Are lions democrats?
The impact of democratization on economic growth in Africa, 1980-2010[*]

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ABSTRACT – If we look back at the past two decades, timing seems to point to a close connection between democratic reforms and economic growth in sub-Saharan states. Most countries in the area introduced multiparty politics and made dramatic (if incomplete) democratic progress between 1990 and 1994. Quite strikingly, it is exactly from 1994-1995 that the region began to undergo a significant period of economic recovery, initially with positive but less-than-impressive growth rates, and then, from around 2000, with a more significant pace of progress. By 2010-2011, some countries were being touted as new "African lions", establishing a parallel with the remarkable growth recorded by the so-called "Asian tigers" during the second half of the XX century. Because of the undeniable temporal sequence experienced by sub-Saharan states – i.e. first political reforms, then economic growth – some observers have pointed to a nexus between democratic progress and economic performance. But is there evidence in support of a causal relationship? As of today, little empirical research has been conducted on the democracy-growth nexus in Africa. We discuss the different theoretical arguments claiming an economic advantage of democracies and carry out an empirical analysis of the growth impact of political regimes in 43 sub-Saharan African states for the 1980-2010 period. Our findings confirm that African countries, many of which had long suffered the combination of authoritarian rule and predatory practices, derived economic dividends from democratic progress.

1. The tempo of political and economic developments in contemporary Africa

Does democracy favour economic growth in Africa? If we look back at the past two decades, timing seems to point to a close connection between democratic reforms and economic performance in sub-Saharan states. Indeed, the temporal sequence is quite striking. Between 1990 and 1994, the continent underwent dramatic democratic advances. In the space of a few years, the overwhelmingly predominant one-party or military regimes were replaced by various degrees of political opening and by the systematic introduction of multiparty elections. A large number of newly-reformed regimes soon turned out to mask old or new authoritarian practices. This was the case, for example, in Gabon, Ethiopia or Chad. Yet several other countries, including Zambia, Benin, Mozambique or Ghana, did make substantial if imperfect progress towards democracy.

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Crucially, the two key drivers behind political reforms had raised expectations that political change would also usher in economic progress. On the domestic side, popular protests had largely emerged as a result of economic hardship. African citizens had started demanding leadership changes as a means towards altering the bleak economic conditions and prospects of their countries. At the international level, on the other hand, donors had begun pressurizing for "good governance" reforms, a notion that largely overlapped with the introduction of multiparty elections. These external demands were essentially based on the understanding that reforming Africa's political institutions was instrumental to fostering the continent's economic recovery.

While the first half of the 1990s saw African countries leaping forward in terms of political development, in the second half of the decade an economic revival was also kick-started. After the largely dismal results of the previous decade, the economic upturn was initially slow and modest in size, but it nevertheless saw sub-Saharan economies stabilizing their performances at above 2% annual GDP growth from 1995 on. In a few years, growth rates gradually reached more substantial levels. The continent's economies progressed at an average pace of over 5% from 2000, with an impressive 6% average during the five years preceding the global crisis. This was in sharp contrast with Africa's growth between 1980 and 1999, which only averaged 2.1%[1]. Moreover, the 2007-09 global economic crisis did not halt this positive trend. In 2009, when the OECD countries recorded a dramatic -3.6%, Africa was the only region experiencing growth (at 2.1%) together with Asia. In spite of the first reduction (-0.3%) of per capita income in a decade, the region managed the crisis better than in the past and better than many other areas[2]. By 2010 and 2011, the effects of the crisis in Africa were over and growth rates were back at, respectively, 5% and 4.2%, with a 5-6% estimate for 2012.

In 2011, some African countries were famously ranked among the world's best performing economies based on IMF data[3]. Six out of ten fastest growing economies for the 2001-2010 period were in sub-Saharan Africa – these were Angola, Nigeria, Ethiopia, Chad, Mozambique and Rwanda – with average rates of 8% or above. Over the previous twenty-year period, only Uganda had made it into this special league. According to forecasts, the 2011-2015 quinquennial will see as many as seven of the world's ten fastest-growing countries hailing from this region (namely, Ethiopia, Mozambique, Tanzania, Congo-DRC, Ghana, Zambia and Nigeria). The fact that the two lists only show a limited overlap – with less than one in two countries appearing in both – testifies to the relative breadth of the current positive economic trend, as well as to its volatility.

Based on these and similar data, some upbeat specialists replaced the oft-heard references to an African growth "tragedy" (Easterly – Levine 1997, Artadi – Sala-i-Martin 2003) with talks of the continent's emerging growth miracle (Young 2011). And just like the startling multi-decade long Asian miracle had had its "tigers", so the new century was to be the era of the "African lions"[4]. One key difference being that, thus far, lions are not as clearly identified as tigers. At least to an extent, observers do not agree on who they are. As many as four of the IMF-data based African rising economies – that is, 40% of the group – for example, are nowhere to be found among the seventeen leading countries recognized by a well-known study on "emerging Africa"[5].

Figure 1 shows the tempo of the abovementioned processes of political change and economic renewal through the trends of a standard measure of democracy (i.e. the Polity2 index, here as a regional average score) and of GDP growth. The GDP growth line largely appears to follow the democracy line, if only with a lag of a couple or more years. Accordingly, many observers quickly established a nexus between the two phenomena (cf. Ndulu – O'Connell 1999:63-64). An influential magazine, for example, adamantly pointed that economic expansion was "happening partly because Africa is at last getting a taste of peace and decent government. For three decades … not a single one (bar … Mauritius) peacefully ousted a government or president at the ballot box. But since Benin set the mainland trend in 1991, it has happened more than 30

[1] World Bank, *World Development Indicators*, online Databank.

[2] *Stronger policies helped Africa through global crisis*, "IMF Survey Magazine", 18 February 2010.

[3] "A more hopeful continent. The lion kings?", *The Economist*, 6 January 2011.

[4] "A more hopeful continent. The lion kings?", *The Economist*, 6 January 2011 and McKinsey Global Institute (2010).

[5] Radelet (2010a, 2010b) excludes oil-producing state (thus leaving out the likes of Angola or Nigeria) and lists Botswana, Burkina Faso, Cape Verde, Ethiopia, Ghana, Lesotho, Mali, Mauritius, Mozambique, Namibia, Rwanda, Sao Tomé and Principe, Seychelles, South Africa, Tanzania, Uganda and Zambia.

times”[6]. Development analysts similarly stressed that “the movement toward democracy … has been at the core of the renaissance … in Africa the relationship [between democratic governance and economic success] is crystal clear” (Radelet 2010:16,18). Echoing Liberian president Ellen Johnson Sirleaf (“the most important thing is the change in political systems”, quoted in Radelet 2010:5), some went as far as to suggest that democracy had become no less than “a prerequisite for growth and development in Africa” (Wantchekon 2012:197). These strong and emphatic claims, however, were rarely backed by sound empirical evidence.

This paper offers a systematic empirical account of the impact of democratic reforms on economic growth in contemporary Africa. In the next section, we examine previous works on the relationship between democratization and economic performance on the continent. We then carry out an empirical analysis of the effects of the level and duration of democracy on GDP growth and GDP per capita growth in 43 sub-Saharan countries over the 1980-2010 period. In order get a more precise picture, we also examine separately the region’s top performers and its economic laggards. Finally, we include some brief pairwise comparisons to further illustrate our findings. Empirical results confirm our expectations that African polities, most of which traditionally suffered from deep-seated predatory and neopatrimonial practices that thrive under authoritarian rule, tend to reap benefits from democratization processes.

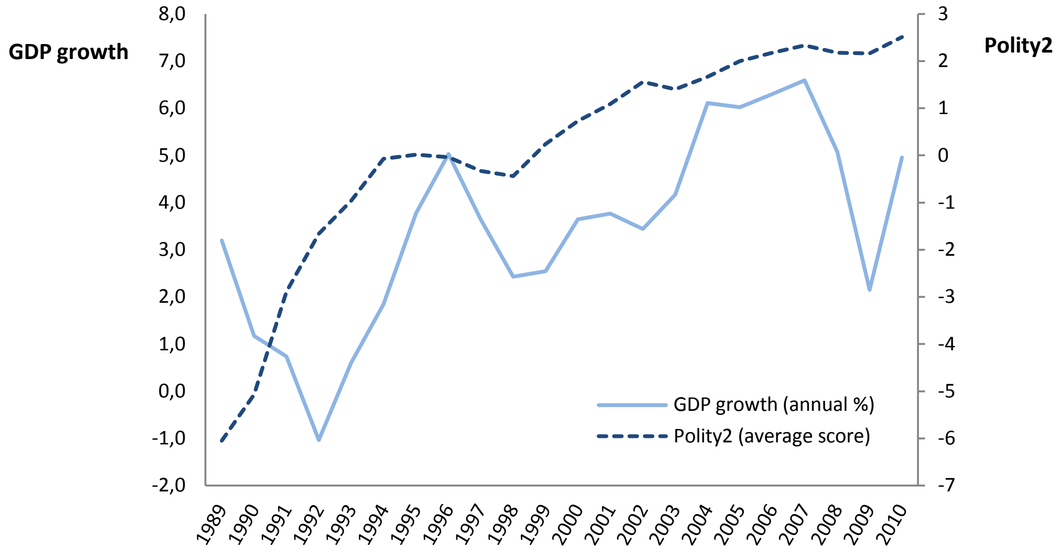

FIGURE 1. Economic growth and democratic progress in sub-Saharan Africa, 1989-2010.
Sources: World Development Indicators (online Databank, accessed 18 July 2012) and Polity IV Project.
Notes: Somalia has been excluded for the years 1991-2010.

2. The economic effects of political regimes

The relationship between regime type and economic growth has been extensively examined by the political and economic literature, particularly in the course of the 1990s, when scholars looking at the introduction of democracy in poor countries expressed pessimistic concerns about the economic impact of political reforms. Broadly speaking, three main theoretical viewpoints have been advanced on this subject, namely a compatibility (democracy and economic growth are mutually reinforcing), a conflict (a trade-off exists between democracy and development) and a sceptical view (the two are potentially compatible, but no universal relationship exists) (cf. Sirowy – Inkeles 1990, Doucouliagos – Ulubaşoğlu 2008).

[6] “The hopeful continent. Africa rising”, *The Economist*, 3 December 2011.

A vast body of theoretical work has been devoted to supporting the notion that democracy is instrumental to economic growth, and thus fosters development. Specific arguments, as mentioned, are abundant and nuanced (for an overview, see Tavares – Wacziarg 2001:1344ff.). At the most general level, democratic elections are assumed to introduce competition and accountability mechanisms that generate incentives for a government to achieve the best possible macroeconomic performance by choosing good and stable macroeconomic policies and trade openness, and thus tend to promote a country's economic progress. Democratic procedures, in addition, imply that rules for alternation in government are more clear and transparent, thus reducing political instability and uncertainty that would otherwise hinder growth. Besides underpinning political stability, democracy also supposedly strengthens the rule of law, and in this way it encourages investments and the accumulation of physical capital. Finally, the claim is made that popular demands for better education and a more equitable wealth distribution also contribute to accelerating growth by raising the level of human capital – and thus economic productivity – and by bringing down the level of inequality (Abdiweli – Said 2004, Desai et al. 2003, Przeworski et al. 2000, Rodrik – Wacziarg 2005, Quinn – Wolley 2001).

The specific arguments against democracy, according to which pluralist political systems hinder growth, are almost as numerous and detailed as the arguments for democracy. The bulk of them warns that democracy makes state institutions responsive to the demands of the poor by expanding welfare policies and lowering income inequality, but does so at the expense of physical capital accumulation (Tavares and Wacziarg 2001; cf. Gasiorowski 2000; Oatley 2003; Serieux 1999; Crozier et al. 1975:157ff.; Przeworski et al. 2000 on wages). A related set of arguments focuses on the efficiency of participatory governance. The new demands raised by democratic participation tend to overload the state. Electoral politics foster short-term promises as opposed to long-term development, reduce the efficiency of decisions while generating instability, and tend to escalate social conflicts based on communal diversity. Overall, democratic political participation reduces the degree of social order and political stability that a country needs to attract investments and promote industrial change.

All the arguments pointing at the growth-retarding effects of democracy imply the existence of a trade-off and thus of a hard choice: if fast economic growth is what developing countries are really after, political liberty and equality should be renounced, or at least postponed for some time. This is what the modernization theory suggested: substantial economic progress requires authoritarian regimes – possibly in the guise of a benevolent "developmental dictatorship" committed to protecting economic freedoms and safeguarding property rights – as opposed to the fragile establishment of "premature" democracies (cf. Huntington 1968, Wade 1990). This seemed to be the lesson taught by the likes of Romania during the 1950s, South Korea, Taiwan and Singapore since the 1960s, Chile and Brazil in the 1970s or China since the 1980s.

As much as the theoretical debate has been fiercely fought, several reviews of existing empirical works have shown the latter's conflicting and largely inconclusive results (Sirowy – Inkeles 1990, Barro 1996, Brunetti 1997, Plumper – Martin 2003:28). Some studies appear to confirm a moderately negative effect of democracy, and thus suggest that "political freedom emerges as a sort of luxury good. Rich places consume more democracy because this good is desirable for its own sake and even though the increased political freedom may have a small adverse effect on growth. Basically, rich countries can afford the reduced rate of economic progress" (Barro 1996:24; cf. Tavares – Wacziarg 2001). Other research, however, insists not only that, whether democratic or authoritarian, political regimes have actually little or no systematic impact on economic growth, but also that democracies are associated "with significant reductions in economic volatility" (Rodrik – Wacziarg 2005:50; Przeworski et al. 2000; Doucouliagos – Ulubaşoğlu 2008). Overall, not much has changed since, more than twenty years ago, Sirowy and Inkeles (1990:150) summed up the findings of existing research with this tentative conclusions: democracies do not grow faster, but it is still unclear whether they slow down economic growth or whether there is no systematic relationship.

The reason why the political science and economics literature is largely inconclusive is possibly due to the fact that democratisation entails both economic costs and economic benefits. In other words, even though democratic reforms impact on the sources of growth, these effects tend to counter-balance each other, explaining why democracy itself may be ambiguous (Pinto – Timmons 2005, Tavares – Wacziarg 2001:1344). Similarly, a multifaceted character of the connection is also stressed by Plumper and Martin (2003), who find evidence in support of what they call "the Barro effect" (an inverse u-shaped relationship whereby democracy favours growth at low levels of political liberty, but the opposite happens when higher levels of political liberty are achieved) as well as by Gerring and his colleagues, who show that time is crucial, as it is "long-term democracy [that] leads to stronger economic performance" (Gerring et al. 2005).

An alternative way to explain and overcome some of these contradictions is by examining temporal and regional factors more closely. Kriekhaus highlights how the analysts' choice of a specific time period is crucial, with democracy producing, on average, a negative effect on growth during the 1960s, a positive effect during the 1980s and no effect at all during the 1970s and 1990s (Kriekhaus 2004). Something similar goes for geographical differences too. In those regions where social groups clamour for redistribution, such as Latin America, democracy may lead to populism and poor economic performances. Likewise, in areas of the world where state elites are generally committed to promoting rapid industrialization, as in parts of Asia, democratic pressures may turn out to hinder effective economic policy. But in regions where neo-patrimonial practices are chronic, notably in Sub-Saharan Africa, democracy may provide a useful mechanism for evicting grossly corrupt politicians and thus facilitate the achievement of higher rates of economic growth (Kriekhaus 2006).

Ultimately, the vast democracy-growth literature has not produced broadly accepted empirical results. While the relatively scant qualitative studies did often uncover the presence of a significant regime effect – whether positive or negative – many quantitative studies, which constitute the bulk of this literature, have largely reached a more skeptical conclusion (Sirowy – Inkeles 1990, Przeworski et al. 2000; Doucouliagos – Ulubaşoğlu 2008): on average, political regimes seem to make little or no difference.

Africa's recent political and economic evolution, as pointed out, demands a specific investigation into their plausible connection. Few studies have tried to systematically examine the relationship between regime type and economic growth in the region. Nkurunziza and Bates (2003), for example, did find a significant effect of regime type, although their analysis was only based on a subset of 22 sub-Saharan countries and their timeframe limited to the 1970-1990 pre-reform period. In a pioneering and influential study, van de Walle (1999, 2001) examined the 1986-1998 years – i.e. the times of greatest democratic progress in Africa – and found that democratization generated no growth dividend. Both Ferree and Singh (2006:32) as well as Narayan et al. (2011) looked at a longer period – namely, the 1970s, 1980s and 1990s – and confirmed van de Walle's conclusion that a country's level of democracy per se had *not* favoured better economic performances. Tiruneh (2006:14) was similarly very cautious as he pointed out that, because his investigation of the 1991-2000 period (inclusive of north Africa) only produced "some but not strong and consistent evidence", the question essentially remained open. Lewis (2008) did find evidence of a link between political regime and economic performance, although he warned of a "growth without prosperity" paradox that took shape in Africa over the two decades from 1986 to 2006. Other scholars tried to address the question of *when* democratic reforms are supposed to affect the economy. In this vein, Rodrik and Wacziarg gauge the immediate payoffs of democratic transitions as, after examining African countries from independence to 2000 through a within-country effects method, they highlight a short-term boost in growth as well as lower growth volatility. Democratization, they point out to pessimists, appears "to follow rather than precede declines in growth" (Rodrik – Wacziarg 2005:54). Ferree and Singh, on the contrary, find that only the passing of time made it possible for those African democracies that survived to begin delivering growth dividends (Ferree – Singh 2006:42).

Overall, quantitative works show the democracy-growth relationship in Africa to be essentially in line with global evidence. In a recent meta-analysis of 84 econometric studies, for a total of 483 regression estimates, Doucouliagos and Ulubaşoğlu (2008:73) conclude that including African countries in the samples under investigation does not alter the general pattern of "zero effect" of political regimes on economic performance. The average finding of the exiting empirical literature, in other words, is that sub-Saharan democracies do not grow any better, nor any worse, than their non-democratic counterparts in the region.

What all these analyses lack, however, is a specific account of Africa's impressive economic performances during the first decade of the new century. The majority of the works with a focus on Africa, in particular, only covers some period up to the year 2000, a period for which countries on the continent were best known for their negative or stagnant rates of growth (Artadi – Sala-i-Martin 2003, Ndulu – O'Connell 2008). The two investigations that reach farther still stop at around the middle of the decade. The study by Fosu (2009) only reaches 2004, includes a subset of 30 sub-Saharan states and fails to include most standard growth regressors. Lewis's (2008) analysis of 36 countries of the region reaches somewhat further, at 2006, but, while being much better grounded into African affairs than most of the other cited studies, it has evident methodological shortcomings, including no information on how regimes are classified by the author and the absence of any controls. Finally, some of these studies use decadal average data that imply a significant loss of information. As we pointed out, the impressive political and economic developments in contemporary Africa demand an investigation into the relationship between the two. The existing literature provides no answer.

3. Hypotheses and operationalization

Our starting point is the idea that, largely due to certain political dynamics that are deeply-rooted in much of Africa, the impact of democratic reforms on the continent's economic growth should be positive. In countries characterized by high socio-economic inequalities (such as in most of Latin America) or strong elite commitment to development (as in a number of Asian nations), democracy is likely to generate a multiplicity of popular demands and redistributive policies that may turn out to actually hamper economic growth (Krieckhaus 2006). But in societies affected by deep-seated predatory practices – as in many sub-Saharan states – the introduction of democratic institutions and competition often helps strengthening economic performances by making it easier to replace inefficient leaders. Of course, none of the above underlying dynamics (redistributive demands, elites' commitment, wealth predation, etc.) are unique to a specific geographical area. Rather, they probably exist everywhere. But their relative intensity and prevalence varies across world regions, and so do their overall net effects (Krieckhaus 2006). In addition, we agree with Gerring et al. (2005), Ferree and Singh (2006) and others that the establishment of democracy may not immediately produce economic gains, as its full effects only become apparent with time, when the functioning of the new institutional set up and political practices are allowed to regularize, deepen and flourish.

Our hypotheses are thus as follows, starting with our key political variables. First, we expect that the more democratic a country, the better its growth performance. We determine a country's degree of democracy through a standard Polity2 variable produced by the PolityIV Project. This variable ranges between -10 (most autocratic) and +10 (most democratic). Secondly, we also consider that the impact of democracy over the economy may take time to become manifest. To account for this, we include a "duration of democracy" variable and we expect that the longer a country has been democratically-ruled, the better its growth performance. For this purpose, we measure the age of an existing democratic system as the number of years a given country has been uninterruptedly assigned a score of 6 or above on the Polity2 scale[7].

Besides our democracy variables, we include several other regressors typically employed in the literature on the determinants of economic growth in Africa. According to the standard neoclassical convergence hypothesis, a country's level of development affects its growth rates, with poorer countries likely to achieve stronger performances than richer ones. We measure this through a country's level of per capita income in the year prior to the beginning of the period under investigation (i.e. 1979). To account for the growth-enhancing role of investments, we employ a gross capital formation measure (as a share of GDP). Human capital – appraised either through health or education indicators – is also deemed to be a crucial factor favouring economic progress. Based on data availability, we choose to proxy human capital through life expectancy at birth[8]. We also include a measure of government consumption that, following standard economic models, we expect to negatively affect growth. To control for autocorrelation, we add a variable for the growth rate of GDP (or GDP per capita, see below) at time t-1.

Finally, we bring in six control variables. The real exchange overvaluation is included as a proxy for bad macroeconomic policies (i.e. the lack of economic reforms), with its effects expected to be negative. Oil production (as a share of GDP) and aid (as a share of GNI) are both presumed to sustain – if not to "artificially" inflate – growth performances. Following Easterly and Levine (1997) and Alesina et al. (2003), ethnic divisions are a possible constraint on the pace of economic development due to the rent-seeking behaviours they may promote. We also include population growth among our regressors, although

[7] A score of 7 or more is more on the Polity scale often taken as the threshold necessary to classify countries as democratic. Yet the very authors of PolityIV at times lower this threshold to 6 points. Marshall and Cole, for example, explain that "countries with Polity scores from +6 to +10 are counted as democracies in tracking 'Global Trends in Governance, 1946-2010'" (2011:9). We believe that in the African context, which has been historically dominated by nondemocratic rule, a score of 6 signals a remarkable democratic achievement.

[8] Data on the level of schooling (a variable much used in the literature) include many missing observations and have therefore been discarded from the analysis.

economists disagree on whether its effects are positive or negative (Ndulu – O'Connell 2008). Our sixth control variable is a dummy that we construct to account for the legacy of British colonialism among African states, a rather intuitive way to incorporate in our analysis a major finding of the literature on the legacy of colonial institutions and growth.

4. Empirical analysis: method and model

In assembling a satisfactory cross-national time-series dataset of African countries, we faced three constraints. First, for every single country-year, we needed measures for both our dependent as well as all our independent variables. Second, each time-series had to be long enough. Finally, each time-series had to be about the same length. Due to data availability, we were only partly able to satisfy these criteria. These limitations notwithstanding, the resulting dataset, which covers 43 sub-Saharan countries from 1980 to 2010, has the largest total N (upwards of 900) yet analyzed in the literature on democracy and growth in Africa[9]. Moreover, as the univariate statistics in Table 1 show, the dataset affords a very large variance in the key variables under consideration. For example, GDP growth rates range from -32.8% (Liberia 2003, in the midst of renewed conflict) to 71.2% (Equatorial Guinea 1997, as a result of a dramatically-increased oil and gas production), the highest value for government consumption is more than twenty-seven times larger than the lowest value (Equatorial Guinea 2007 *versus* Gambia 1984), life expectancy at birth ranges from 26.8 (Rwanda 1993) to 73.8 (Cape Verde 2010). This great variance reduces the risk of bias and increases the efficiency of our estimation.

TABLE 1. Descriptive statistics

	Observations	Mean	Std. Dev.	Min	Max	Source
GDP growth (%)	1021	3.858	6.343	-32.832	71.188	World Development Indicators
GDP per capita growth (%)	1021	1.231	6.185	-33.746	65.694	World Development Indicators
polity2 (most autocratic = -10; most democratic = 10)	1021	-0.703	6.091	-10	10	Polity IV
duration of democracy (years, threshold Polity2 = 6)	1021	3.027	7.782	0	44	Polity IV
level of development (GDP p.c. 1979, log)	1021	6.097	0.738	4.987	8.427	World Development Indicators
life expectancy at birth (years)	1021	52.309	6.906	26.819	73.774	World Development Indicators
government consumption (% of GDP)	1021	15.014	6.579	2.288	54.515	World Development Indicators
real exchange overvaluation	1021	0.148	1.074	0.000	22.267	World Development Indicators
oil production (% of GDP)	1021	5.357	14.461	0.000	79.514	World Development Indicators
population growth (%)	1021	2.562	1.011	-7.533	9.771	World Development Indicators
aid (% of GNI)	1021	12.659	13.583	-0.253	185.936	World Development Indicators
ethnic fractionalization	1021	0.666	0.215	0	0.930	Alesina et al. 2003
British colony	1021	-	-	0	1	Authors
gross capital formation (% GDP, log)	1021	2.906	0.667	-2.520	4.785	World Development Indicators

[9] Due to missing information, 5 sub-Saharan countries are excluded from the analysis, these are Djibouti, Eritrea, São Tomé and Príncipe, Seychelles and Somalia. South Sudan is not part of our sample since it only came into existence as an independent state in 2011.

TABLE 2. Democracy and economic growth in 43 sub-Saharan countries, 1980–2010.

	Model 1 (dependent variable: GDP growth)			Model 2 (dependent variable: GDP growth)			Model 3 (dependent variable: GDP per capita growth)			Model 4 (dependent variable: GDP per capita growth)		
	Coef.		Robust Std. Err.	Coef.		Robust Std. Err.	Coef.		Robust Std. Err.	Coef.		Robust Std. Err.
degree of democracy				0.060	*	0,031				0.054	*	0.029
duration of democracy				0.058	*	0.032				0.060	*	0.031
level of development (1979)	-1.337	***	0.495	-1.481	***	0.440	-1.354	***	0.459	-1.494	****	0.408
life expectancy	0.112	***	0.039	0.078	*	0.042	0.111	***	0.038	0.078	*	0.041
government consumption	-0.152	***	0.050	-0.162	***	0.048	-0.148	***	0.048	-0.158	***	0.047
GDP growth (lag)	0.141	**	0.058	0.129	**	0.057						
GDP per capita growth (lag)							0.140	**	0.58	0.128	**	0.057
real exchange overvaluation	-0.384	****	0.071	-0.351	****	0.071	-0.374	****	0.069	-0.342	****	0.069
oil production	0.087	*	0.046	0.097	**	0.046	0.086	*	0.044	0.096	**	0.044
population growth	0.370	*	0.215	0.494	*	0.253	0.526	**	0.236	-0.417		0.273
aid	0.037	*	0.022	0.033		0.022	0.036	*	0.021	0.032		0.021
ethnic fractionalization	-3.814	*	2.006	-3.927	**	1.963	-3.725	*	1.938	-3.810	**	1.895
British colony	1.079	**	0.484	0.900	*	0.466	1.022	**	0.469	0.846	*	0.451
gross capital formation	0.944		0.810	0.876		0.799	0.921		0.786	0.854		0.775
constant	5.411		3.879	8.167	**	3.895	5.308		3.690	8.261	**	3.708
R-sq	0.161			0.170			0.161			0.170		
wald chi2 (sig.)	0.000			0.000			0.000			0.000		
sigma_u	0.000			0.000			0.000			0.000		
sigma_e	5.542			5.535			5.406			5.401		
rho	0.000			0.000			0.000			0.000		
number of countries	43			43			43			43		
number of observations	1021			1021			1021			1021		

Note: *p<0.1; **p<0.05; ***p<0.01; ****p<0.001

TABLE 3. Democracy and economic growth in sub-Saharan Africa: 16 best-performing economies *versus* 27 other economies, 1980–2010.

	Model 5 (dependent variable: GDP growth)			Model 6 (dependent variable: GDP per capita growth)			Model 7 (dependent variable: GDP growth)			Model 8 (dependent variable: GDP per capita growth)		
	Coef.		Robust Std. Err.	Coef.		Robust Std. Err.	Coef.		Robust Std. Err.	Coef.		Robust Std. Err.
degree of democracy	0.116	**	0.056	0.113	**	0.054	0.049	*	0.027	0.044		0.028
duration of democracy	0.040		0.065	0.039		0.064	0.055	**	0.025	0.058	**	0.025
level of development (1979)	-4.158	***	1.237	-4.051	***	1.210	-0.375		0.354	-0.395		0.344
life expectancy	0.141	***	0.054	0.137	***	0.052	0.090	**	0.045	0.088	**	0.044
government consumption	-0.266	****	0.072	-0.259	****	0.071	-0.095	**	0.047	-0.092	**	0.046
GDP growth (lag)	0.026		0.067				0.092		0.060			
GDP per capita growth (lag)				0.022		0.064				0.089		0.059
real exchange overvaluation	-0.474	****	0.099	-0.461	****	0.097	-0.777		5.790	-1.269		5.682
oil production	0.183	****	0.046	0.177	****	0.045	-0.011		0.014	-0.010		0.014
population growth	0.200		0.218	-0.811	****	0.212	0.403		0.338	-0.505		0.328
aid	0.067	*	0.038	0.066	*	0.037	-0.004		0.022	-0.005		0.021
ethnic fractionalization	-7.531	****	1.614	-7.348	****	1.605	-1.111		1.173	-1.183		1.180
British colony	0.943		0.698	0.915		0.681	0.596		0.466	0.579		0.460
gross capital formation	0.139		0.989	0.143		0.964	2.356	****	0.596	2.304	****	0.580
constant	27.540	****	7.222	26.956	****	7.129	-5.722	*	3.144	-5.358	*	3.075
R-sq	0.219			0.218			0.153			0.152		
wald chi2 (sig.)	0.000			0.000			0.000			0.000		
sigma_u	0.000			0.000			0.000			0.000		
sigma_e	7.458			7.278			4.272			4.165		
rho	0.000			0.000			0.000			0.000		
number of countries	16			16			27			27		
number of observations	345			345			676			676		

Note: *p<0.1; **p<0.05; ***p<0.01; ****p<0.001

We carry out our empirical analysis through a TSCS regression model on an unbalanced panel dataset[10]. The random effects approach (RE) is widely used with panel data in which N is larger than T and with multilevel data (cf. Steenbergen and Jones 2002). A fixed effects model would require that we omit from the analysis some important explanatory variables – namely, a country's initial level of development, its ethnic fractionalization and British colonial legacy – since they are time-invariant, i.e. constant within units. It would thus prevent us from estimating the role of these factors. For this reason we preferred a random effects model (cf. Greene 2004). In addition, since the number of countries (43) is greater than the number of time points (30 years), a random effects model is expected to be more efficient than a fixed effects model, as it has N more degrees of freedom and it also uses information from the between-unit estimator (which averages the time-series observations of each unit to investigate differences across units). The Breusch-Pagan LM test rejects the null hypothesis, thus indicating the random effects model is appropriate. Finally, since we found some heteroskedasticity, we employ robust standard errors.

As for the choice of the dependent variable, a large part of the literature uses GDP growth per capita rather than GDP growth per se. Measuring the growth of per capita income implies a more direct focus on variations in the average wealth available to a country's citizens. Yet we also need to know when and whether our variables foster increased economic activities as such, even where these economic advances may not add to the wellbeing of individual citizens because they are offset by population growth. Therefore, we decided to use both variables. This not only allows us to further validate our empirical results (given that the different models using the two dependent variables produce very similar results), but also to compare them with those obtained by all other scholars.

When we look at all 43 sub-Saharan countries under investigation, the equations, as estimated, offer an explanation of GDP growth (Models 1 and 2 in Table 2) as well as of GDP per capita growth (Models 3 and 4). Statistically, the models fit the data well, with an overall R^2 of 16.1% to 17.0%. Following the empirical findings in Model 1 and 2, we can argue that our central hypothesis – the notion that, in Africa, democratic progress may positively affect the pace of economic progress – is well supported by the data. When the level of democracy increases, so does the rate of economic expansion (b=0.060). Political regime type can make an important difference among sub-Saharan African countries. Moreover, for regimes that are more fully democratic (i.e. Polity2 $\geq$ 6), democratic duration breeds economic performance (b=0.058).

A number of economic factors and other standard growth regressors also play a role. In line with convergence expectations, countries that had a lower initial level of development (as of 1979) were more likely to achieve higher growth rates. Countries where government consumption is comparatively low tend to grow more rapidly. As for oil wealth, contrary to the key conclusion reached by the "resource curse" literature – namely, that oil hinders growth – our data show that being an oil-producer did help African countries grow better over the thirty years we examined. High levels of aid similarly help foster economic growth, while a country's ethno-linguistic fractionalization tends to reduce it. Other standard economic and demographic control variables – i.e. real exchange overvaluation, population growth and British colonial legacy – also affect a country's economic performance in the expected direction. With the important exceptions of investments and, partly, of aid levels, our hypotheses are all confirmed. When we use GDP per capita growth as our dependent variable (Models 3 and 4), the results we obtain are almost identical.

Africa, however, is a vast and complex continent. While, in the aggregate, the area has been undergoing a period of sustained economic growth, progress has been far from even or homogeneous across the board. Accordingly, development scholars have increasingly warned that, while assessing the sub-Saharan region as a whole, we should also make a better effort to distinguish countries that have performed successfully from those that have been lagging behind (Ndulu – O'Connell 2008, Radelet 2010, Aryeetey et al. 2012). From our perspective, in particular, the key question is whether democracy variables are still relevant when we try to explain differences among high-growth as well as among medium- and low-growth African countries.

Thus, to better understand the aggregate results of Table 2, we carried out an additional analysis (Table 3) by separating the continent's best-performing economies from the rest and by applying our original models to each of the two groups. Our "lions" consist of the 16 countries that are ranked among sub-Saharan Africa's top 15 in terms of average GDP growth *or* GDP per capita growth over the 2000-2010 period

[10] Following the economic growth literature on Africa, we experimented with various standard growth regressors, including investments, trade openness, conflicts, landlockedness or decade. However, these variables present serious problems of multi-collinearity.

(namely, Angola, Cape Verde, Chad, Equatorial Guinea, Ethiopia, Ghana, Guinea, Liberia, Mozambique, Mauritius, Nigeria, Rwanda, Sierra Leone, Sudan, Tanzania and Uganda). The residual group includes the remaining 27 of our original sample of 43 countries, whether because they have been bad performers or simply not good enough. Models 5 and 6 show the results for the two groups (16 and 27 cases) when the dependent variable is GDP growth, models 7 and 8 when the dependent variable is GDP per capita growth.

In most cases, our key variables – democracy degree and duration – are significant and the signs are in the expected direction. For the lion economies, in particular, it appears that the extent of democracy matters, not so the length of the democratic experience (Models 5 and 6). For economic laggards, on the other hand, the amount of time spent under a democratic system seems a more valuable asset that the sheer level of democracy, albeit the latter is also a significant factor in one of the two models (Models 7 and 8).

As for the remaining growth regressors, our set of variables appears to explain the lion economies significantly better than they do with the rest of the pack. Among the former group, in particular, both oil and aid proved important ingredients for fast economic progress (Models 5 and 6). Over the past decade, for example, oil rents were a powerful driver of growth in places such as Angola, Chad, Equatorial Guinea, Nigeria and Sudan. In the likes of Mozambique, Rwanda, Liberia and Sierra Leone, on the other hand, it was aid that played a prominent role. When we turn to slow- or medium-growth economies, as we mentioned, the overall model seems much less efficient (Models 7 and 8). From our perspective, however, what is most interesting is that, in a context in which few variables confirmed their significance, the degree and duration of democracy once more demonstrate their relevance in fostering the pace of growth.

A few pairwise comparisons may further illustrate the link between democratic reforms and economic progress among African states. South Africa and Nigeria represent two particularly relevant economies, as they together account for about one half of sub-Saharan Africa's overall GDP. Figure 2 shows a positive association between political reforms and economic performance for both countries. South Africa, whose economy was negatively affected by domestic unrest and external sanctions during the better part of the 1980s, doubled its growth rates from a 1.6% average in 1980-1994 to a 3.3% average for the 1995-2011 post-transition period. Nigeria similarly jumped forward from a 3.6% average growth over the fifteen years prior to the re-introduction of multiparty politics in 1998 to a 6.0% average for 1999-2011. Thus, despite the fact that neither country has been fully exploiting its huge potential, these data tell us that, at a minimum, democracy did not prevent Pretoria nor Abuja from making some important economic progress.

If we turn to Mali and the Central African Republic – two of the numerous landlocked countries on the continent, poor and of relatively little economic relevance – we again find interesting trends (Figure 3). While post-military rule Mali satisfied the Polity threshold for democracy (6 or more) from 1992 on, the Central African Republic, despite significantly improving its ratings between 1993 and 2002, never quite made it beyond the threshold and saw its scores plunging again below zero after François Bozize's 2003 coup. The political ups and downs of the two countries reflected into different economic performances. During the 1980-1992 period, both countries showed high economic instability, and while Bamako's 1.1% annual growth average was slightly superior to Bangui's 0.0%, it was Mali that recorded the single worst result in the decade (-11.4% in 1985). The difference between the two countries became much more evident after Mali embarked in a transition to multiparty politics in the early 1990s. For every single year since 1994, the country's economic performance was superior to that of the Central African Republic, producing a strong annual average lead of 4.9% against 1.7% for the 1993-2010 period.

Finally, Zambia and Zimbabwe are two mineral-rich (non-oil) countries of comparable demographic size and geographic location. Their 1980-2010 political trajectories have been very different, and so have their recent economic achievements (Figure 4). Zambia's Polity ratings improved dramatically from an average -8 for 1980-1991 – the last decade of Kenneth Kaunda's twenty-seven-year long regime – to a post-transition average of +4 for the 1992-2010 multiparty period. The economy appears to have followed suit, with rates of growth going up from a 1.2% average to a 3.4% average. In Zimbabwe, on the contrary, political and constitutional developments in the late 1980s made Robert Mugabe's rule more autocratic, and Polity scores accordingly deteriorated from a -1 (1980-1991) to a -4 (1992-2010). Once again, growth trends followed the country's political closure, with the positive 5.4% average performance recorded during the 1980s giving way to a bleak -1.7% in the post-1991 period, with the economy spiralling dramatically downwards, in particular, between 1999 and 2008.

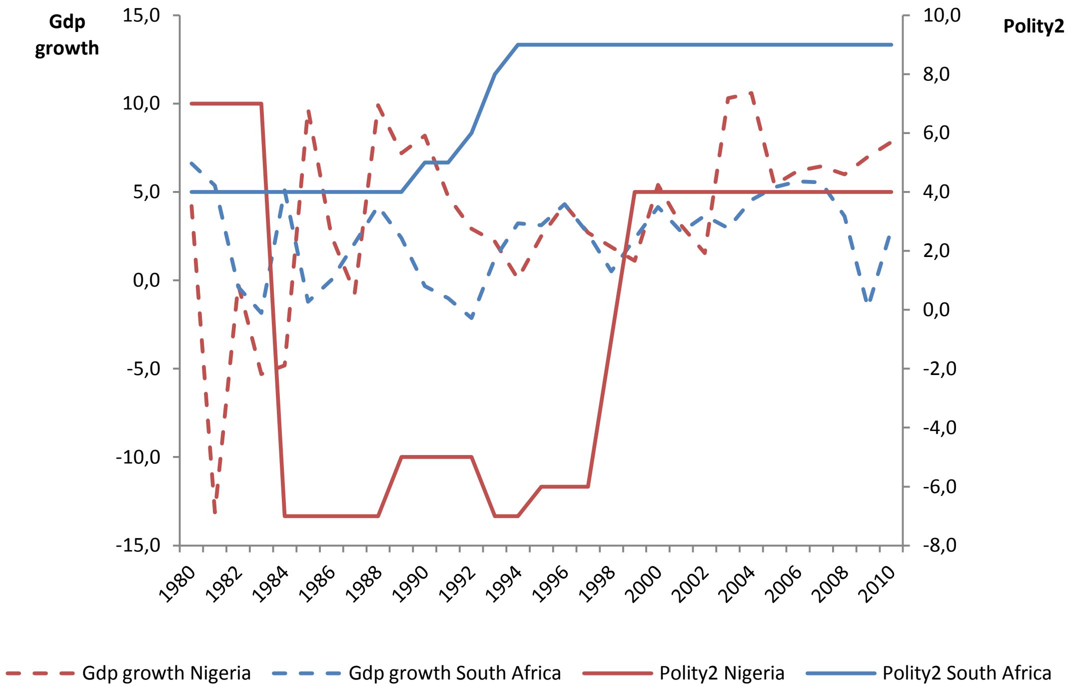

FIGURE 2. Economic growth and democratic progress in South Africa and Nigeria, 1980-2010.
Sources: World Development Indicators and Polity IV Project.

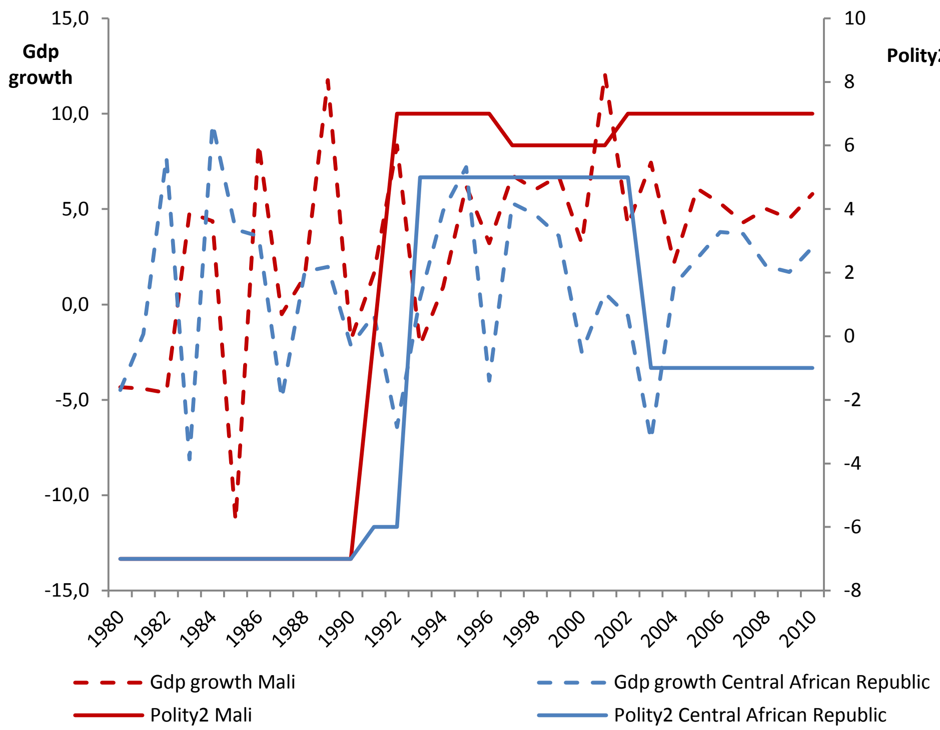

FIGURE 3. Economic growth and democratic progress in Mali and Central African Republic, 1980-2010.
Sources: World Development Indicators and Polity IV Project.

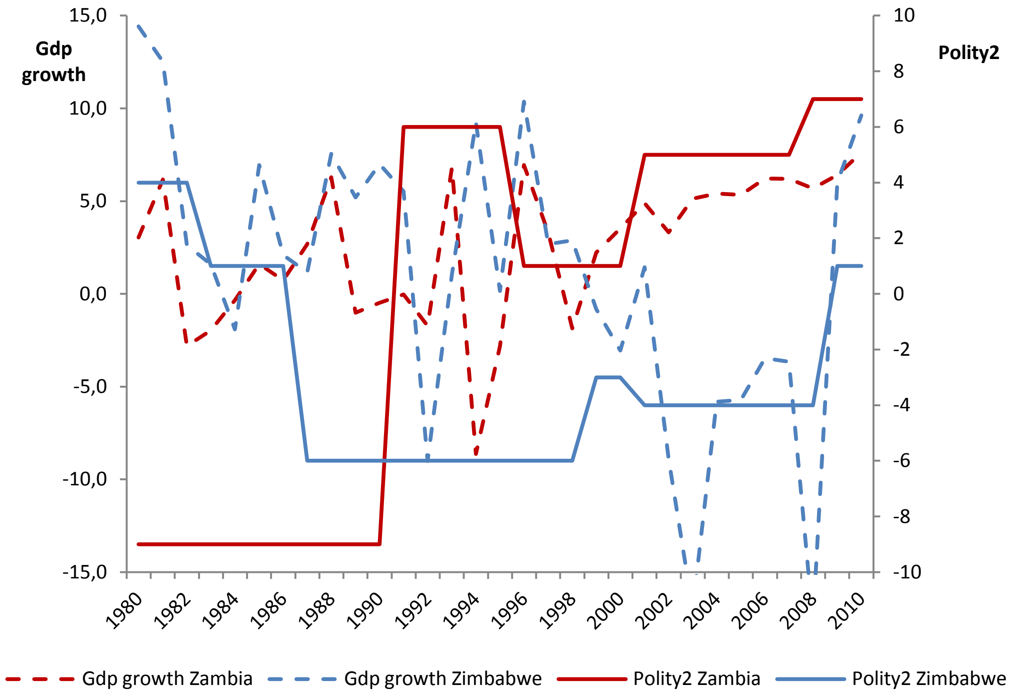

FIGURE 4. Economic growth and democratic progress in Zambia and Zimbabwe, 1980-2010.
Sources: World Development Indicators and Polity IV Project.

5. Conclusions

The vast literature on economic growth in Africa that has been produced from the 1990s failed to fully examine the impact of democratic political systems, as opposed to autocratic regimes, on the continent's development. Over recent years, the need to address this topic has become ever more pressing. On the one hand, the very timing of the spectacular growth performances experienced over the last decade by the so-called "African lions" – that is, diverse countries, with different institutional frameworks, growing at an astonishing pace – raises the question of a possible link between regime type and economic advancements. On the other hand, more than twenty years have now passed since the continent embarked in an unprecedented period of democratic transitions. Today we have enough data to analyze the democracy-growth issue from an empirical point of view. This paper conjugates the existing scientific knowledge on the determinants of economic growth in Africa with that on the economic effects of political regimes, with the aim of better understanding whether, in the sub-Saharan area, democracy favored or rather hindered growth.

A casual observation of African affairs suggests that economic progress is being achieved in contemporary Africa *after* the continent made significant democratic progress. Fears that democracy would slow down the economic development of sub-Saharan countries – fears that were frequently voiced both when pluralistic institutions were abandoned back in the 1960s-1970s, as well as when multiparty reforms were undertaken in the early 1990s – appear to have been unfounded. However, a more systematic approach is needed to fully investigate the possibility of a causal link between the two phenomena. A review of existing knowledge allowed us to say, at most, that the continent's democracies were *not* outperformed by its authoritarian regimes. Yet existing studies are limited in both time and geographical coverage, as they typically observe only a subset of sub-Saharan countries and did so only for periods that normally exclude the recent high-growth years. We thus set out to conduct an expanded empirical analysis on the determinants of economic growth in Africa, with a focus on democracy and its duration as key regressors in our cross-country growth-accounting equation. Our findings provide firmer empirical ground that allows us to claim that the degree and the duration of a country's democracy significantly contributed to promoting economic progress in contemporary Africa. This is true when we look at the region comprehensively. But, with some qualifications, democracy remains a key factor also when we unpack sub-Saharan Africa to account separately for the stunning progress of its most successful economies as well as for the much less impressive performance of other countries on the continent.

What are the main implications of these findings? First, democracy is far from a luxury or a cost that poor African countries should better avoid. Rather, it appears to be a factor that can contribute to speeding up their economic development. There is no need for authoritarian "developmental" rule for these societies to "mature". It is rather the contrary. Secondly, the economic impact of democracy may be part of a virtuous cycle in which democracy helps delivering economic growth and economic growth, in turn, helps further strengthening recently-established democratic regimes. This should sound as a warning to some African lions tempted by neo-authoritarian projects: growth is not enough. Neither to further sustain growth, nor to ensure the loyalty of their own citizens. At the same time, the case of Mali, a quasi-success case of economic development and democracy which in 2012 quickly turned into a semi-failed state, suggests that there is no perfect and universal recipe for success, and that, in Africa, even those countries that have been praised for trailing a good path still rest on fragile foundations.

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