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Aid, political business cycles and growth in Africa

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Abstract: This paper develops a model of opportunistic behaviour in which an incumbent government resort to expansionary fiscal and/or monetary stimuli to foster economic growth and thus, maximize the probability of re-election. Using a panel dataset of 51 African countries covering the period 1980 to 2012, we test first, whether aid and institutional quality factors have an effect on growth. We find evidence to support the most recent studies showing that aid has a positive impact on growth. We however, do not find evidence to support the proposition that institutional quality is a sine qua non conditional for aid to achieve impact on growth. Second, we test whether donor aid facilitates political business cycles, and investigates their effect on growth. We find evidence that donors, through guaranteeing support to incumbent governments, unwittingly do instigate political business cycles. Forbearance, and sometimes complicity by donors, aid seems to allow incumbent governments to instigate macroeconomic stimuli that ensure electoral victory with no fear of losing aid.

Keywords: aid, growth, institutional quality, political business cycles, Africa
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1   Introduction

The effectiveness of aid has over the past two decades come under scrutiny for at least two important reasons. One is related to donors' legitimate desire to measure, establish and improve the effectiveness of their activities and policies. This is in part due to the fact that aid critics have questioned the effectiveness of aid arguing that for several decades it has been pumped, especially into African countries, with little to show for it. As a result, a growing body of studies has been conducted to test whether aid does impact growth, often leading to conflicting conclusions. Another equally important reason lies away from technical concerns, under the space of political economy considerations. The economic crisis and austerity policies, especially in Europe, have put pressure on the aid budgets, with citizens and constituents alike questioning the justification of continued aid flows to developing countries when the donor countries themselves are in crisis. Some countries, like the United Kingdom, have given their assurances to keep their aid commitments despite a growing public scrutiny and discontent.

Aid, under such circumstances, has often been justified on altruistic grounds. The altruistic discourse emphasizes the moral obligations that the international community has to help those in desperate need. A recent speech by the British Prime Minister, David Cameron, encapsulates this view: 'We are the kind of people who believe in doing what is right. We accept the moral case for keeping our promises to the world's poorest even when we face challenges at home. When people are dying, we don't believe in finding excuses. We believe in trying to do something about it […] it says something about this country. It says something about our standing in the world and our sense of duty in helping others'.[1]

Besides the altruistic motives, donor countries have traditionally used aid on a more discretional basis, in accordance with their geopolitical interests and priorities. Whereas European countries have historically focused on their former colonies, the USA has favoured since the Cold War the countries that are regarded as strategic allies in foreign policy affairs, independently of their democratic credentials.

The multiplicity of donor objectives can influence the behaviour of incumbent governments that seek to capitalize on the opportunities that aid brings to increase the probability of re-election or the continuation of a political party dominance. Given these political economy considerations, we aim to investigate the following questions: first, does aid contribute to political business cycles? If so, what are the consequences of such political behaviour for growth among African economies? Second, what is the role of institutional quality factors in facilitating growth? Overall, this paper contributes to the existing literature of aid effectiveness in two ways: first, it examines the impact of aid and institutional quality variables, on growth using a panel dataset of 51 African countries covering the period 1980 to 2012. We find evidence to support the most recent studies that show that aid does have a positive impact on growth. We however, do not find evidence to support the proposition that institutional quality, measured by bureaucratic quality and democratic accountability, is a sine qua non conditional for aid to achieve impact on growth.

Second, we develop a model of opportunistic behaviour in which an incumbent government resorts to expansionary fiscal and/or monetary stimuli to foster economic growth and with it, maximize the probability of re-election. We test, whether donor aid facilitates such political

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[1] PM Speech at the G8 Nutrition for Growth Summit in London, on 8 June, 2013. Available at
https://www.gov.uk/government/speeches/pm-speech-at-g8-nutrition-for-growth-event

business cycles, and investigate their effect on growth. We find evidence that donors, through guaranteeing support to incumbent governments, unwittingly do instigate political business cycles. This is relevant in the context of African countries where the fiscal constraints are binding, and where donor funds often loosen such constraints.

The remainder of the paper is structured as follows: Section 2 provides a review of the literature on aid and growth, paying particular attention to the most recent generation of studies. Section 3 discusses the issue of aid and political business cycles, and introduces a model of opportunistic incumbency that links aid to pre-election policy behaviour. Section 4 presents the empirical model that is estimated. The model posits aid as an important determinant of political business cycles. Section 5 presents the results while Section 6 concludes with some reflections of the main findings.

2   The aid-growth causal linkages: what do we know?

The starting point for examining the issue of aid effectiveness is theory. This is important because one of the main weaknesses of some existing literature is the failure to establish a sound theoretical foundation of the causal relationship, and functional forms, of the aid-growth nexus (Easterly et al. 2003). Hansen and Tarp (2000) classify the literature into first, second and third generation studies, all of which focused on different possible theoretical links, namely the aid-savings-growth link; the aid-growth link, and the aid-policy-growth link, respectively.

The first generation of studies relied on a Harrod-Domar (H-D) growth model, which assumed that aid was exogenous and contributed to growth through the stock of capital (see e.g. Chenery and Eckstein 1970; Papanek 1972; Robinson 1971; Michalopoulos and Sukhatme 1989; and White 1992a, 1992b for earlier reviews). This generation of studies emphasized the importance of capital accumulation, particularly among many African countries that had just gained independence. The argument was that aid would make up the shortfall in foreign reserves and domestic savings that many countries consistently faced at the time (Chenery and Strout 1966). In that process, the geopolitical landscape of the Cold War also played a role in the distribution of aid flows (Bourguignon and Leipziger 2006; Bobba and Powell 2007). Easterly (1999) calls this framework the financing gap theory, which assumes that countries face a financing gap, which is plugged by foreign aid.

The second generation of studies relies on linear reduced form equations, following the Solow-type growth models, to investigate the relationship between aid and growth. Here, investment is treated as the key transmission channel through which aid impacts on growth. The conjecture is that increasing aid loosens recipient countries' financial constraints, thus allowing the countries to acquire the capital needed for economic growth (see Mosley et al. 1987; Mosley et al. 1992; Stoneman 1975; Dowling and Heimenz 1982; and Gupta and Islam 1983). The underlying assumption of these studies is that labour, technology and the capital-output ratio are constant over time, something that could hold true in a steady state of the economy, which nonetheless, diverts from what we currently observe in most African economies. Barro and Sala-i-Martin (1998) reached the conclusion that economic growth is determined by intricate combinations of factors, which may include aid, hence the link between aid and growth cannot be analysed in a simple framework. Hansen and Tarp (2000) provided a comprehensive overview of the first two generations of studies and overall, they concluded that aid has a positive impact on growth. In the remaining part of this section, we focus more specifically on the third generation of studies.

The third and most recent generation of studies rely on the endogenous growth theory where human capital and political economy considerations are included in the reduced form equations; and where aid, unlike in the first and second generation of studies, is treated as endogenous in a non-linear relationship with growth. Accordingly, an aid squared term is included in the equations to capture possible non-linearities in the aid-growth relationship. In testing the assumption of endogeneity in time series, Juselius et al. (2014) find that aid is not usually exogenous. They argue that, most likely, the choice of the years included in the study will matter as years since the Cold War may have had more economic interest attached to aid giving. Another natural option is to report on impact of aid since the end of the Cold War as suggested by Lu et al. (2010). However, as pointed out by Arndt et al. (2010) a shorter period would ignore the cumulative and longer-term effects of aid.

In fact, a longer term perspective has been adopted more regularly in the analysis of the aid-growth relationship. After all, we should not expect an instantaneous impact of aid on growth, but one with a lagged effect. The most recent studies of the third generation have taken advantage of longer and more complete datasets from developing countries, together with recent developments in panel data econometrics, to investigate the aid-growth relationship. The conclusions are generally mixed. While Rajan and Subramanian (2005) along with others (e.g. Doucouliagos and Paldam 2011) argue that aid has not resulted in higher growth in developing countries, Arndt et al. (2014) and Juselius et al. (2014), find strong evidence of positive impacts of aid on growth.

Clemens et al. (2004) indicate that in the short run aid allocated to support budget and balance of payment commitments as well as infrastructure result in rising income. They argue that aid promoting democracy, health, and education will have a long-run impact on growth. Minoiu and Reddy (2010) find that when total aid is separated into developmental and non-developmental aid, the latter does not contribute to growth, while the former strongly contributes to growth.

Particularly relevant for our study is the premise that political economy considerations can play a role in enhancing or undermining the effectiveness of aid. In an earlier study belonging to this generation, Boone (1996) showed that liberal political regimes and democracies perform better in terms of welfare dimensions than highly repressive regimes. The implication of his findings is that short-term aid could be more effective if targeted to support new liberal regimes. Similarly, Kosack (2003) reported that aid is positively associated with aggregate welfare but only in democratic environments. Burnside and Dollar (2000) also highlighted the importance of effective public management in enhancing the effectiveness of aid. In fact, an important element in the third generation of studies is the view that democratic processes and good governance are important conditions that facilitate aid effectiveness, a proposition that is also linked to a growing literature on the connection between democracy and growth (see e.g. Barro 1991; Wacziarg 2001), and which we test in the empirical model and analysis of Sections 4 and 5.

The discussion above has, so far, provided an overview of the most recent evidence on aid effectiveness. Differences in methodologies, functional forms and specifications, the length and quality of data, have resulted in different conclusions being reached. More importantly, the third generation of studies highlights the important role that the politics of aid disbursement and political economy considerations play in determining whether or not aid is effective in a given context. Overall, we conclude that the most recent and comprehensive analyses show that aid has a positive impact on growth. The results are generally consistent although it is important to point out that the literature also highlights the fact that aid does not always work in all contexts

and at all times.[2] Nevertheless, the most recent evidence dispels a mistaken scepticism that aid can harm recipient economies by discouraging the mobilization of domestic revenues. In the next section, we concentrate on the connection between aid and political business cycles.

3   Aid and political business cycles

The focus of aid on poor countries has found a solid foundation in the principles of social justice. Welfare economics suggests that policies that focus on the poorest are welfare-enhancing (Amartya 1970; Arrow 1984). In accordance with these principles, donor agencies would target their funds and policies at the poorest countries or communities. Shared perceptions about the causes of poverty can, however, play an important role in persuading political constituencies in donor countries to support aid for altruistic motives. In fact, the disbursement of aid has not always been based purely on economic principles or altruistic motives. In allocating their funds, donor agencies may be driven by the desire to achieve specific political objectives.

Alesina and Dollar (2000) find that the direction of aid is dictated as much by political and strategic considerations, as by the economic needs of the recipient countries with colonial past and political alliances playing a major role in aid distribution. Similarly, Barro and Lee (2005) find that IMF loans tend to be larger and more frequent when a country is more connected politically and economically to the United States and major European countries, whereas Dreher et al. (2009) report that elected members of the UN Security Council receive favourable treatment from the World Bank. On a country level analytical setting, Faye and Niehaus (2012) examine whether or not donors use bilateral aid to influence elections in the Palestinian Authority. They found that incumbent governments that align with donors receive more aid during election years, while those less aligned receive less, regardless of incumbent characteristics. This indicates that geopolitical factors and international trade objectives can drive aid agencies to utilize aid resources for non-altruistic purposes. This may also explain why many donors tend to crowd around countries which are seen as strategically important (Shepherd and Bishop 2013).

Baulch and Vi An Tam (2013) have shown that bilateral donors tend to be more neutral in their support to developing countries relative to multilateral donors that are more pro-poor oriented. In fact, some European countries tend to focus on their former colonies, while the USA favours countries that are important for its political agenda. In 2012, despite the reported high level of corruption in Afghanistan, the USA designated Afghanistan a major (non-Nato) ally, which entitles that country to receive substantial amounts of aid, including military aid.

The multiplicity of donor objectives may also lead to conflicting outcomes. Recipient countries could realize the dilemma that donors face and take advantage of that by under-delivering or under-performing their economic and social agenda, with the expectation of receiving more aid, especially in circumstances when such agenda would entail reforms that would engender growing political opposition in the recipient country. Mosley et al. (2012) discussed this in the context of governments choosing to reward some groups over others, or to increase pro-poor spending in order to forestall political opposition. This was the case for Ghana in the 2000s where expenditure was increased in geographical regions where the incumbent party had experienced challenges securing political victory.

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[2] For a systematic review of the literature on the impact of aid on growth, see Mekasha and Tarp (2013) and also the most recent collection of studies forthcoming in the UNU-WIDER special issue of World Development on Aid Policy and the Macroeconomic Management of Aid.

Celasun and Walliser (2008) argue that lack of predictability of aid flows contributes to reduced aid ineffectiveness. They argue that aid volatility is disruptive to economic management in recipient countries. Yet there may also be reasonably good reasons for disbursements to be delayed, e.g. recipient countries failing to meet the minimum conditions that should trigger further disbursements.[3] There may also be fundamental changes in the political conditions in a country that would make it difficult to assess whether or not the allocated resources would be used for the intended purposes.[4] There are also cases where disbursements are made even if the recipient shows non-committal signals e.g. Kenya under Arap Moi in the 1990s (Easterly 2003).

In Zambia the increased inflow of aid did not result in income growth. Instead, incomes remained below their 1960s level despite huge aid inflows (World Bank 2002). The steady inflow of aid into Mobutu's Zaire (now DRC) is alleged to have encouraged incompetency and corruption. In Ethiopia, the support to Meles Zenawi's government is praised for reducing poverty, but the system of governance became increasingly autocratic, as is the situation in Rwanda and Uganda, some of the countries praised as case studies showing the effectiveness of aid. These cases indicate the possibility of aid playing a role in instigating political business cycles in imperfect competitive political environments.

Given these political economy considerations, we set to investigate the following questions: first, does aid contribute to political business cycles that facilitate opportunistic behaviour of the incumbent? Second, if so, what are the consequences of such political behaviour for growth among African economies? Our interest in these questions arises from the possibility of incumbent governments having the incentives to resort to expansionary fiscal and/or monetary policies to foster economic growth and with it, employment and the levels of prosperity before elections, so that they maximize the probability of re-election. Very little is known about these questions; and the limited existing evidence is mixed. In the next section we briefly review the latest evidence and develop a political economy model of opportunistic incumbency to address the aforementioned questions.

3.1 Donor forbearance and the opportunistic incumbent

Briggs (2012) investigated the relationship between aid volatility and presidential incumbency. He found that changes in aid moving into the year before the election gives the incumbent advantage over the election. Similarly, Jablonski (2014) examined the spatial distribution of multilateral donor projects in Kenya from 1992 to 2010 and found that Kenyan regimes have consistently manipulated aid allocation in favour of co-partisan and co-ethnic voters, confirming that aid distribution in the specific context of Kenya increases incumbent vote share. In contrast, Dietrich and Wright (2014) found that economic aid increases the likelihood of transition to multiparty politics, while democracy aid furthers democratic consolidation by reducing the incidence of multiparty failure and electoral misconduct.

Given their internal fiscal weaknesses, developing countries are usually not in a position to sustain pre-election stimulus, therefore they may turn to aid to sustain their expenditures. Donors in such scenarios would offer a fall-back position for governments with political business cycle strategies. Dreher and Vaubel (2004) examined IMF and World Bank lending, as

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[3] Namibia missed out on a lot of money from the US Millennium Challenge Corporation because it failed to request for the disbursement of the money.

[4] There were several delays and eventual termination of loans to Zimbabwe in the period 1998 to 2000 because of the way the economy was being managed in contrast to agreed terms with the IMF.

well as monetary and fiscal policies in aid recipient countries. They found that new net credits from the IMF are significantly larger prior to elections and that borrowing from the World Bank is significantly smaller after elections.

To investigate the questions outlined above, we formulate a model of opportunistic incumbency that follows the seminal work of Nordhaus (1975) in which voters base their voting decisions on how effective the incumbent government is in delivering social services and keeping unemployment low. We assume that voters have immediate expectations on macroeconomic performance but short memory of past policy experiences (Rogoff and Sibert 1988; Rogoff 1990).[5] Under such conditions, the opportunistic incumbent will, for its electoral benefit, exploit the slow adjustment of inflationary effects on the economy to stimulate the economy and reduce employment through fiscal and monetary stimuli. The objective of the incumbent, therefore, is to maximize the probability of re-election based on economic performance.

More formally, unemployment, U_t, and inflation, π_t, are functions of economic performance that voters assess when favouring or penalizing the incumbent.[6] Voter dissatisfaction in time of elections can be captured by a loss function that is increasing with poor economic performance such as:

$$L(U_t, \pi_t) = U_t + \lambda \frac{(\pi_t)^2}{2} \tag{1}$$

where λ is a preference weight that voters put on the general level of prices relative to unemployment. Now, even if voters have a short memory of past policy experiences, there might be retrospective effects on voting behaviour, so the voting function for an election in time t would be given in past experiences as:

$$V_t = \Upsilon[\delta(n)L(U_{t-n}, \pi_{t-n}]) \tag{2}$$

where the votes for the incumbent government (Vt) are now seen as a decreasing function of loss from economic performance in *T-1* periods, i.e. $\Upsilon' < 0$, while $\delta(n)$ captures the weight voters put on a loss n periods in the past. Voters' short memory of past policy experiences would mean that $\delta(n)$ is decreasing in n periods, with the most recent economic events weighting more heavily on voters' decisions. Under such a framework, a political business circle would emerge if the incumbent wishes to introduce fiscal and monetary stimuli to reduce the unemployment rates, regardless of the longer term inflationary consequences of doing so, in order to increase the incumbent's probability of re-election.

An important issue to consider in this model is the possibility of tacit collusion between donors and the aid recipient government that creates a mutually beneficial outcome. The donor may have the objective of, say, disbursing aid funds. To achieve this, the donor requires the co-operation of the recipient government. The recipient government may also have its own objective, like prolonging the stay in office, and therefore co-operates with the donor. The two players may tacitly agree to enhance each other's position.

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[5] Brender and Drazen (2008) have shown that while the effect of higher growth in real GDP on re-election probabilities is insignificant in developed countries, it is statistically significant in less developed countries.

[6] For simplicity, we focus here on unemployment as a proxy for aggregate deprivation, but the model could also be extended beyond the Phillips curve relationship to incorporate other well-being dimensions such as poverty.

From the incumbent's perspective, such co-operation may result in the generation and sustenance of political business cycles through a number of ways. First, by guaranteeing financial support to the government, the donor may indirectly induce fiscal and/or monetary stimulus. Second, some donor countries, through geopolitical considerations, may tolerate government actions that compromise the effectiveness of aid. It should be noted that donors can influence institutional quality through aid conditionality and thus can determine whether or not a country has an electoral cycle (Rogoff 1990). However, the incumbent may seek to maximize aid receipts and political return (or political life in office), subject to the terms set by donors, the government's income sources, and the ability to institute a political business cycle.

Since structural adjustment policies of the 1970s to 1990s, aid donors have been emphasizing greater economic openness. Treisman and Gimpelson (2001) have pointed out that the pressure for improvements in governance, democracy and institutional reform in return for aid and international financial institutions' support has translated into political business cycles. Donors have been keen to consistently support countries that hold competitive legislative elections, signalling to others the possible rewards for democratization (Bratton and van de Walle 1997). They punish bad performers by withholding aid (e.g. Malawi after gay rights fiasco; Zimbabwe after expropriating land from white farmers; Kenya under Arap Moi). It therefore could be anticipated that incumbent governments take advantage of aid conditions to induce political business cycles to win elections as long as the countries behave in ways acceptable (or tolerable) to donors (Block 2002; Mosley and Chiripanhura 2012). Many poor African countries have significant budgetary support from donor countries and are therefore likely to toe the line.

From another perspective, political business cycles may be induced through a recipient government's increase in social expenditure and the promotion of policies that have direct impact on the poor (e.g. free health and education, and the provision of water and electricity services to slums), which coincide with donor conditionality for poverty alleviation, and also buy loyalty from voters. In fact, the utility of aid increases if donor conditionality coincides with government opportunistic objectives. Therefore, we posit that donors are an important determinant of political cycles and hence of the effectiveness of aid. We factor these influences in the empirical analysis described below. The impact of donors is captured through their influence on institutional quality via aid allocations, and through forbearance to pre-election fiscal and/or monetary stimulus. Given these issues, in the next section we include pre-election stimuli variables in the empirical model to test for the possible existence of political business cycles and their impact on growth.

4   Empirical analysis

The empirical analysis is based on panel data from 51 African countries. The data covers the period 1980 to 2008 for all countries for which data is available. The data sources are mixed: they include the World Bank's World Development Indicators, the IMF Global Finance Statistics (GFS: 2011 edition), particularly for fiscal variables; the Quality of Government database held at the University of Gothenburg (April 2011 version), the International Country Risk Guide (ICRG) data on the quality of government as well as the African Elections database. The triangulation of data sources helped to improve the quality of the data as well as to increase the degrees of freedom.

We build the model specification on the foundations of growth equations presented in various studies belonging to the third generation discussed above. The dependent variable, as with Easterly (2003) and Burnside and Dollar (1997), is GDP per capita growth. We include aid, aid

squared, an interaction term of aid and institutional quality, depth of financial intermediation, and regional dummies for West, East, North, Central and Southern Africa to capture some of the influence of omitted spatially-correlated fixed effects, such as those emanating from geography and natural endowments. Our definition of aid is total net overseas development assistance as share of GDP. This is to address the problem that some countries may be receiving aid, but paying back more to the international community such that on balance they expatriate money out of the economy. We include the square of aid to capture possible nonlinearities in the aid-growth relationship as suggested in Hansen and Tarp (2000). We experiment with two institutional quality variables, namely the ICRG measures of bureaucratic quality that measures the institutional strength and quality of the bureaucracy, and democratic accountability that measures how responsive a government is to its people. Depth of financial intermediation is measured by the ratio of M2 to GDP.

We also include conventional covariates such as inflation, trade openness, government consumption and the budget deficit in the regressions, to capture the prevailing macroeconomic policy framework in the country i at time t following Durbarry et al. (1998), and also the vast majority of third generation studies (see Table 1).

The summary statistics in the table indicate the extent of variability in various aggregates across African countries. Mean GDP per capita growth is very low at less than 1 per cent, but has a large variance. The data shows significant variance across countries' degree of financial depth, inflation level and trade openness. The level of agricultural sector contribution to GDP is relatively high. The variation across countries' statistics is evident in differences in and significance of regional dummies in the estimated equations as discussed below.

Given the possible transmission channels through which aid impacts on growth as outlined in Section 2, we adopt a framework in which the transmission can be from aid through investment to growth, where investment is measured by the share of gross capital formation, and foreign direct investment to GDP. We explicitly take into account the importance of agriculture in the domestic economy, measured by the share of agriculture in GDP, to capture the stages of development, and as suggested by the Lewis model, we conjecture that the contribution of agriculture declines over time as other sectors of the economy, especially manufacturing and services, take over (Lewis 1954). We predict aid to be positively associated with the dominance of agriculture, but not necessarily related to economic growth. Therefore, we exploit the share of agriculture in GDP as an external instrument in the sys-GMM equations discussed below.

Similarly, we use the logarithm of population as an external instrument, which capture the scale of the economy. Easterly and Rebelo (1993) and Gebregziabher and Niño-Zarazúa (2014) find that the scale of the economy is an important determinant of public spending, with countries with higher population exhibiting lower public spending. Therefore, we predict a negative and significant association between aid and the scale of economy, yet there is no reason to suspect that a country can experience higher or lower economic growth simply because it has more or less people. The results reported in Tables A1 and A2 of the Appendix and the Hansen test of over-identifying restrictions reported in Tables 2a and 2b indicate that the validity of the instruments cannot be rejected. Following the model of opportunistic incumbency discussed above, we present the general form of the growth equation as follows:

$$Y_{it} = \alpha + \beta x_{it} + \phi w_{it} + e_{it} \qquad (3)$$

Table 1: Summary statistics

Variables	Definition	Data source	Obs	Mean	SD	Min	Max
Growth	GDP per capita growth	WDI	1360	0.9823	6.9083	-50.0465	90.1399
Aid	Total net overseas development assistance as % of GDP	WDI	1317	12.4345	13.2095	-0.2770	108.325
Investment	Total Investment ratio of GDP resulting from the ratios of gross capital formation and foreign direct investment to GDP	WDI	1207	22.7711	14.5561	-23.4742	258.7798
Inflation	Annual growth rate of the GDP implicit deflator that shows the rate of price change in the economy as a whole	WDI	1354	54.7722	765.471	-29.1726	26762.02
Budget deficit	Budget deficit as % of GDP	QoG WDI	721	-3.3069	5.15572	-21.4068	40.4263
Government consumption	General government final consumption expenditure measured as % of GDP	WDI, IMF	1280	15.7760	7.3814	2.2875	69.5428
Financial depth	Money and quasi money supply (M2) measured as % GDP	WDI	1291	27.9675	18.3993	0.9180	99.3152
Trade openness	The sum of exports and imports of goods and services measured as % of GDP	WDI, QoG	1334	70.3213	35.9695	6.3203	275.2324
Bureaucratic quality	ICRG index that measures the institutional strength and quality of the bureaucracy	ICRG	910	1.4044	0.9403	0	4
Democratic accountability	ICRG index that measures how responsive a government is to its people	ICRG	883	2.7721	1.2357	0	5.5
Stage of development	Agriculture added value as % of GDP	WDI	1312	28.3302	16.6664	1.8651	93.9774
Scale of economy	Logarithm of total population	WDI	1479	15.6008	1.4461	11.4583	18.8349
Pre-election fiscal stimulus	Dummy = 1 if the government runs a budget deficit prior to a presidential election	AED	1261	.05392	0.2259	0	1
Pre-election monetary stimulus	Dummy = 1 if the government allows money supply to growth in excess of GDP growth prior to a presidential election	AED	1479	.05882	0.2353	0	1
West Africa	Benin, Burkina Faso, Cameroon, Cape Verde, Côte d'Ivoire, Equatorial Guinea, Gabon, Gambia, Ghana, Guinea, Guinea-Bissau, Liberia, Mali, Mauritania, Niger, Nigeria, Sao Tome and Principe, Senegal, Sierra Leone, Togo	UN Stats; AfDB	1479	0.39215	0.4883	0	1
North Africa	Algeria, Egypt, Libya, Morocco, Sudan, Tunisia	UN Stats; AfDB	1479	0.1176	0.3222	0	1
Central Africa	Burundi, Central African Republic, Chad, Congo, Democratic Republic of Congo	UN Stats; AfDB	1479	0.0980	0.2974	0	1
Southern Africa	Angola, Botswana, Lesotho, Madagascar, Malawi, Mauritius, Mozambique, Namibia, South Africa, Swaziland, Zambia, Zimbabwe	UN Stats; AfDB	1479	0.2352	0.4243	0	1
East Africa	Djibouti, Eritrea, Ethiopia, Kenya, Rwanda, Somalia, Tanzania, Uganda	UN Stats; AfDB	1479	0.1568	0.3637	0	1

Sources: World Development Indicators (WDI); Quality of Governance database (QoG); IMF Global Finance Statistics; the International Country Risk Guide (ICRG); United Nations Statistics Division (UN Stats); African Development Bank (AfDB), and the African Elections Database (AED).

where the subscripts i and t denote country and year respectively; Y_{it} measures real GDP per capita growth; x_{it} is a vector of economic variables that include aid and aid squared, total investment, inflation, budget deficit, government consumption, financial depth, and trade openness; w_{it} is a vector that captures institutional quality and its interaction with aid to test for the joint effect of these two variables, in line with the Burnside and Dollar (1997) thesis; whereas a, β, φ, and e are the intercept, the parameter estimates and the idiosyncratic error term, respectively. As we anticipate that aid is correlated with the quality of government, we include an interaction term of these two variables in the empirical specification in order to establish the joint effect of the two variables. Equation (3) tests whether aid has a significant impact on growth. We also experiment on various lags of the aid variable, given that it may take time before the impact of aid feeds into growth. We expand Equation (3) to capture the effect of political business cycles as follows:

$$Y_{it} = \alpha + \beta x_{it} + \phi w_{it} + \eta D_{it} + e_{it} \tag{4}$$

where x_{it}, and w_{it} are as defined in (3), and D_{it} is a vector that captures the presence of fiscal or monetary pre-election stimuli linked to political business cycles. A fiscal stimulus would occur if the government runs a budget deficit prior to an election. We measure this in D_{it} by including a dummy variable that equals one if a country runs a deficit in a year prior to an election. A monetary stimulus occurs when the government allows money supply to growth in excess of GDP growth prior to an election. This is measured in D_{it} by including a dummy variable that takes the value of one if money supply growth in greater than GDP growth in the year prior to an election, zero otherwise. In both cases of fiscal and monetary stimuli, the pre-election boost is used by the opportunistic incumbent to stimulate support to win an election, and to ease intra-state conflict on resource distribution. As argued above, this could be exacerbated by aid, or occur with the blessing of donors as long as the incumbent comply with the donors' interests. We note that investment and aid contained in x_{it} of Equation (4) are likely to be endogenous. Growth in investment may be driven by economic growth, just as much as more growth may generate more aid inflows. Thus, we decompose the content of vector x_{it} in Equation (3) and run investment and aid functions separately as follows:

$$A_{it} = \alpha + \theta Y_{it} + \beta x_{it} + \phi w_{it} + \psi z_{it} + \upsilon_{it} \tag{5}$$

where aid, A_{it}, is a function of growth, Y_{it}, the covariates included in x_{it}; the measures of institutional quality in w_{it}, and a vector z_{it} that measures the scale of the economy and the stage of development, which play the role of external instruments in the growth Equation in (7), and which are expected to be correlated with aid but not with economic growth. Similarly, the investment equation can be specified as follows:

$$I_{it} = \alpha + \theta Y_{it} + \beta_1 x_{it} + \phi w_{it} + \psi z_{it} + u_{it} \tag{6}$$

where Y_{it}, x_{it}, w_{it} and z_{it} are as defined above. Equations (5) and (6) are nested in Equation (4) in the form of a system of equations. Thus, we can rewrite Equation (4) as follows:

$$Y_{it} = \alpha + \beta x_{it} + \phi w_{it} + \varphi I_{it} + \gamma_1 A_{it} + \gamma_2 A_{it}^2 + \eta_1 D_{it} + \eta_2 D_{it} * A_{it} + \mu_i + \zeta_t + e_{it} \tag{7}$$

where the γ's measure the effect of aid on growth, η's are the parameters of interest, measuring the growth effects of political business cycles and their interactions with aid, respectively, while

μ_i denote unobserved country-specific and time-invariant effects, and ζ_t is a vector of time dummies capturing universal time trends. The results in Section 5 are based on Equation (7) after controlling for the endogeneity of aid and investment using system-GMM estimators, both with internally generated and external instruments. We use ordinary least squares as our base model, and the sys-GMM as our preferred model. As indicated earlier, we ran Equation (7) with two separate measures of institutional quality: the ICRG measures of bureaucratic quality and democratic accountability. As a first approximation, we consider Equations (3) and (4) using ordinary least squares (OLS). However, this presumes, inter alia, that aid is exogenously determined, which cannot reasonably be expected, given that both aid and growth may be affected by the possibility of reverse causality. In order to address this endogeneity concern, we run Equation (7) using instrumental variable estimators, taking into account the various channels through which these variables are related.

There is a fairly wide range of estimation techniques that can be adopted for the analysis, including two stage least squares (2SLS), fixed-effects (FE) and system generalized method of moments (sys-GMM) estimators. The presence of country fixed-effects, μ_i, in Equation (7) may suggest that the preferred approach is the FE model, which allows to mitigate heterogeneity-induced bias and control for fixed-effects-related endogeneity. However, the FE model removes a considerable portion of the variation in the right-hand-side variables, which exacerbates measurement error. There is also evidence that 2SLS methods suffer from dynamic panel bias and their use can only be justified on asymptotic grounds (Baum et al. 2007).

Notwithstanding that finding reliable instruments is a daunting challenge, we resort to a purportedly robust instrumental variable that is commonplace in the literature, i.e. the lag of the dependent variables. Note however that the economic motivation behind the use of lagged values as instruments can be somehow questionable in the current context, as it relies on the premise that concurrent aid allocations affects growth but lagged aid does not. Accordingly, we exploit the aforementioned external instruments to identify the causal effect of aid.

The presence of lagged dependent variables and country fixed-effects poses a challenge that requires the use of more sophisticated econometric methods. The Arellano and Bond (1991) first-differenced GMM (dif-GMM) estimators circumvent the endogeneity problem by removing μ_i using orthogonal deviations and then deploying suitably lagged values of the independent and dependent variables as instruments. Nonetheless, the dif-GMM estimator suffers from large finite-sample biases and poor precision when the time series are persistent. The system GMM estimator (sys-GMM) developed by Blundell and Bond (1998), works around the weak instrument problem. Sys-GMM solves a system of level and difference equations. Lagged differences of the endogenous variables are used as instruments in the level equations, while lagged levels of the endogenous variables are used as instruments in the first differenced equations.

Sys-GMM significantly improves the accuracy of estimates by exploiting additional moment conditions that are informative even for persistent data. Hence, we opt for the sys-GMM estimator with external instruments as our preferred model, given that it addresses some of the finite-sample biases and imprecision inherent in the dif-GMM. We note; however, that the additional moment conditions of the sys-GMM estimator do not come without a cost. The instruments for the level equations are valid as long as they are orthogonal to the fixed effects. In addition, sys-GMM may suffer from the weak instrument problem, particularly when the time series is large and substantial unobserved heterogeneity exists (Hayakawa 2006; Bun and Windmeijer 2010). In order to mitigate this problem and thereby check for the sensitivity of the

results, we compute the models both with the internally generated set of instruments, and the external instruments. Another potential deficiency of the sys-GMM estimators is that the number of internal instruments grows quadratically as the number of time periods increases. Roodman (2009) cautions that instrument proliferation can over-fit endogenous variables, biasing coefficient estimates and weakening the Hansen test of the instruments' joint validity. Therefore, we reduce the instrument count by 'collapsing' instruments which is superior to simply restricting the lag ranges. With all these caveats in mind, we presented the sys-GMM results in the following section.

5   Results

We focus on the aid and political business cycles variables and their interactions in the growth equation in (7) as our outcomes of interest. Following propositions in theory (Bond 2002; Roodman 2009), we expect the parameters of the variables of interest in the sys-GMM equations presented in Tables 2a and 2b to be larger than the OLS regressions, and the results confirm our priors. The benchmark OLS equations are presented in Tables A1a and A1b in the Appendix, which are based on the ICRG indicators of bureaucratic quality and democratic accountability, respectively. The tables present various specifications, including equations with pre-election fiscal and monetary stimuli only, with interactions between pre-election stimuli and aid, and a full model with regional dummies. All models, with and without the inclusion of external instruments, confirm the most recent evidence from the third generation of studies that aid has a positive and significant impact on growth. As theory would predict, pre-electoral fiscal stimulus has a positive and significant effect on growth, whereas pre-electoral monetary stimulus has a negative effect on growth. Equally important is the finding that aid seems to reinforce the size effect of political business cycles in both positive and negative directions, depending on whether the opportunistic incumbent resorts to fiscal or monetary policy strategies to boost the economy. The OLS results are only indicative and cannot be relied upon because they are biased. We therefore present in Tables 2a and b our main results based on the sys-GMM estimators.

Table 2a, like 2b, contains a number of equations, all variants of Equation (7). Columns 1 and 2 show the model with and without external instruments, and excluding the pre-election stimuli, which we argue instigates political business cycles. As with the baseline results, and the most recent empirical evidence, the model confirms the non-linear relationship between aid and economic growth, with aid having a positive impact on growth but with diminishing returns. This should not be surprising given the fact that many African countries have limited absorptive capacity of aid. The interactions of aid and governance indicators, just like the governance indicators themselves, do not have statistically significant impact of growth. This shows that although the quality of bureaucracy and democratic accountability might have a supportive effect, they are not strong predictors of economic growth. Our results thus reject the proposition outlined earlier by Burnside and Dollar (1997), and then supported by Collier and Dollar (2002) that aid has a positive and significant impact on growth, conditional upon a good policy environment. In this particular regard, we arrive at the conclusion that there is no evidence to suggest that institutional quality is a sine qua non condition for the effectiveness of aid, a finding that is in line with the evidence reported in Dalgaard et al. (2004), Easterly et al. (2003), and Easterly (2003).

Columns 3 and 4 of Tables 2a and 2b include the pre-election monetary and fiscal stimuli but exclude the interaction terms of the joint effect of policy stimuli and aid. In the equations with external instruments the impact of aid is positive, and statistically significant, but becomes insignificant with the exclusive inclusion of internal instruments. The inclusion of both pre-

election fiscal and monetary stimuli in the model confirms our priors regarding the existence of political business cycle effects in the African region. The results show that the pre-election monetary stimulus has a negative and statistically significant impact on the economy whereas the pre-election fiscal stimulus has a positive and statistically significant impact. The negative impact of the monetary stimulus can be explained by the inflationary impact of an excess money supply in the economy. In contrast, the positive effect of the fiscal stimulus can be connected to the increased government expenditure prior to a presidential election that has an effect on the aggregate demand, and which may also conform to donor objectives. In fact, we note that 'pro-poor' government consumption expenditure on health, education and agriculture, three priority areas of donor agencies, absorbs a large proportion of total government consumption.[7]

Columns 5 and 6 introduce the interaction terms between pre-election stimuli and aid. Our findings indicate that the interactions have a significant impact on growth. The fiscal stimulus-aid interaction has a joint positive and statistically significant effect on growth, regardless of the indicator of institutional quality used, and whether or not the models include external instruments. On the other hand, the monetary stimulus-aid interaction terms have negative coefficients, although only statistically significant when using bureaucratic quality as proxy of institutional quality. An excess of money supply, together with aid, seems to lead to inflation, which in turn has an adverse effect on growth.

The results indicate that aid contributes to political business cycles whereby the opportunistic incumbent resort to macroeconomic policy stimuli to generate favourable conditions for re-election or continuation of political party dominance. Whether the incumbent government decides to align with donor objectives so it can be rewarded with donor aid, or execute discretionary fiscal policy independently or donor priorities, aid is found to contribute to political business cycles and ultimately growth. Our findings corroborate the political business cycle theory that aid can indeed stimulate such cycles, a result that is supported by the work of Alesina and Dollar (2000), Barro and Lee (2005), Dreher and Jensen (2007), Dreher et al. (2009), and more recently, Faye and Niehaus (2012), and contributes to the scant literature on the political economy of aid by providing evidence that political considerations, and not only altruistic motives, drive donors' aid agendas.

Our results also indicate that the joint effect of aid and pre-electoral stimuli varies across regions. Of particular interest is the negative and statistically significant coefficient of the Central Africa dummy in columns 7 and 8 of Table 2a and 2b. Compared to West African countries (the benchmark), Central African countries perform poorly after controlling for the effects of macroeconomic covariates, aid, the quality of institutions and monetary and fiscal pre-election stimuli. The results are not surprising. Despite vast natural resources and recent growth spells, the Central African region contributes the smallest share of Africa's entire economy, including Africa's agricultural sector. Countries in the region, including Chad and DRC, have been engaged in long-term conflicts that have devastated their economies. The region is also dominated by some of Africa's least accessible countries, with little or no infrastructure. It is therefore likely that the countries in this particular region significantly lack capacity to absorb aid funds. This results in lower than average multiplier effects of aid, hence the region performs worse than the benchmark.

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[7] Pro-poor expenditure represents on average, a 14.2 per cent of GDP, vis-à-vis a 16 per cent share of total government consumption.

Table 2a: Aid, political business cycles and growth

Sys-GMM equations with the ICRG indicator of bureaucratic quality. Dependent variable: GDP per capita growth

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Aid	0.587**	1.012**	0.357*	0.455	0.316	0.330	0.353*	0.152
	(0.260)	(0.457)	(0.145)	(0.435)	(0.189)	(0.407)	(0.182)	(0.435)
Aid squared	-0.006*	-0.012*	-0.005*	-0.006	-0.004	-0.004	-0.004	-0.001
	(0.003)	(0.007)	(0.003)	(0.006)	(0.003)	(0.007)	(0.003)	(0.008)
Investment	0.031	-0.123	0.145	0.108	0.169	0.165	0.148	0.232
	(0.233)	(0.292)	(0.190)	(0.219)	(0.158)	(0.215)	(0.132)	(0.238)
Inflation	-0.000***	-0.000***	-0.000***	-0.000***	-0.000***	-0.000***	-0.000***	-0.000***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Budget deficit	0.198*	0.288**	0.166**	0.183*	0.148**	0.152	0.153**	0.107
	(0.105)	(0.128)	(0.077)	(0.098)	(0.067)	(0.105)	(0.060)	(0.124)
Government consumption	-0.053	-0.060	-0.060	-0.057	-0.073	-0.073	-0.078	-0.111
	(0.049)	(0.057)	(0.057)	(0.060)	(0.053)	(0.058)	(0.062)	(0.099)
Financial depth	0.051	0.097	0.027	0.037	0.019	0.020	-0.007	-0.017
	(0.039)	(0.064)	(0.040)	(0.058)	(0.030)	(0.057)	(0.023)	(0.030)
Trade openness	0.016	0.036	0.001	0.006	-0.004	-0.002	0.003	-0.004
	(0.033)	(0.036)	(0.027)	(0.028)	(0.023)	(0.029)	(0.021)	(0.034)
Pre-election monetary stimulus			-2.125**	-2.097**	-0.514	-0.454	-0.519	-0.689
			(0.807)	(0.843)	(0.993)	(1.038)	(1.020)	(1.315)
Pre-election fiscal stimulus			1.186**	1.198*	-0.448	-0.450	-0.515	-0.495
			(0.501)	(0.591)	(0.753)	(0.749)	(0.766)	(0.698)
Bureaucratic quality	1.699	2.432**	0.645	0.866	0.898	0.931	0.853	0.771
	(1.333)	(1.077)	(1.002)	(1.144)	(0.766)	(0.917)	(0.702)	(1.135)
Bureaucratic quality x Aid	-0.170	-0.193*	-0.068	-0.078	-0.090	-0.093	-0.092	-0.099
	(0.137)	(0.107)	(0.089)	(0.092)	(0.066)	(0.069)	(0.057)	(0.097)
Pre-election fiscal stimulus x Aid					0.156***	0.152***	0.147***	0.154***
					(0.054)	(0.052)	(0.051)	(0.049)
Pre-election monetary stimulus x Aid					-0.171**	-0.172**	-0.167**	-0.164*
					(0.067)	(0.066)	(0.064)	(0.089)
North Africa							1.758	0.652
							(1.397)	(2.776)
Central Africa							-2.660**	-2.883**
							(1.225)	(1.394)
Southern Africa							0.495	0.411
							(0.795)	(1.024)
East Africa							0.803	1.131
							(1.071)	(1.547)
External instruments	YES	NO	YES	NO	YES	NO	YES	NO
Constant	-5.956**	-8.257**	-4.487**	-5.161	-4.252***	-4.394	-3.972**	-3.081
	(2.414)	(3.060)	(1.661)	(3.063)	(1.491)	(2.839)	(1.844)	(3.030)
Observations	432	433	397	397	397	397	397	397
Number of countries	30	31	30	30	30	30	30	30
Number of instruments	19	17	21	19	23	21	27	25
F Statistic	38.32***	171.6***	151.1***	75.51***	128.3***	79.18***	133.9***	235.4***
Hansen p-value	0.433	0.571	0.852	0.712	0.892	0.735	0.878	0.735
AR(1) p-value	0.00518	0.00560	0.00691	0.00627	0.00433	0.00455	0.00529	0.00838
AR(2) p-value	0.355	0.335	0.148	0.145	0.203	0.196	0.197	0.215

Notes: Standard errors in parentheses; *** $p<0.01$, ** $p<0.05$, * $p<0.1$.

Source: Authors' estimate.

Table 2b: Aid, political business cycles and growth

Sys-GMM equations with the ICRG indicator of democratic accountability. Dependent variable: GDP per capita growth

Variation	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Aid	0.418**	0.830*	0.375*	0.738	0.283	0.264	0.166	-0.152
	(0.177)	(0.184)	(0.186)	(0.758)	(0.238)	(0.721)	(0.451)	(0.576)
Aid squared	-0.007**	-0.003*	-0.006*	-0.011	-0.005	-0.005	-0.002	0.001
	(0.003)	(0.008)	(0.003)	(0.011)	(0.003)	(0.010)	(0.008)	(0.008)
Investment	0.113	0.090	0.133	0.063	0.184	0.190	0.148	0.253
	(0.121)	(0.139)	(0.135)	(0.233)	(0.153)	(0.198)	(0.142)	(0.243)
Inflation	-0.000***	-0.000***	-0.000***	-0.000***	-0.000***	-0.000***	-0.000***	-0.000***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Budget deficit	0.133**	0.164*	0.156**	0.191*	0.135*	0.141	0.123*	0.072
	(0.057)	(0.086)	(0.065)	(0.109)	(0.069)	(0.102)	(0.062)	(0.093)
Government consumption	-0.057	-0.075	-0.056	-0.060	-0.062	-0.063	-0.066	-0.070
	(0.037)	(0.054)	(0.045)	(0.061)	(0.046)	(0.046)	(0.087)	(0.093)
Financial depth	0.027	0.049	0.021	0.046	0.013	0.014	-0.028	-0.033
	(0.021)	(0.040)	(0.030)	(0.060)	(0.027)	(0.054)	(0.037)	(0.036)
Trade openness	0.007	0.015	0.003	0.017	-0.001	-0.003	0.008	-0.005
	(0.018)	(0.025)	(0.025)	(0.043)	(0.024)	(0.037)	(0.023)	(0.037)
Pre-election monetary stimulus			-2.018*	-1.416*	-0.982	-1.025	-0.629	-0.295
			(1.009)	(1.006)	(1.312)	(1.428)	(2.130)	(1.932)
Pre-election fiscal stimulus			1.080**	0.847*	-0.550	-0.536	-0.750	-0.908
			(0.486)	(0.700)	(0.785)	(0.759)	(0.938)	(0.921)
Democratic accountability	0.705	0.985	0.710	1.013	0.585	0.463	0.563	0.122
	(0.452)	(0.668)	(0.577)	(0.950)	(0.643)	(1.027)	(0.753)	(1.107)
Democratic accountability x Aid	-0.046	-0.100	-0.043	-0.086	-0.036	-0.027	-0.026	0.018
	(0.041)	(0.083)	(0.045)	(0.101)	(0.056)	(0.114)	(0.063)	(0.090)
Pre-election fiscal stimulus x Aid					0.154**	0.152**	0.158*	0.186*
					(0.066)	(0.072)	(0.007)	(0.098)
Pre-election monetary stimulus x Aid					-0.107	-0.102	-0.154	-0.241
					(0.130)	(0.225)	(0.269)	(0.242)
North Africa							1.779	0.482
							(1.934)	(2.854)
Central Africa							-3.794***	-3.857***
							(1.260)	(1.292)
Southern Africa							0.183	0.052
							(1.784)	(1.641)
East Africa							1.125	1.316
							(1.564)	(1.539)
External instruments	YES	NO	YES	NO	YES	NO	YES	NO
Constant	-5.022***	-7.317*	-5.034***	-7.056	-4.776**	-4.462	-3.267	-2.028
	(1.658)	(3.668)	(1.551)	(4.367)	(1.875)	(4.236)	(3.550)	(3.867)
Observations	417	418	382	382	382	382	382	382
Number of countries	30	31	30	30	30	30	30	30
Number of instruments	19	17	21	19	23	21	27	25
F Statistic	37.21***	67.59***	114.1***	69.02***	128.6***	120.6***	76.31***	104.3***
Hansen p-value	0.679	0.486	0.794	0.579	0.802	0.625	0.726	0.671
AR(1) p-value	0.00440	0.00235	0.00619	0.00385	0.00403	0.00542	0.00534	0.0121
AR(2) p-value	0.113	0.0832	0.0673	0.0564	0.0884	0.0890	0.108	0.130

Notes: Standard errors in parentheses; *** p<0.01, ** p<0.05, * p<0.1.

Source: Authors' estimation.

6   Conclusions

This paper has examined the role of aid in facilitating political business cycles and growth. Starting with a review of different strands of literature on aid, we find strong evidence that aid has a positive and significant impact on economic growth in the African region, after controlling for key macroeconomic determinants of growth and the quality of institutions.

Contrary to the findings reported in early studies (Burnside and Dollar 1997; Collier and Dollar 2002), we do not find evidence to support the proposition that institutional quality is a determinant of growth. This implies that even in contexts where countries exhibit poor bureaucratic and democratic institutions, aid can still make a positive contribution to growth. Furthermore, and independently of aid, countries with poor governance can experience growth, most probably through, among other things, foreign direct investment going to the exploitation of natural resources (Asiedu 2006). This may be true even in the case of natural resource rich countries exhibiting slower growth rates than non-rich countries in the longer term (Sachs and Warner 2001; Gylfason and Zoega 2006). The connection between aid, growth, institutions and natural resources is an important question that is not addressed in this paper, and which remains opened for future research inquires.

Our results confirm the proposition outlined in our model, that aid contributes to political business cycles that opportunistic incumbents exploit to increase the probability of re-election or political party dominance. Forbearance, and perhaps sometimes complicit by aid donors, aligned incumbent governments may retain degrees of freedom to instigate macroeconomic stimuli that ensures electoral victory with no fear of losing aid. Political considerations and not only altruistic motives seem thus to be behind donors agendas.

Appendix

Table A1a: Aid, political business cycles and growth.

OLS equations with the ICRG indicator of bureaucratic quality. Dependent: GDP per capita growth. Benchmark equations

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Aid	0.241***	0.255***	0.246***	0.256***	0.235***	0.246***	0.206***	0.212***
	(0.059)	(0.057)	(0.061)	(0.059)	(0.061)	(0.059)	(0.063)	(0.062)
Aid squared	-0.002**	-0.002***	-0.002**	-0.002***	-0.002**	-0.002***	-0.002*	-0.002**
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Investment	0.182***	0.179***	0.204***	0.199***	0.208***	0.202***	0.194***	0.184***
	(0.031)	(0.031)	(0.033)	(0.033)	(0.033)	(0.033)	(0.035)	(0.034)
Inflation	-0.000**	-0.000**	-0.000**	-0.000*	-0.000**	-0.000**	-0.000	-0.000
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Budget deficit	0.122***	0.114***	0.134***	0.120***	0.129***	0.114***	0.102**	0.090**
	(0.042)	(0.041)	(0.044)	(0.043)	(0.043)	(0.042)	(0.044)	(0.043)
Government consumption	-0.033	-0.050	-0.028	-0.056	-0.035	-0.065	-0.044	-0.083*
	(0.047)	(0.043)	(0.050)	(0.046)	(0.049)	(0.046)	(0.056)	(0.048)
Financial depth	0.027*	0.027**	0.013	0.021	0.011	0.020	-0.015	0.001
	(0.016)	(0.012)	(0.019)	(0.015)	(0.018)	(0.014)	(0.024)	(0.019)
Trade openness	0.001	-0.006	0.002	-0.008	0.003	-0.008	0.016	0.007
	(0.012)	(0.009)	(0.012)	(0.010)	(0.012)	(0.010)	(0.013)	(0.011)
Bureaucratic quality	0.811**	0.701**	0.825**	0.677*	0.909**	0.752**	0.795**	0.708*
	(0.360)	(0.344)	(0.370)	(0.354)	(0.367)	(0.352)	(0.380)	(0.365)
Bureaucratic quality x Aid	-0.076***	-0.072***	-0.083***	-0.074***	-0.089***	-0.080***	-0.090***	-0.083***
	(0.025)	(0.024)	(0.026)	(0.025)	(0.026)	(0.025)	(0.026)	(0.025)
Stage of development	0.022		0.019		0.020		0.015	
	(0.022)		(0.023)		(0.023)		(0.030)	
Scale of economy	0.086		0.339		0.375		0.506	
	(0.322)		(0.344)		(0.343)		(0.386)	
Pre-election monetary stimulus			-2.719***	-2.752***	-0.237	-0.309	-0.068	-0.105
			(0.981)	(0.980)	(1.312)	(1.310)	(1.308)	(1.302)
Pre-election fiscal stimulus			1.388**	1.399**	-0.756	-0.717	-0.938	-0.918
			(0.678)	(0.678)	(0.947)	(0.947)	(0.942)	(0.942)
Pre-election fiscal stimulus x Aid					0.192***	0.190***	0.193***	0.193***
					(0.060)	(0.060)	(0.060)	(0.060)
Pre-election monetary stimulus x Aid					-0.232***	-0.228***	-0.247***	-0.244***
					(0.085)	(0.085)	(0.085)	(0.084)
North Africa							0.911	0.853
							(0.934)	(0.918)
Central Africa							-3.146***	-2.828**
							(1.177)	(1.109)
Southern Africa							0.463	0.410
							(0.656)	(0.562)
East Africa							0.609	1.144*
							(0.777)	(0.672)
Constant	-7.116	-4.373***	-11.520*	-4.433***	-12.099**	-4.349***	-13.685**	-4.174***
	(5.799)	(1.004)	(6.153)	(1.038)	(6.113)	(1.028)	(6.912)	(1.085)
Observations	432	433	397	397	397	397	397	397
R-squared	0.202	0.200	0.226	0.222	0.248	0.244	0.270	0.266
F Statistic	8.838***	10.56***	7.971***	9.132***	7.841***	8.786***	6.937***	7.598***

Notes: Standard errors in parentheses, *** $p<0.01$, ** $p<0.05$, * $p<0.1$.

Source: Authors' estimation.

Table A1b: Aid, political business cycles and growth

OLS equations with the ICRG indicator of democratic accountability. Dependent: GDP per capita growth

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Aid	0.280***	0.304***	0.270***	0.292***	0.197**	0.228**	0.210**	0.214**
	(0.086)	(0.079)	(0.090)	(0.083)	(0.096)	(0.090)	(0.097)	(0.094)
Aid squared	-0.003***	-0.004***	-0.003***	-0.004***	-0.003**	-0.003***	-0.003**	-0.003**
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Investment	0.185***	0.184***	0.211***	0.207***	0.214***	0.211***	0.198***	0.188***
	(0.033)	(0.032)	(0.035)	(0.034)	(0.035)	(0.034)	(0.037)	(0.036)
Inflation	-0.000**	-0.000*	-0.000*	-0.000*	-0.000**	-0.000*	-0.000	-0.000
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Budget deficit	0.100**	0.096**	0.117**	0.106**	0.112**	0.102**	0.081*	0.070
	(0.044)	(0.043)	(0.046)	(0.045)	(0.046)	(0.044)	(0.046)	(0.045)
Government consumption	-0.028	-0.040	-0.015	-0.039	-0.013	-0.038	-0.011	-0.043
	(0.049)	(0.043)	(0.052)	(0.046)	(0.051)	(0.046)	(0.058)	(0.049)
Financial depth	0.029*	0.026**	0.015	0.018	0.016	0.017	-0.027	-0.016
	(0.016)	(0.013)	(0.019)	(0.016)	(0.019)	(0.015)	(0.026)	(0.022)
Trade openness	-0.003	-0.006	-0.002	-0.009	-0.004	-0.010	0.012	0.005
	(0.012)	(0.009)	(0.013)	(0.010)	(0.013)	(0.010)	(0.013)	(0.012)
Democratic accountability	0.656**	0.652**	0.630**	0.621**	0.560*	0.545*	0.635**	0.621*
	(0.255)	(0.254)	(0.280)	(0.279)	(0.286)	(0.285)	(0.318)	(0.317)
Democratic accountability x Aid	-0.038**	-0.041**	-0.036*	-0.037**	-0.023	-0.025	-0.031	-0.028
	(0.018)	(0.017)	(0.019)	(0.019)	(0.021)	(0.021)	(0.021)	(0.021)
Stage of development	0.017		0.017		0.023		0.016	
	(0.022)		(0.023)		(0.023)		(0.030)	
Scale of economy	-0.027		0.191		0.124		0.361	
	(0.331)		(0.360)		(0.358)		(0.397)	
Pre-election monetary stimulus			-2.466**	-2.475**	-0.642	-0.668	-0.447	-0.388
			(1.020)	(1.018)	(1.353)	(1.351)	(1.356)	(1.351)
Pre-election fiscal stimulus			1.305*	1.294*	-0.628	-0.609	-0.883	-0.909
			(0.691)	(0.690)	(0.967)	(0.965)	(0.965)	(0.964)
Pre-election fiscal stimulus x Aid					0.178***	0.175***	0.177***	0.179***
					(0.063)	(0.062)	(0.062)	(0.062)
Pre-election monetary stimulus x Aid					-0.182*	-0.180*	-0.185*	-0.193**
					(0.098)	(0.098)	(0.098)	(0.098)
North Africa							1.502	1.427
							(1.001)	(0.987)
Central Africa							-3.717***	-3.502***
							(1.192)	(1.138)
Southern Africa							0.180	0.066
							(0.710)	(0.649)
East Africa							0.431	0.859
							(0.801)	(0.689)
Constant	-5.867	-5.516***	-9.828	-5.587***	-8.461	-5.139***	-11.995*	-4.969***
	(5.880)	(1.112)	(6.321)	(1.186)	(6.288)	(1.198)	(7.140)	(1.217)
Observations	417	418	382	382	382	382	382	382
R-squared	0.200	0.200	0.222	0.219	0.239	0.236	0.266	0.263
F Statistic	8.440***	10.16***	7.465***	8.643***	7.146***	8.089***	6.526***	7.205***

Notes: Standard errors in parentheses, *** $p<0.01$, ** $p<0.05$, * $p<0.1$.

Source: Authors estimation.

Table A2a: Determinants of aid and investment

First Stage Least Square equations with the ICRG indicator of bureaucratic quality

Variables	Aid	Investment
Growth	0.101	0.412***
	(0.106)	(0.069)
Aid		0.145***
		(0.032)
Investment	0.319***	
	(0.071)	
Inflation	-0.000	-0.000
	(0.000)	(0.000)
Budget deficit	-0.289***	0.287***
	(0.093)	(0.062)
Government consumption	-0.165	0.071
	(0.105)	(0.071)
Financial depth	-0.062*	0.095***
	(0.032)	(0.021)
Trade openness	-0.012	0.096***
	(0.025)	(0.016)
Bureaucratic quality	-0.846	-0.046
	(0.553)	(0.374)
Stage of development	0.320***	-0.065**
	(0.046)	(0.032)
Scale of economy	-2.402***	-0.269
	(0.670)	(0.459)
Constant	39.220***	17.412**
	(12.035)	(8.183)
Observations	432	432
R-squared	0.333	0.421
F Statistic	21.02***	30.67***

Notes: Standard errors in parentheses; *** $p<0.01$, ** $p<0.05$, * $p<0.1$.

Source: Authors' estimation.

Table A2b: Determinants of aid and investment

First Stage Least Square equations with the ICRG indicator of democratic accountability

Variables	Aid	Investment
Growth	0.102	0.393***
	(0.109)	(0.070)
Aid		0.144***
		(0.032)
Investment	0.328***	
	(0.073)	
Inflation	-0.000	-0.000
	(0.000)	(0.000)
Budget deficit	-0.317***	0.270***
	(0.095)	(0.062)
Government consumption	-0.224**	0.052
	(0.105)	(0.070)
Financial depth	-0.065*	0.097***
	(0.033)	(0.022)
Trade openness	-0.017	0.094***
	(0.026)	(0.016)
Democratic accountability	0.248	0.516*
	(0.409)	(0.270)
Stage of development	0.342***	-0.045
	(0.044)	(0.031)
Scale of economy	-2.687***	-0.546
	(0.704)	(0.474)
Constant	42.362***	20.218**
	(12.464)	(8.308)
Observations	417	417
R-squared	0.338	0.428
F Statistic	20.74	30.36

Notes: Standard errors in parentheses, *** p<0.01, ** p<0.05, * p<0.1

Source: Authors' estimation.

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