of additional wealth to be saved abroad. Absolute convergence also occurs because of adjustments common to fundamental characteristics (conflict-affected, high-income, or English common-law countries for example). Hence, based on the above intuition we could expect capital flight to be higher in petroleum-exporting and conflict-affected countries. This is a necessary but not a sufficient condition for speedy convergence because of disparities in initial conditions of capital flight. These differences in initial conditions depend on: (i) time-dynamic evidence of significant petroleum exports, either because of recent discovery or substantial decline in production; (ii) spontaneous reoccurrence of conflicts after relatively stable periods or arbitrary and unilateral violations of peace accords; and (iii) the diffusion of legal cultures transmitted by colonial powers over time through regionalization and globalization, such that there is no single, unifying system of law across the continent.

On the other hand, conditional convergence is that which is contingent on cross-country disparities in structural and institutional characteristics that determine capital flight. In accordance with the economic growth literature (Barro & Sala-i-Martin, 1992, 1995), conditional convergence depicts the kind of convergence whereby one's own long-term steady state (equilibrium) is contingent on the structural characteristics of its institutions in particular, and its economy in general. For example, non-petroleum exporting countries may differ significantly in the level of globalization, institutional quality, economic prosperity, financial development, price stability, and foreign aid, among other factors. To this end, our model for conditional convergence is contingent on institutional quality (rule of law and regulation quality), globalization (trade, FDI and private capital flows), financial development (at overall economic and financial system levels), economic prosperity (GDP growth at macro and micro levels) and inflation and development assistance (total NODA and NODA from DAC countries).[3] Due to constraints in degrees of freedom, some models have not been conditional on all the determinants of capital flight outlined above. This is not a major issue because some conditional specifications in mainstream literature are limited to two macroeconomic control variables (Bruno et al., 2012).

We have observed the following from the findings. (i) Based on continental results, findings on "Petroleum exporting," "North Africa," "French civil law," "Middle-income" and

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[3]FDI: Foreign Direct Investment. NODA: Net Official Development Assistance. DAC: Development Assistance Committee.

"Upper-middle-income" countries significantly affect the absolute convergence process. The corresponding lower rate of convergence (higher time to full convergence) is the result of differences in initial conditions of capital flight. For instance, the difference in petroleum-exporting countries could be explained by significant variations in the initial conditions of capital flight discussed above, i.e., time-dynamic evidence of significant petroleum exports, either because of recent discovery or substantial decline in production. (ii) Within the perspective of CC, but for the results of 'Conflict-affected' and 'Low-income' countries, findings for African nations are broadly consistent across other fundamental characteristics. 'Conflict-affected' and 'Low-income' countries have a significantly higher rate of conditional convergence (lower time required for full conditional convergence) because of substantially lower cross-country differences in macroeconomic and institutional characteristics determining capital flight. Hence, cross-country differences in factors governing capital flight among "Conflict-affected" and "Low-income" countries are not very substantial. (iii) Regardless of fundamental characteristic, from a projection date of 2010, a feasible timeframe for harmonizing policies is between 2016 and 2023. This empirically indicates (both in absolute and conditional terms) that countries with lower rates of capital flight are catching-up their counterparts with higher rates. Consistent with the intuition motivating this analysis on policy harmonization, two inferences can be drawn: (i) convergence implies that adopting common policies against capital flight is feasible, and (ii) full (100%) convergence within the specified time horizon reflects the implementation (or harmonization) of feasible policies without distinction of nationality or locality.

Concluding implications and future directions

An April 2015 World Bank report on the attainment of the Millennium Development Goal (MDG) extreme poverty target has revealed that extreme poverty has been decreasing in all regions of the world with the exception of sub-Saharan Africa (SSA), despite the sub-region enjoying more than two decades of growth resurgence. This study builds on a critique of Piketty's *Capital in the twenty-first Century* and recent methodological innovations on reverse Solow-Swan to review empirics on the adoption of common policy initiatives against a cause of extreme poverty in SSA: capital flight. The richness of the dataset enables the derivation of 14 fundamental characteristics of African capital flight based on income levels, legal foundations, natural resources, political stability, regional proximity, and religious domination. The main finding reveals that regardless of the fundamental characteristic, from a projection date of 2010, a feasible timeframe for harmonizing policies is between 2016 and 2023. In other words, the beginning of the post-2015 agenda on sustainable development goals coincides with the timeframe for common capital flight policies. Common capital flight policies will benefit sampled countries because capital flight is largely destined to wealthy countries and/or tax havens under the jurisdictions of wealthy countries. The implementation of common policies can be tailored within the auspices of the African Union because the African Union is currently spearheading the Continental Free Trade Area (CFTA) in Africa.

Consistent with Asongu (2014a), the following four points are relevant issues that need to be resolved to facilitate policy harmonization: (i) improvement of the investment climate and ease of doing business to deter capital fight based on prospects of higher returns; (ii) formulation of common policies that would culminate

in the repatriation of corruption-related capital flight deposited in Western banks, and the improvement of formal institutions that will oversee the recovery of this stolen capital (as well as deter potentially corrupt officials); (iii) involvement of Western banks in particular and the international community in general; and (iv) challenging the legitimacy of a part of African debts. The purpose of this study has been to project more horizons for common policies against capital flight in Africa using more fundamental characteristics. More insights into policy measures against the underlying capital flight are available in Fofack and Ndikumana (2009) and Asongu (2014a).

Future studies devoted to extending extant literature may focus on more contemporary measures that are being tailored toward fighting illicit capital flight in the post-2015 sustainable development agenda.

Appendix 1

Table 5 Summary Statistics

	Variables	Mean	S.D	Min.	Max.	Observations
Capital Flight		3.647	28.643	−13.637	399.14	540
Expenditure	Government Expenditure	4.015	10.790	−68.238	80.449	376
	Public Expenditure	7.704	4.636	0.000	30.120	487
Globalization	Trade Openness	69.503	38.157	8.199	246.89	557
	Foreign Direct Investment	2.300	4.393	−16.118	35.190	485
	Private Capital Flows	2.410	4.555	−16.118	35.295	489
Institutional Quality	Regulation Quality	−0.606	0.607	−2.526	0.857	293
	Rule of Law	−0.697	0.648	−2.312	0.863	294
Economic Prosperity	GDP growth	3.539	4.624	−29.178	24.176	559
	GDP per capita growth	1.060	4.407	−23.539	23.104	564
Foreign Aid	Total NODA	10.223	9.915	0.054	62.344	559
	NODA from DAC countries	6.062	6.144	−0.175	53.017	559
Finance and Inflation	Money Supply	0.305	0.202	0.001	1.224	472
	Liquid Liabilities	0.235	0.186	0.001	1.017	474
	Inflation	105.80	1226.3	−100.00	24,411	520
Categorization	Upper Middle Income	0.162	0.368	0.000	1.000	592
	Lower Middle Income	0.297	0.457	0.000	1.000	592
	Middle Income	0.459	0.498	0.000	1.000	592
	Low Income	0.540	0.498	0.000	1.000	592
	English	0.405	0.491	0.000	1.000	592
	French	0.594	0.491	0.000	1.000	592
	Christianity	0.702	0.457	0.000	1.000	592
	Islam	0.297	0.457	0.000	1.000	592
	Sub-Saharan Africa	0.891	0.310	0.000	1.000	592
	North Africa	0.108	0.310	0.000	1.000	592
	Oil	0.216	0.412	0.000	1.000	592
	Non-oil	0.783	0.412	0.000	1.000	592
	Conflict	0.297	0.457	0.000	1.000	592
	Non-conflict	0.702	0.457	0.000	1.000	592

SD Standard Deviation, *Min* Minimum, *Max* Maximum

Appendix 2

Table 6 Correlation Matrix

	Expenditure (Ex)		Financial Openness		Trade	Institutional Quality		Economic Prosperity		Foreign Aid (NODA)		Finance			Capital	
	Gov. Ex	Pub. Ivt	FDI	PCF	Openness	R.Q	R.L	GDPg	GDPpcg	Total	DAC	M2	LL	Inflation	Flight	
Gov. Ex	1.000	0.098	0.080	0.082	0.101	0.014	0.028	0.332	0.344	0.038	0.044	−0.033	−0.018	−0.356	−0.070	Gov. Ex
Pub. Ivt		1.000	0.116	0.111	0.227	0.231	0.383	0.146	0.163	0.261	0.269	0.181	0.151	−0.108	−0.148	Pub. Ex
FDI			1.000	0.982	0.511	−0.153	0.097	0.128	0.176	−0.084	−0.063	0.145	0.185	0.056	−0.060	FDI
PCF				1.000	0.504	−0.150	0.108	0.117	0.172	−0.068	−0.040	0.167	0.208	0.054	−0.068	PCF
Trade					1.000	0.032	0.218	0.107	0.163	−0.110	−0.088	0.196	0.257	0.018	−0.049	Trade
R.Q						1.000	0.791	0.146	0.170	−0.163	−0.179	0.301	0.370	−0.193	−0.049	R.Q
R.L							1.000	0.091	0.161	−0.109	−0.119	0.590	0.636	−0.128	−0.025	R.L
GDPg								1.000	0.973	0.047	0.041	0.011	0.025	−0.197	0.069	GDPg
GDPpcg									1.000	0.056	0.059	0.085	0.106	−0.189	0.053	GDPpcg
Total										1.000	0.953	−0.260	−0.286	−0.012	−0.080	Total Aid
DAC											1.000	−0.218	−0.253	0.004	−0.062	DAC Aid
M2												1.000	0.967	−0.084	0.004	M2
LL													1.000	−0.082	0.004	LL
Inflation														1.000	−0.009	Inflation
Cap. Fight															1.000	Cap. Fight

Gov. Ex Government Expenditure, *Pub. Ivt* Public Investment, *FDI* Foreign Direct Investment, *PCF* Private Capital Flows, *R.Q* Regulation Quality, *R.L* Rule of Law, *GDPg* GDP growth, *GDPpcg* GDP per capita growth, *NODA* Net Official Development Assistance. Total: Total NODA. DAC: NODA from 'Development Assistance Committee' countries, *M2* Money Supply, *LL* Liquid Liabilities

Appendix 3

Table 7 Definitions of variables

Variables	Signs	Definitions of variables (Measurements)	Sources
Government Expenditure	Gov. Ex	Government Final Consumption Expenditure (% of GDP)	World Bank (WDI)
Public Investment	Pub. Ivt	Gross Public Investment (% of GDP)	World Bank (WDI)
Foreign Investment	FDI	Foreign Direct Investment (% of GDP)	World Bank (WDI)
Private Capital Flows	PCF	Private Capital Flows (% of GDP)	World Bank (WDI)
Trade Openness	Trade	Imports plus Exports of Goods and Services (% of GDP)	World Bank (WDI)
Regulation Quality	R.Q	Regulation Quality (estimate): Measured as the ability of the government to formulate and implement sound policies and regulations that permit and promote private sector development.	World Bank (WDI)
Rule of Law	R.L	Rule of Law (estimate): Captures perceptions of the extent to which agents have confidence in and abide by the rules of society and in particular the quality of contract enforcement, property rights, the police, the courts, as well as the likelihood of crime and violence.	World Bank (WDI)
GDP Growth	GDPg	Average annual GDP growth rate	World Bank (WDI)
GDP per capita Growth	GDPpcg	Average annual GDP per capita growth rate	World Bank (WDI)
Foreign Aid (1)	Total Aid	Total Net Official Development Assistance (% of GDP)	World Bank (WDI)
Foreign Aid (2)	DAC Aid	NODA from DAC Countries (% of GDP)	World Bank (WDI)
Financial Depth	M2	Money Supply (% of GDP)	World Bank (FDSD)
Liquid Liabilities	LL	Financial System Deposits (% of GDP)	World Bank (FDSD)
Inflation	Inflation	Consumer Price Index (Annual %)	World Bank (WDI)
Capital Flight	Cap. Flight	Capital Flight (constant of 2010 in % of GDP)	Boyce & Ndikumana (2012)

FDSD Financial Development and Structure Database, *WDI* World Bank Development Indicators, *NODA* Net Official Development Assistance, *DAC* Development Assistance Committee

Appendix 4

Table 8 Presentation of Countries

Categories	Panels	Countries	Num
Income Levels	Upper Middle Income	Botswana, Algeria, South Africa, Gabon, Sao Tomé & Principe, Seychelles.	6
	Lower Middle Income	Tunisia, Lesotho, Nigeria, Cameroon, Côte d'Ivoire, Swaziland, Sudan, Egypt, Morocco, Angola, Cape Verde.	11
	Middle Income	Botswana, Algeria, South Africa, Gabon, Sao Tomé & Principe, Seychelles, Tunisia, Lesotho, Nigeria, Cameroon, Côte d'Ivoire, Swaziland, Sudan, Egypt, Morocco, Angola, Cape Verde.	17
	Low Income	Burkina Faso, Uganda, Chad, Congo Republic, Mozambique, Burundi, Malawi, Congo Democratic Republic, Ghana, Rwanda, Ethiopia, Kenya, Madagascar, Central African Republic, Zambia, Guinea, Mauritania, Sierra Leone, Tanzania, Zimbabwe.	20
Legal Origins	English Common-law	Botswana, Lesotho, Uganda, Nigeria, Malawi, Ghana, Swaziland, Sudan, Kenya, Zambia, South Africa, Sierra Leone, Tanzania, Seychelles, Zimbabwe.	15
	French Civil-law	Tunisia, Burkina Faso, Chad, Congo Republic, Mozambique, Burundi, Cameroon, Congo Democratic Republic, Côte d'Ivoire, Algeria, Rwanda, Ethiopia, Madagascar, Egypt, Central African Republic, Morocco, Guinea, Mauritania, Gabon, Angola, Cape Verde, Sao Tomé & Principe.	22
Religious Domination	Christianity	Botswana, Lesotho, Uganda, Congo Republic, Mozambique, Burundi, Malawi, Cameroon, Congo Democratic Republic, Côte d'Ivoire, Ghana, Swaziland, Rwanda, Ethiopia, Kenya, Madagascar, Central African Republic, Zambia, South Africa, Gabon, Angola, Tanzania, Cape Verde, Sao Tomé & Principe, Seychelles, Zimbabwe.	26
	Islam	Tunisia, Burkina Faso, Nigeria, Chad, Sudan, Algeria, Egypt, Morocco, Guinea, Mauritania, Sierra Leone.	11
Regions	Sub-Saharan Africa	Botswana, Lesotho, Uganda, Nigeria, Malawi, Ghana, Swaziland, Sudan, Kenya, Zambia, South Africa, Sierra Leone, Tanzania, Seychelles, Zimbabwe, Burkina Faso, Chad, Congo Republic, Mozambique, Burundi, Cameroon, Congo Democratic Republic, Côte d'Ivoire, Rwanda, Ethiopia, Madagascar, Central African Republic, Guinea, Mauritania, Gabon, Angola, Cape Verde, Sao Tomé & Principe.	33
	North Africa	Algeria, Egypt, Morocco, Tunisia.	4
Resources	Petroleum Exporting	Nigeria, Chad, Congo Republic, Cameroon, Sudan, Algeria, Gabon, Angola.	8
	Non-Petroleum Exporting	Botswana, Lesotho, Uganda, Malawi, Ghana, Swaziland, Kenya, Zambia, South Africa, Sierra Leone, Tanzania, Seychelles, Zimbabwe, Burkina Faso, Mozambique, Burundi, Congo Democratic Republic, Côte d'Ivoire, Rwanda, Ethiopia, Madagascar, Central African Republic, Guinea, Mauritania, Cape Verde, Sao Tomé & Principe, Egypt, Morocco, Tunisia.	29
Stability	Conflict	Uganda, Mozambique, Burundi, Congo Democratic Republic, Sudan, Rwanda, Ethiopia, South Africa, Angola, Sierra Leone, Zimbabwe.	11
	Non-Conflict	Botswana, Lesotho, Nigeria, Malawi, Ghana, Swaziland, Kenya, Zambia, Tanzania, Seychelles, Burkina Faso, Chad, Congo Republic, Cameroon, Côte d'Ivoire, Madagascar, Central African Republic, Guinea, Mauritania, Gabon, Cape Verde, Sao Tomé & Principe, Algeria, Egypt, Morocco, Tunisia.	26

Num Number of cross sections (countries)

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The data for this paper is available upon request. This article does not contain any studies with human participants or animals performed by the authors.

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