ABSTRACT

Title of Document: AFRICA'S RECENT ECONOMIC REVIVAL: ROLE OF POLICIES, POLITICS AND INSTITUTIONS

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Sub-Saharan Africa (SSA) has made significant progress in democracy and economic performance since mid-1990s, but the continent remains by far the poorest region in the world. This dissertation consists of three chapters. Chapter 1 reviews SSA's history of democracy and economic policy since independence, including a literature review. It argues that while SSA's disappointing economic performance is, in part, due to its difficult geography, high incidence of disease, and colonial legacy, the main reason for Africa's woes until mid-1990s seem to be the failure of economic policies adopted by most SSA governments after independence. Chapter 2 examines SSA's recent economic growth acceleration, and finds that such acceleration is mainly due to better institutions and policies adopted by most SSA governments (as a result of more open and democratic societies), as well as lower incidence of armed conflicts, whereas the role of aid and terms of trade is relatively limited. Chapter 3 reviews the

impact on fiscal policy of competitive presidential elections in SSA during 1980-2005, and finds that (i) the magnitude of political budget cycles has declined over time as a result of stronger checks and balances and more experienced electorates; and (ii) that looser fiscal policies do not help reelect incumbents.

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Chapter 1: History of Electoral and Economic Policy in SSA

Introduction

Sub-Saharan Africa (SSA) remains by far the poorest region in the world. To a considerable extent this reflects its difficult geography, harsh climate, and high incidence of disease. At the same time, the colonial rule also held Africa back, leaving it at independence severely deprived of human and physical capital, as well as functioning institutions. The great push for the colonization of Africa that occurred in late-19th century, centuries after the colonization by Europeans of Asia and Western Hemisphere, meant that the colonial powers had better bureaucracies and thus less need to rely on indigenous institutions. As a result, the colonial state in SSA was a pure model of alien bureaucratic autocracy. The colonial administration was almost entirely in the hands of Europeans, and, at independence, most SSA countries could count only a handful of native college graduates.

Until the mid-1990s there was profound pessimism about SSA prospects. This reflected growing refugee problems, spectacular cases of state decay and collapse, and systematic violence (particularly Liberia, Somalia, and Rwanda), contributing to Africa's increasing economic marginalization. Because of low growth and rising income inequality since independence, SSA entered the 21st century with many of the world's poorest countries, and an average income per capita is lower than at the end of the 1960s (World Bank, 2000).

While SSA's colonial history and adverse geography were highly influential, its poor economic performance was mainly due to the choice of the political systems and

disastrous economic policies adopted by post-colonial governments. The dynamics of remaining behind are perverse. Low growth undermines middle class formation, education is neglected as a result of lack of public funds, capital flight becomes the norm, and the migration is primarily from those that are most educated draining human capital. This feeds into weaker governance, which feeds into lower growth, and so on. The cost of these failed policies eventually disrupts the political order. This is exactly what happened across SSA during the 1970s and late-1980s.

Since mid-1990s, however, economic growth in SSA has accelerated rapidly and now Africa's prospects look much brighter. This seems to reflect mainly the impact of economic reforms and dramatic political liberalization that accelerated in the early-1990s. The mutually reinforcing effects between political freedom and economic development are well established. Roll and Talbott (2003), for example, found that among the most significant factors in explaining variations in per capita national income at the global level during the 1990s were several different measures of freedom, including political rights, civil liberties, press freedom, and property rights. Easterly (2001) also found that Africa's higher government budget deficits, higher financial repression, and higher black market premium explain about half of the growth difference between East Asia and Africa over the past three decades. Within Africa, Eifert (2003) found that the difference in political openness between the most and least democratic African state is associated with a growth gap of over 4½ percentage points per year.

Against this background, this chapter provides a summary of history of electoral and economic policy in SSA, including a literature review. The discussion in the

remainder of this chapter focuses mainly on commonalities among SSA countries, so as to set the stage for the next two chapters. Before proceeding further, however, it is worth noting that there were significant differences among SSA countries in terms of their institutional structure at independence, mainly as a result of colonial legacy. As discussed in Young (1994), for example, countries under the British rule developed less uniformly in the superstructure of the colonial state, as a result of a less prefectoral model of regional administration. The French colonies were at the other extreme, with a more unified chain of command extending from the governor down to the village level through a single hierarchy, reflecting the potent legacy of the absolutist Bonapartist tradition on the state. Such differences shaped the institution at independence across SSA. The colonial legacy also affected economic policy in the post-independence period. Twelve former French colonies, for example, adopted the CFA franc in 1945, which constrained their fiscal policies in a way that was not the case in the rest of Africa. At a fundamental level, however, SSA countries were very similar to each other. In particular, as discussed above, because of the fact that the colonial state in SSA was a pure model of alien bureaucratic autocracy, and that most SSA countries could count only a handful of native college graduates at independence, the state forming capabilities in most SSA countries were quite limited, and their capitalist systems very embryonic.

Democracy and Elections in SSA: A Historical Perspective

At the risk of painting developments across SSA with a broad brush, the history of democratic movements and elections in SSA can be grouped in three waves: (i) the first wave started to gain steam gradually since the end of World War II and

culminated with independence movements in the late 1950s, resulting in independence from colonial powers in the 1960s for most SSA countries, and in the 1970s for the remainder; (ii) the second wave was in the period between independence and late-1980s; and (iii) the third wave coincided with the global move towards democracy in late-1980s. The first and third waves were more or less synchronized across SSA, whereas the second wage resulted in intermittent democratic systems in particular countries that were quickly replaced extra-legally by civilian "strong men" or military rulers.

While these three waves characterize the experience with democracy in the vast majority of SSA countries, there are two notable exceptions—Botswana and Mauritious that have been continuously democratic since gaining independence. Both countries had founding leaders that, unlike in the other SSA countries, agreed to conduct their political competition in the post-independence period within the boundaries of democratic rule, ensured broad representation (a key factor given SSA ethnical diversity), and enacted policies that were supportive of economic growth. These favorable outcomes provided support for the political system, creating in turn a virtuous cycle (see section on the history of economic policies in SSA).

First Wave: End of World War II to Independence

International hostility to colonial rule and anticolonial movements within SSA intensified after World War II. As a result, colonial powers were forced to start opening the formerly exclusionary institutions of rule to indigenous participation. The combination of powerful international and domestic forces converged to create the

initial African wave—leading to independence of SSA from colonial powers starting in the mid-1950s and accelerating in the 1960s. Of the 47 SSA countries listed in Table I.1, 37 of them had become independent by 1970, and the independence movement continued in earnest during the 1970s, with Zimbabwe in 1980 being the last country to gain independence from colonial powers in SSA. Multiparty elections were held soon after independence in most countries (33 out of 47 countries). In the other countries, which included a few cases where independence was won by armed struggle rather than negotiations (Angola, Cape Verde, Guinea-Bissau, Mozambique, and Sao Tome and Principe), no multiparty elections were held until the third democratization wave (see below).

Second wave: Independence to late-1980s/early-1990s

The electoral democracy in SSA that followed the first wave was short lived. The doctrine of the mass single party as the vanguard of African progress soon took root, embraced by the most charismatic leaders of the independence generation (Joseph 1999). These leaders argued that competitive democracy was a luxury that poor countries could not afford, and concentration of authority would facilitate the needed economic leapfrog through a state-led development model.

During this period, the political systems in Africa became overwhelmingly authoritarian. The political order that emerged was, in most cases, that of a dominant party, which was able to integrate, co-opt, or eliminate other political parties, and ultimately install a single-party rule. In these one-party states, political power became highly centralized around the President (de Walle 2001). Within a few years

following independence, the armies of Benin, Madagascar, Sudan, Togo, and Congo (Brazzaville) overthrew their civilian leaders. This trend accelerated during the 1960s and 1970s. By 1970, for example, only nine SSA countries – or only 25 percent of those that had achieved political independence – retained competitive systems (Bates in Collier et. al., 2008). Furthermore, by mid-1980s, about half of African regimes were military (16) or quasi military (7), another third (15) had one party states or hereditary monarchies, and only 5 countries having multiparty systems (Sandbrook 1985). Even in these latter cases, the tolerance of the party in power to opposition was untested.

As a result, elections in Africa soon after independence were depicted as empty and largely symbolic exercises designed to legitimate office holders. Between independence and 1989 there were 106 presidential and 185 direct parliamentary elections in 47 SSA countries. As noted in Bratton and de Walle (1997), in the presidential elections the winner got on average 92 percent of the votes, and the opposition candidate got more than a quarter of the votes in only 10 cases. The margin of victory was smaller, though not by much, in parliamentary elections – with the winning party getting on average 83 percent of the vote. As discussed above, only Botswana and Mauritious were exceptions, where reasonably free and fair elections were held on a regular basis, although, even in these two countries, there has not yet been any alternation of power.

Table I.1. History of Democratic Elections in Sub-Saharan Africa

	Phase One		Phase Two	Phase Three
	Year of Indepedence	Multi-Party Election?		
Angola	1975	No	One party state 1975-91.	Multiparty presidential election in 1992, but no election since.
Benin	1960	Yes	Military regime or one party state 1965-90.	Return to democracy in 1991, with multiparty elections.
Botswana	1966	Yes	Continously democratic.	Continously democratic.
Burkina Faso	1960	No	Military regime or one party state in 1960-91, with brief democracy 1978-80.	Multiparty elections since 1991.
Burundi	1962	Yes	Military regime or one party state 1966-92.	Multiparty elections since 1992, with temporary military rule in 1996.
Cameroon	1960	Yes	One party state 1966-90.	Multiparty elections since 1991.
Cape Verde	1975	No	One party state 1975-90.	Multiparty elections since 1991.
Central African Republic	1960	No	Military regime or one party state 1962-91, expect for a brief period in 1981.	Multiparty elections since 1992, with brief military rule 2003-05.
Chad	1960	No	Military regime or one party state 1962-93, with democratic transition in 1994.	Multiparty elections since 1997.
Comoros	1975	No	Multiparty elections in 1978, but one party state 1982-90.	Multiparty elections since 1990, with military regime 1999-2002.
Congo, Democratic Republic of	1960	Yes	Military regime or one party state 1966-90.	Democratic transition 1991-2005. Multiparty elections in 2006.
Congo, Republic of	1960	Yes	Military regime or one party state 1963-90.	Multiparty elections since 1991, with civil war 1997-2002.
Côte d'Ivoire	1960	No	One party state 1960-90.	Multiparty elections since 1991, with brief military rule in 1999-2000.
Equatorial Guinea	1968	Yes	Military regime or one party state 1970-93.	Multiparty elections since 1993.
Eritrea	1993	No	N/A.	One party state since independence from Ethiopia in 1993.
Ethiopia	1941	No	Traditional monarchy, military regime or one party state 1941-94.	Multiparty elections since 1994.
Gabon	1960	Yes	One party state 1968-90, with democratic transition 1991-93..	Multiparty elections since 1993.
The Gambia	1965	Yes	Democracy 1965-94.	Multiparty elections since 1996, following military rule 1994-95.
Ghana	1957	Yes	Military regime or one party state 1964-92, with brief democracy 1979-81.	Multiparty elections since 1992.
Guinea	1958	Yes	Military regime or one party state 1958-93.	Multiparty elections since 1993.
Guinea-Bissau	1974	No	Military regime or one party state 1974-94.	Multiparty elections since 1994.
Kenya	1963	Yes	One party state 1969-92.	Multiparty elections since 1992.
Lesotho	1966	Yes	Military regime or one party state 1970-93.	Multiparty elections since 1993.
Liberia	1847	Yes	One party state 1878-1990.	Multiparty elections in 1985 and since 1997.
Madagaskar	1960	Yes	Military regime or one party state 1972-92.	Multiparty elections since 1992.
Malawi	1964	No	One party state 1964-94.	Multiparty elections since 1994.
Mali	1960	No	One party state 1960-92.	Multiparty elections since 1992.
Mauritania	1960	Yes	Military regime or one party state 1961-92.	Multiparty elections since 1992.
Mauritius	1968	Yes	Continously democratic.	Continously democratic.
Mozambique	1975	No	One party state 1975-94.	Multiparty elections since 1994.
Namibia	1990	Yes	N/A.	Continously democratic.
Niger	1960	Yes	Military regime or one party state 1961-93.	Multiparty elections since 1993.
Nigeria	1960	Yes	Military regime 1966-99, except for democracy rule in 1979-83.	Multiparty elections since 1999.
Rwanda	1962	Yes	Military regime of one party state 1965-2003.	Multiparty elections since 2003.
Sao Tome and Principe	1975	No	One party state 1975-91.	Multiparty elections since 1991.
Senegal	1960	Yes	One party state in 1966-78, and multiparty elections otherwise.	Multiparty elections since 1978.
Seychelles	1976	Yes	One party state 1977-93.	Multiparty elections since 1993.
Sierra Leone	1961	Yes	Military regime 1967-68, and one party state 1978-91, democracy otherwise.	Military regime 1992-98, with multiparty elections since 1998.
Somalia	1960	Yes	Military regime or one party state since 1969.	No government 1991-2000, and transitional government since 2001.
South Africa	1910	Yes	Democracy resricted to whites only until 1994.	Multiparty elections without restrictions since 1994.
Sudan	1956	Yes	Military regime or one party state, except democracy 1965-69 and 1986-89.	Military regime 1989-93 and one party state 1993-99.
Swaiziland	1968	Yes	Traditional monarchy since 1973.	Traditional monarchy since 1973.
Tanzania	1961	Yes	One party state 1962-95.	Multiparty elections since 1995.
Togo	1960	Yes	Military regime or one party state 1963-93.	Multiparty elections since 1993.
Uganda	1962	Yes	Military regime or one party state 1969-2006, except limited democracy 1980-85.	Multiparty elections since 2006.
Zambia	1964	Yes	One party state 1972-91.	Multiparty elections since 1991.
Zimbabwe	1980	Yes	Restricted democracy since 1987.	Restricted democracy since 1987.

Source:

While outside Botswana and Mauritious some SSA countries allowed limited competition by holding relatively competitive primaries within the ruling party—such as in Kenya, Tanzania, and Zambia in the 1970s, and Cameroon, Cote d'Ivoire and Togo in the 1980s—in essence such elections did not threaten the monopoly on power of the strong men at the top. Even in the few cases that opposition won in SSA elections during this period, the Parliament was dissolved extra-legally within a couple of years (Bratton and de Walle 1997).

There were some early successes in the immediate post-independence period, including limited economic growth, increased urbanization, emergence of a national middle class, and above all, development of sense of nationhood (Boadi 2004). However, the perils of "development dictatorships" in single-party states were soon made clear, as the ensuing autocracy that took place in many SSA created some of the most extreme cases of tyrants – Idi Amin in Uganda, Jean-Bedel Bokassa in the Central African Republic, and Macias Nguema in Equatorial Guinea. As a result of the abuses that followed the creation of this "monopoly state" and, more importantly, the economic failures that these systems produced, the ideological formulas that justified the exclusion and marginalization of the subject population started to gradually lose force toward late-1970s and early-1980s. While there were several instances of restored democratic rule in SSA, during this period, as noted earlier those proved ephemeral until the worldwide wave of democratic reforms of the late-1990s. In Ghana, for example, there was democratic rule in 1969-71 and also in 1979-81. Nigeria also in 1979 was returned to democratic rule, but the colossal scale of venality and election rigging led to a return to military rule in 1983.

The donors pushed for economic reforms in SSA starting in the early-1980s, conditioning their external assistance on such reforms. However, these reforms failed to bring a quick

economic recovery in Africa. As a result, there were growing voices within the continent that political reform was a necessary concomitant of economic liberalization. There was a growing recognition that without a re-moralization of public institutions, and minimal accountability and transparency, economic liberalization was destined to fail and could thus not be sustained.

Third wave: Late-1980s to Late-1990s

The early 1990s saw a wave of competitive multiparty elections in SSA, marking a transition from an extended period of authoritarian rule to a new era of fledging democratic government. The economic reforms that were introduced during the 1980s to address dismal economic performance and worsening economic conditions were not successful in most cases (see section on the history of economic policies in SSA for a description), and, as a result, by the late 1980s many regimes in Africa were undergoing a legitimacy crisis. Democratic movements that hit Africa in the early 1990s started as economic protests against the incumbent governments. Although not specifically political when they began, these protests quickly escalated into demands for regime change (de Walle, 2001).

These democratic movements were, in part, supported by growing international recognition on the need for a new development paradigm. In the post-Cold War era, simply professing ideological preferences was no longer enough to earn financial support from donors. In order to obtain development assistance, SSA countries had to show willingness to observe human rights, hold genuine competitive elections, and start practicing efficient and honest government.

However, while the international conjecture was clearly important for democratic reforms, they seem to have played only a supportive role. Bratton and de Walle (1997), for example, argue that while international aid donors became major players in the game of regime transition after 1989, particularly when they began to wield the carrots and sticks of political conditionality, they helped to create the conditions under which political change became possible, but did not in themselves trigger or sustain regime transitions or determine the directions the transitions took. Instead, they argue, the onset and subsequent trajectory of regime transition depended on the constellation of domestic political forces, and reflected the home grown discontent from economic failure and political oppression. Bates (in Collier et. al., 2008) also finds support for the primary role of domestic factors in the path toward political reform. He finds, for example, that the greater the percent of adult population who were literate, and the higher the average income, the more likely that the authoritarian regime would fall.

Democratic reforms in SSA during this period were dramatic and swift. As shown in Table I.2, while during the period 1985-89, competitive multiparty elections were held only in nine SSA countries, the number of African countries holding competitive elections increased to 38 during the period 1989-94 (more than ¾ of SSA countries). Of these, 29 were founding elections, and by 1994 not a single de-jure one-party state remained in Africa (Bratton and de Walle, 1997). Benin's multiparty elections in 1991 were the first instance in mainland Africa when a national leader was peacefully supplanted as a consequence of the expressed will of the people. This was followed by another 13 similar leadership transitions in the first five years of democratic reforms in Africa (i.e., between 1990 and 1994). As a result, the share of peaceful transitions in SSA increased to 60 percent of cases of incumbent exits during the

period 1990-94, compared to about 40 percent during the 1980s, and less than 20 percent during the 1970s (Collier, 2008).

However, despite the leadership alternation in some SSA countries in the first five years as noted above (14), an equal number of long-standing incumbent leaders in other countries (15) managed to survive multi-party elections. Of the 15 incumbents who retained office, 12 did so in elections that fell short of internationally accepted standards (Bratton and de Walle 1997). Moreover, in most cases incumbent rulers openly manipulated constitutional and electoral rules to trip up their competitors. As a result, the quality of elections in Africa in the early years of this period varied, and in most countries the prime purpose of elections remained the legitimation of whatever regime currently holds political power (Joseph 1999). In addition, using privileged access to government revenue, rulers bought votes. In Kenya, for example, Moi's administration increased money supply by 35 percent in 1992 to spur growth in the months before general elections (see Chapter 3 for an analysis on political budget cycles in SSA). Even in the cases where the leader was changed, in most cases they came from the same social and political class as before, including some who had served in the colonial regime.

In addition, elections alone do not create functioning democracies, and, many African states that moved to free elections, did not immediately fortify the basic democratic tenets. Several factors stood in the way, including the incongruence between Western electoral systems and Africa's ethnic politics (World Bank, 2000). Since a large fraction of the population in many SSA countries defines itself largely in terms of ethnic kinship, open elections politicized the significant regional, ethnic, religious and racial divisions, adding to disintegrative pressures on fragile states (Joseph 1999).

Such divisions escalated to widespread violence in some cases, such as in Rwanda, Burundi, and Congo-Brazzaville (the civil strife in Somalia and Sudan are not related to democratic movements). These instances underscore the need for acknowledging, rather than ignoring cultural pluralism in the SSA societies, and that competitive elections are necessary but not sufficient for democracy to function (Collier, 2007).

Many scholars were critical of these early developments. Bratton (1998), for example, argued that Africa had returned to neopatrimonial politics, whereas others saw a continuation of disorder and destructive politics (Chabal and Daloz, 1999), no change at all (Akinrinade, 1998), political closure (Joseph, 1999), semi-authoritarianism (Carothers, 1997), or elections without democracy (de Walle, 2001).

Yet, even with considerable flaws in the early African multiparty elections of this period, in most cases civil society breathed easier after partial liberalization, and the political climate became increasingly less fear-ridden and less closed than when it first started in the late 1980s. The changes since early 1990s made Africa significantly less autocratic, even if it remained largely neopatrimonial. The unprecedented surge in civil society, including in the media, was a key development in the current African political renewal. Relaxation of media censorship paved the way for the emergence of independent newspapers, radio, and television, which were widely credited for the relatively honest elections in many countries (e.g., Senegal and Ghana – Boadi 2004). Also, as the scheduling elections became more regular, voting became increasingly meaningful (evidenced by greater voter participation in elections), and appeared to have a greater impact on the selection of representatives for Parliament (Boadi 2004).

As of 2005, there had been founding elections in all SSA countries except Eritrea, Swaziland (which is a kingdom), and Zimbabwe (see Chapter 3). Multiparty elections had led to 34 alternations of political leaders, although no alternation of the leader had taken place in 15 SSA countries, out of 37 SSA countries that elect the leader in direct popular elections. In addition, while in over two third of SSA countries the democracy is slowly moving forward, in about a third there has been a regression in democratic qualities. For example, Niger has had numerous regime breakdowns and struggled through multiple military coups, Zimbabwe has not have a free and fair multiparty presidential election yet, and the Republic Democratic of Congo has also had challenges to maintain political stability.

With the passage of time, however, democracy in SSA is consolidating, and the magnitude of political budget cycles has also declined significantly in recent years (see Chapter 3). Reviewing democratic qualities of elections in Africa during 1989-2003, Lindberg (2006) finds that contrary to a number of earlier studies, more than half of all elections in Africa during this period were free and fair, and the overall trend is stability or even slightly positive. In particular, there is statistically significant improvement in the legitimacy of elections. Lindberg argues that the elections in Africa have had a self-reinforcing effect, i.e., once regimes hold their second elections, they tend to survive, and that the regime breakdown almost always occurs after the first election. At the same time, however, he also finds no relationship between the quality of elections and the survival of electoral regimes, recognizing that the continent is this in an early phase of a long democratization process.

Table I.2. Presidential Elections Since Founding Multi-Party Elections in Sub-Saharan Africa

Country	Founding Elections		Subsequent Elections		Total Leadership Alternations
	Date of Election	Leadership Alternation?	Number of Times	Leadership Alternation?	
Angola	1992	No	0	No	0
Benin	1991	Yes	3	Yes (2)	3
Botswana 1/	None	None	None	None	None
Burkina Faso	1991	No	2	No	0
Burundi	1993	Yes	0	No	1
Cameroon	1992	No	2	No	0
Cape Verde	1991	Yes	2	Yes (1)	2
Central African Republic	1993	Yes	2	No	1
Chad	1996	No	2	No	0
Comoros	1990	No	3	Yes (1)	1
Congo, Democratic Republic of	2006	No	0	No	0
Congo, Republic of	1992	Yes	1	No	1
Côte d'Ivoire	1990	No	2	Yes (1)	1
Equatorial Guinea	1996	No	1	No	0
Eritrea	None	None	None	None	None
Ethiopia 1/	None	None	None	None	None
Gabon	1993	No	2	No	0
The Gambia	1982	No	4	No	0
Ghana	1992	No	3	Yes (1)	1
Guinea	1993	No	2	No	0
Guinea-Bissau	1994	No	2	Yes (2)	2
Kenya	1992	No	2	Yes (1)	1
Lesotho	None	None	None	None	None
Liberia	1997	Yes	1	Yes (1)	2
Madagascar	1992	Yes	2	Yes (2)	3
Malawi	1994	Yes	2	No	1
Mali	1992	Yes	2	Yes (1)	2
Mauritania	1992	Yes	2	No	1
Mauritius 1/	None	None	None	None	None
Mozambique	1994	No	2	No	0
Namibia	1994	No	2	No	0
Niger	1993	Yes	3	Yes (2)	3
Nigeria	1999	Yes	1	No	1
Rwanda	2003	No	0	No	0
Sao Tome and Principe	1991	Yes	2	No	1
Senegal	1978	No	4	Yes (1)	1
Seychelles	1993	No	2	No	3
Sierra Leone	1996	Yes	1	No	1
Somalia	None	None	None	None	None
South Africa	None	None	None	None	None
Sudan	None	None	None	None	None
Swaziland	None	None	None	None	None
Tanzania	1995	No	2	No	0
Togo	1993	No	3	No	0
Uganda	1996	No	2	No	0
Zambia	1991	Yes	2	No	1
Zimbabwe	None	None	None	None	None

Source:

1/ Botswana and Mauritius have had democratic parliamentary elections since independence, but do not elect the president directly. Ethiopia also does not have presidential elections, but has had founding parliamentary elections since 1994.

Economic Policy Management in SSA: A Historical Perspective

Economic policy following independence can be divided into three distinct phases: the first phase during 1960s and 1970s; the second phase during 1980s, and the third phase after the end of the end of the Cold War in 1989.

The First Phase: Independence to End-1970s

Foremost among the objectives of the SSA governments in the period immediately after independence, was to shift the basis of their economies away from the production of agricultural commodities, and toward the production of manufactured goods. Convinced that this strategy would leapfrog their economic development, governments in Africa intervened in agricultural markets to extract resources they needed to build a "modern" economy.

Collier et.al. (2008) stress that SSA countries at the dawn of independence were attracted by socialist and communist ideologies. As a result, many of them adopted strategies of development that relied on ownership of productive industries by the state, and an industrialization strategy focused on import substitution through high trade barriers, including an excessive taxation of exports. They note that there was a wide spectrum of the strength of state controls on the economy across SSA countries. On the one extreme, there were "hard controls" regimes, such as those of Congo Brazzaville, or Tanzania during 1973-85, where the banks and other main sectors of the economy were nationalized, and virtually all private economic activity was subject to strict regulation, including extensive price controls and investment licensing. On the other extreme, there were "soft controls" regimes, such as Zambia 1963-91, where substantial parts of the economy, including banks, remained private and price controls were less pervasive.

As documented by Bates (1981), the policies adopted by SSA countries after independence included in particular:

High taxes on the agricultural sector. Since the political base of governments was urban, agriculture was heavily taxed. The main tool to effect the needed transfer of resources away from agriculture and toward industry were state marketing boards, which were sanctioned monopsonies inherited from the colonial period for the purchase and export of agricultural goods. The original goal of marketing boards was to stabilize prices received by farmers in view of the large volatility of world market prices. However, the prices paid to farmers were almost always significantly below world market levels. Eventually, in most SSA countries these Boards were expected to have surpluses and lend them to the government, whose spending was concentrated in the urban areas and the manufacturing sector.

Direct government involvement in agricultural production. These policies included subsidies for agricultural inputs and government-sponsored farming projects. Together with below-market agricultural prices, these policies ended up distorting incentives and benefited only a few privileged large farmers.

Significantly overvalued exchange rates. This resulted in lower import prices, mainly for inputs to the manufacturing sector and consumptions goods for the urban areas, as other imports were discouraged by high imports tariffs (see below). The supply of foreign exchange was rationed through administrative quantitative controls, and channeled to those close to the regime, creating a political clientele. The manipulation of the exchange rate adversely affected upon the earnings of those producing cash crops for export.

High protective import tariffs for finished products. Initially, this policy was imposed mainly to conserve foreign exchange which, as discussed above, was underpriced and thus faced excessive demand. Over time, however, high tariffs became an instrument for economic protection, by sheltering domestic industries from competition. Effective protection was actually higher than suggested by nominal tariff rates, since inputs had significantly lower tariffs (and even exempted in many cases) compared to finished products.

Financial repression to support industrialization. To encourage investment in the industrial sector, many SSA governments imposed low interest rates, either by constraining the lending practices of private banks or by creating state banks to offer low-cost loans to favored industrial sectors. The result was financial repression.

Subsidies to the manufacturing sector. In many SSA countries the government invested directly in manufacturing plants. Often these firms operated at a loss, and survived only through continued government subsidies to cover their losses.

The development strategy based on import substitution was not unique to Africa. Similar strategies had been adopted in many Latin American countries since the 1930s, and continued in various forms and degrees until the late 1980s. In addition, initially the growth model adopted by SSA governments seemed to be working. From independence until the early 1970s, for example, average growth in Africa was more rapid than in the first half of the century. During this period, while there were significant differences in economic performance across SSA, the average growth in SSA and its composition were indistinguishable from the geographically very different circumstances of south Asia (Collins and Bosworth, 1996). However, over time the results of the disastrous economic policies

discussed above started to take a toll across SSA, as benefits were conferred to an organized small group connected to the regime, and costs were spread over the masses of the unorganized. Contrary to the intended objective, rather than supporting development, these policies eventually undermined the agriculture sector, the most important sector in SSA's economies. Faced with lower prices for their products and lack of financing, farmers produced less and less, leading to lower export earnings for SSA economies. This deprived the state from investing in industry.

In addition, the selective subsidies for farmers' inputs and overvalued exchange rates established powerful private lobbies that were more interested in rent-seeking behavior rather than engaging in productive economic activities. Furthermore, the high protection offered to domestic industries resulted in SSA industries being dominated by monopolies, which in many cases were owned by governments. Under such sheltered conditions, inefficient firms survived, and consumers ended up paying higher prices. For most SSA countries terms of trade also turned sharply negative during mid-1970s/early-1980s. With price pressures building up, temptation increased for governments to regulate even further, adversely affecting economic activity.

As growth faltered and contributed to lower revenues, governments cut politically popular programs. The basis of equilibrium eroded, leading to economic and political crisis during the course of the 1970s (Bates, 1981). In Ghana, for example, per capita income in 1983 was below that at independence in 1957 (Easterly, 2001). This was the case in most other SSA countries as well. When the development strategy failed, military intervention reproduced in many SSA countries the colonial state legacy of autocracy in a different form (Young, 1994).

Botswana and Mauritious are the only two obvious exemptions to the above picture of economic mismanagement and counterproductive economic policies. At the dawn of independence, however, both countries did not look unusual in the African context. Mauritious, for example, continued to be heavily dependent on a single primary commodity export for many years after independence, and Botswana relied mainly on live animal exports for its foreign exchange earnings. Botswana is also predominantly tropical and landlocked, which many economists see as a disadvantage (see for example Bloom and Sachs, 1998).

The difference between these two countries and the rest of SSA was good policies. Their basic system of law and contract worked reasonably well, and state predation was quite limited. Although there were government marketing boards in both countries which, as discussed above, was used by most African governments to extract resources from the rural sector, this was not the case in Botswana and Mauritius. Moreover both governments invested heavily in infrastructure, education and health. Fiscal policy has also been prudent in the extreme and the exchange rate remained closely tied to fundamentals. Finally, both countries never established large state-owned industries as was the case in most other SSA countries.[1]

The Second Phase: Late-1970s to Late-1980s

As the economy faltered across the continent, almost all SSA countries were engaged in some kind of economic reform program with funding from the West during the 1980s. These programs attempted to implement stabilization and structural adjustment programs that sought, respectively, to return to macroeconomic equilibrium in the short term, and promote

[1] See Acemoglu, Johnson and Robinson (2001) for a discussion on economic policies in Botswana.

more rapid sustainable economic growth in the long term. The donors encouraged SSA states to undertake these reforms in exchange for substantial financial support. As discussed in de Walle (2001), between 1980 and 1989, for example, some 36 SSA countries contracted 241 different loans from the IMF and the World Bank to finance stabilization and adjustment operations.

However, there was a very slow rate of initial progress during this period, as the reforms supported by the IFIs programs were very rarely fully implemented, and also because progress in macroeconomic management remained vulnerable to reversals. As discussed in Easterly (2001) economic distortions remained significant in Africa. This included very high black market exchange rate premiums, large budget deficits (net of aid), unprofitable state-owned enterprises that continued to get large government subsidies, high inflation, and negative real interest rates. High black market premiums acted as taxes on exporters, high budget deficits were in most cases financed by money printing (in turn contributing to high inflation), low real interest rates caused financial repression (by discouraging financial savings in banks), trade protectionism (with the objective of supporting domestic industrialization through import substitution) caused inefficient allocation of resources, and excessive red tape and inadequate public services stifled private sector activity.

In Uganda, for example, continued lax monetary and fiscal policies kept the inflation rate at over 50 percent as late as 1992. In Kenya also, the fiscal deficit was as high as 12 percent of GDP as recently as 1993. The main reason was that during this period the African state elites sought to adapt to changing circumstances without losing their hold on the state. The currency devaluation or trade liberalization required under the IFI-supported reforms as conditions for financing, while helping improve incentives for savings and production, also

deprived the powerful constituencies that had been the main beneficiaries of overvalued exchange rates, trade protection and ad-hoc subsidies under the old system.

Progress in structural reforms also proceeded very slowly. While the 1980s witnessed the formal abolition of many of the public agencies that states had once created to monopolize food marketing and keep consumer prices down, in effect governments retained a central regulatory role, if not a monopoly, on the marketing of imported foods such as rice and wheat. Trade protection also remained very high. In the early 1990s, for example, SSA average tariff rates were about 25 percent, or about 4 times the non-OECD average, and foreign exchange premiums in the black market remained large in many SSA countries through the early 1990s.

Some argue that the significant increase in aid during the 1980s, combined with ineffective policy conditionality, were a main reason for half-hearted reforms across Africa. Such critics stress that aid lessened the imperative to undertake reforms, and thus the incentives African governments had to implement policy reforms. In other words, aid scaling up effectively made policy reforms less likely, not more (de Walle, 2001, and Collier, 1997).

Since growth performance deteriorated in most SSA countries during the 1980s, and the adjustment regime also produced a massive increase in external debt, the strong support for a powerful state to deal with market failures was fading, and it became increasingly clear that government failure was an equally pervasive and serious problem in Africa (Wade, 1990). Based on work in Africa and other regions, consensus started to form that basic macroeconomic stability was a prerequisite for growth (Rodrik, 1996). At the same time, while it was agreed that a low inflation environment was desirable, or that African

governments need to bring their fiscal deficits down, there was disagreement on the speed with which this was done and the mix of policies needed to achieve these objectives.

The Third Phase: End of the Cold War (1989) Onward

With the end of the Cold War, as discussed above, the focus and magnitude of financial support from bilateral and multilateral donors to Africa changed drastically. However, while affected by the global surge towards democracy at the end of the Cold War in the late 1980s, the democratic response in Africa reflected a cathartic reaction to an alienating state (Young, 1994). Bratton and de Walle (1997) also argue that while international aid donors became major players in the game of regime transition after 1989, particularly when they began to wield the carrots and sticks of political conditionality, they only helped to create the conditions under which political change became possible, but did not in themselves trigger or sustain regime transitions or determine the directions the transitions took. Instead, they argue, the onset and subsequent trajectory of regime transition depended on the constellation of domestic political forces.

The change in the development paradigm in Africa in the post Cold War period is clear. The amount of government spending to GDP in SSA, which had increased gradually from an average of about 15 percent of GDP in 1970 to nearly 30 percent in 1990, declined to just over 20 percent in the mid-1990s (Ndulu in Collier et. al., 2008). In addition, substantial progress was gradually made in implementing basic stabilization policies. In particular, exchange rate policies underwent the most dramatic improvements. While between 1975 and 1984 eighteen of the regional economies in the CFA franc zone had 50 percent black market premium, by mid-1990s black market premiums have disappeared in nearly all countries

(except those with severe governance problems, such as Angola, Liberia, Nigeria, and Congo/Zaire). More generally, the liberalization of the exchange rate started in most SSA countries in mid-1980s and was complete by early 1990s in most cases. In addition, fiscal deficits fell from 10 percent in 1970s and 1980s to 4½ percent in 1997 and […] percent during the 2000s (see Chapter 2).

However, particularly during the early years of democracy, progress in macroeconomic management was vulnerable to reversals, especially before elections to help ensure success of the incumbents. In Ghana, for example, the fiscal deficit increased from 5 percent of GDP in 1991 to nearly 13 percent in 1992, an election year in which Jerry Rawlings faced the voters for the first time. Over time, however, such a tendency for political budget cycles has declined markedly, and is no longer statistically significant (see Chapter 3).

Summary

Africa's poor economic performance until early 1990s reflects, in part, its difficult geography, harsh climate, and high incidence of disease. The colonial state was also alien to African subjects, and left the continent at independence bereft of human capital, effective state, and physical infrastructure (particularly roads, ports and irrigation). The policies adopted by post-colonial governments were also disastrous. The costs of these failed policies eventually affected everyone, disrupting the political order. This combination of adverse natural conditions, colonial legacy of a weak state that was alien to the Africans, and poor economic policies have held the continent back.

The democratic response in the early 1990s reflected mainly a cathartic reaction to an alienating state, although it was also affected by developments in Eastern Europe. While

international aid donors became major players in the game of regime transition after 1989, particularly when they began to wield the carrots and sticks of political conditionality, they only helped create the conditions under which political change became possible, but did not in themselves trigger or sustain regime transitions or determine the direction that the transitions took.

The move toward democracy in many SSA countries has been accompanied by significant policy reforms, particularly since the mid-1990s. These reforms include impressive gains in macroeconomic stability, and a gradual strengthening of institutions, resulting in significant growth acceleration in recent years. However, economic and political progress in SSA has had many false starts in the past, and reversals have been all too often. The next two chapters analyze (i) the main reasons behind the recent growth acceleration (Chapter 2), and (ii) the experience with political budget cycles in SSA (Chapter 3).

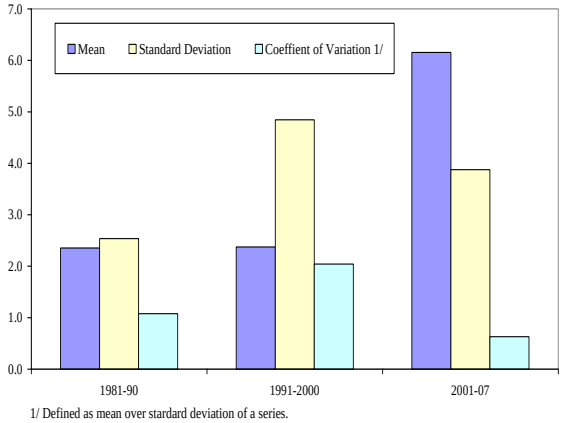
Chapter 2: What Explains the Recent Growth Acceleration in SSA?

Introduction

As discussed in Chapter 1, with a few exceptions, the SSA economies experienced economic stagnation in the post-colonialist period up until the mid-1990s, reflecting a combination of adverse natural conditions, a colonial legacy of weak states that were alien to Africans, and misguided policies adopted by most postcolonial SSA governments. Because of low growth and rising income inequality since independence, at the turn of the millennium nearly half of the SSA population fell below the poverty line of US$1.5 per day (PPP adjusted), up from 35 percent in 1970 (World Bank, 2006).

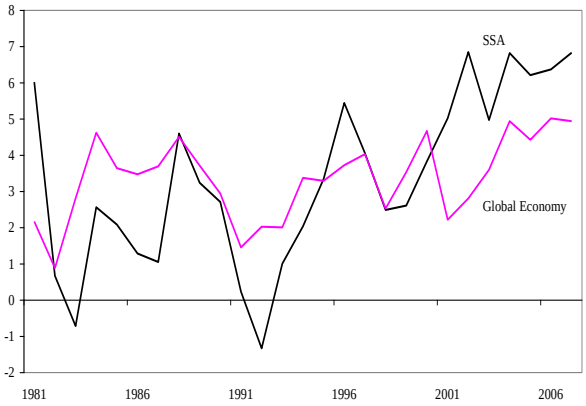
In recent years, however, economic growth in SSA has accelerated rapidly. GDP growth in SSA averaged over 6 percent during 2001-07, more than double the growth average in the previous two decades, and its volatility also declined (Figure 1). In addition, while SSA's growth performance seems to have broadly coincided with global economic cycles in recent decades, its GDP growth rate since early 2000s has been significantly higher than the world's average, compared to well below world's average during 1980-2000 (Figure 2).

Figure 1. Average Growth and its Volatility in Sub-Saharan Africa, 1981-2007
(in percent)



1/ Defined as mean over stardard deviation of a series.

Figure 2. GDP Growth in SSA and the Global Economy, 1981-2007
(in percent)



Stylized Facts on Potential Factors behind SSA Growth Acceleration

The main hypotheses that have been put forward to explain this significant growth acceleration in SSA in recent years, and its longer growth duration than has previously been the case, include (i) improved macroeconomic policies and strengthened institutions, (ii) better terms of trade, and (iii) higher external donor assistance. The main stylized facts on the potential impact of these three potential factors are discussed below.

Macroeconomic policies and quality of institutions

Indeed, the quality of policies and institutions in most SSA countries has shown dramatic improvements. Regarding policies, the growth acceleration has not come at the expense of macroeconomic stability as, excluding Zimbabwe, the average inflation in SSA declined to single digits from as high as 50 percent a year in the early-1990s (Figure 3). More importantly, countries that were more successful in reducing inflation, also enjoyed higher economic growth. As can be seen from Figure 4, the vast majority of countries that experienced a decline in inflation during 2001-07 relative to the 1990s, also had higher growth during the same period.

Figure 3. Growth and Inflation in Sub-Saharan Africa, 1981-2007
(in percent)

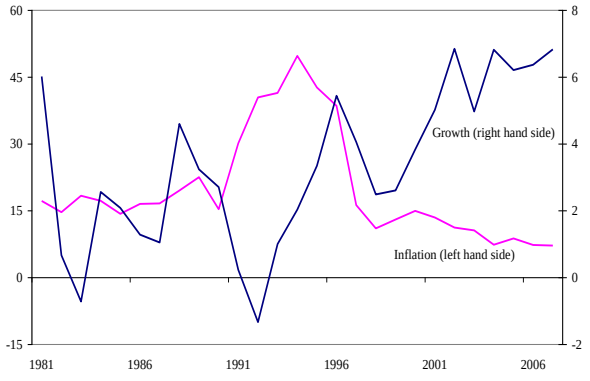
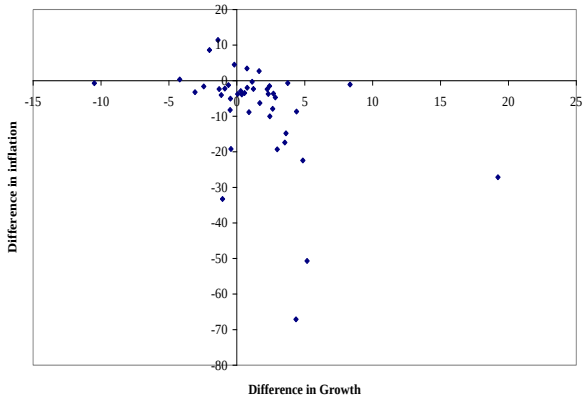
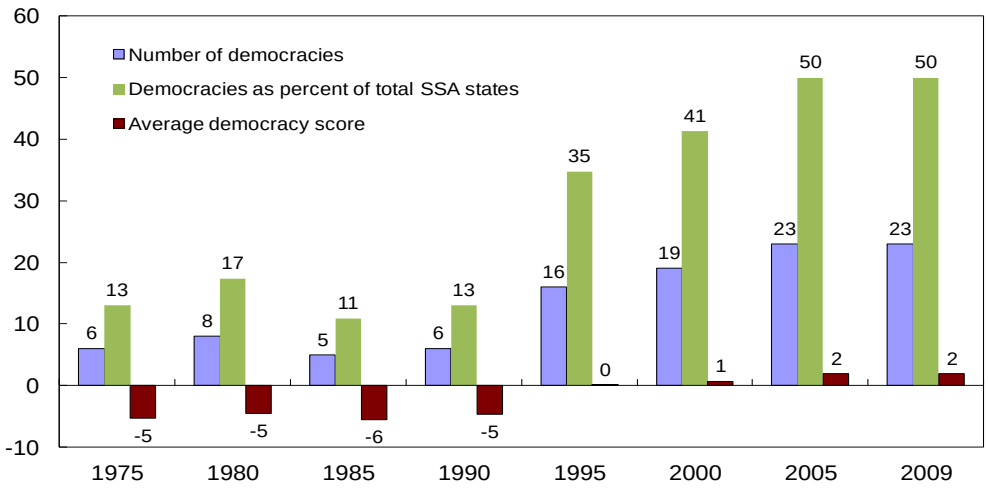


Figure 4. Change in Growth and Inflation in SSA, 2001-06 vs 1990-2000



The quality of institutions in SSA has also improved significantly starting from the early 1990s, with the number of democracies nearly quadrupling between 1990 and 2005, and the average democracy score improving significantly. However, half of SSA countries remain undemocratic, and the average democracy score is low relative to other regions (Figure 5).

Figure 5. Sub-Saharan Africa: Democracy Indicators, 1975-2009 1/

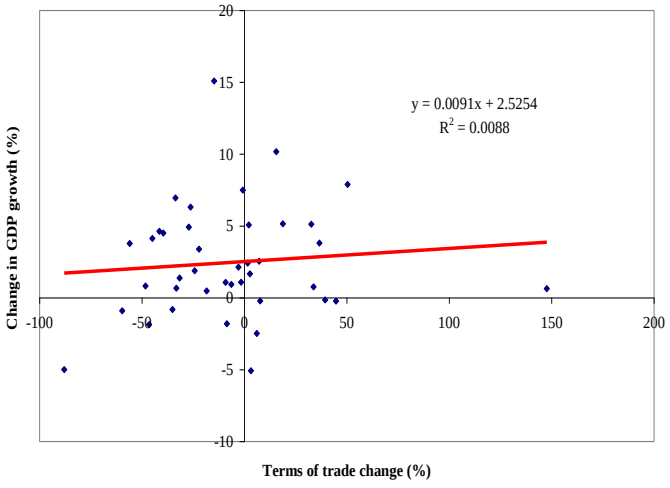


1/ Countries with polity2 indicator from the World Bank's CPI database with a value higher than 0 are classified as democracies. Polity2 takes values from -10 (least democratic) to +10 (most democratic).

Terms of trade

Terms of trade do not seem to have had a significant impact on the recent SSA growth acceleration. As can be seen in Figure 6, there is no clear link between better terms of trade and higher growth among SSA countries. Of the 30 SSA countries that have had an increase in GDP growth during 2001-06 relative to 1981-2000 (out of a total of 40 SSA countries included in Figure 6), more than half of them (24

Figure 6. Change in GDP Growth and Terms of Trade in Sub-Saharan Africa (2001-06 versus 1980-2000)



countries) have actually had a deterioration in terms of trade between the two periods. The apparent lack of a clear link between better terms of trade and the recent growth acceleration in SSA seems to defy the conventional wisdom that Africa's recent success may have been largely due to higher commodity prices, and consistent with findings of cross-country regressions that terms of trade improvements play a notoriously modest role in explaining differences in growth performance (World Bank, 2008). While the SSA oil producers have clearly been beneficiaries (especially Angola, Gabon, and Nigeria), the majority of SSA countries have had a deterioration in their terms of trade in recent years.

Foreign aid

A number of economists and political scientists have noted that the end of Cold War marked a watershed for external assistance to Africa, as simply professing ideological preferences was no longer enough to earn financial support from the two superpowers. Some argue that external assistance after the end of the Cold War was better targeted to governments that undertook democratic and economic reforms. However, while continuing to help good performers, this change in aid policy undermined the legitimacy of many autocrats. As a result, a number of governments propped up by the superpowers collapsed, and their countries succumbed to violence (e.g., Chad, Ethiopia, Liberia, Sudan, Somalia, and Zaire).

Available data from OECD show that total external financial assistance to SSA has increased sharply in recent years following a significant decline in the second half of the 1990s. At unchanged US$ prices, aid to SSA increased by about 25 percent during 2001-06 relative to 1991-2000, and in 2006 it was nearly double the average of 1991-2000 (Figure 7). It is worth noting, however, that only in 2005-06 did aid in fixed US$ prices exceed the previous peak

of the early 1990s. In addition, while Figure 8 suggests there is a positive correlation between increases in aid as a share of GDP and higher GDP growth rates, aid as a share to GDP during 2001-06 was higher than that during 1991-2000 in only 8 out of the 43 SSA countries included in Figure 8. In addition, out of 35 SSA countries that had lower aid in 2001-06 relative to 1991-2000, more than half (20 countries) had higher growth in the former period relative to the latter. It thus does not seem that aid has been a major driver of the recent growth acceleration in SSA.

Figure 7. Net Official Development Assistance to Sub-Saharan Africa, 1980-2006
(in millions of 2006 US$)

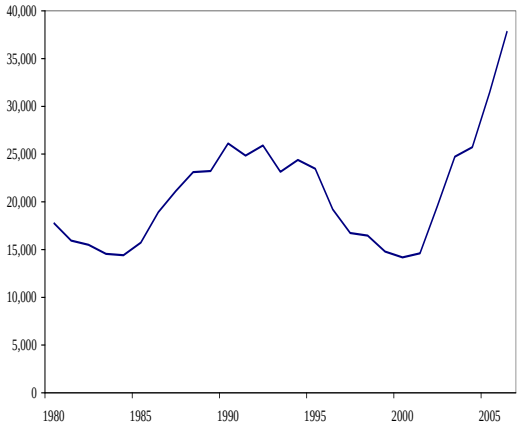
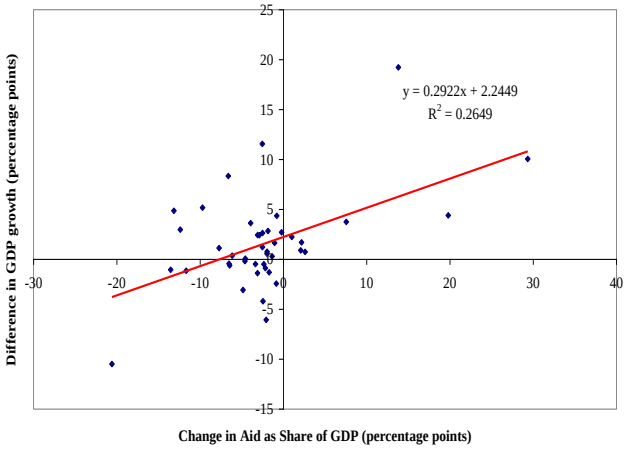


Figure 8. Changes in Aid and GDP Growth during 2001-06 versus 1991-2000



Summarizing, the stylized facts discussed above seem to support the view that the acceleration of growth in SSA that started in late-1990s has been associated with improvement in economic policies and institutions. Most SSA countries pursued sound macroeconomic policies, built their institutions and advanced economic reforms, and took advantage of economic opportunities from a favorable global environment. While aid seems to have a positive correlation with growth, overall aid to SSA at constant prices has exceeded the previous peak levels of early 1990s only in 2005-06, and aid as a share of GDP increased during the 2000s relative to the average of the 1990s in only a small fraction of SSA countries. Finally, contrary to conventional wisdom, growth acceleration in SSA does not

seem to have been fueled by better terms of trade. Given the limitations on what can be inferred from bilateral correlations between growth acceleration and potential explanatory factors, the rest of the chapter analyzes the recent growth acceleration in SSA in a more systematic manner.

Main Questions and Proposed Methodology

Against this background, this chapter seeks to address the following main questions related to the recent growth acceleration in SSA:

- Is the growth acceleration mainly due to factor accumulation or higher TFP?
- What is the role of policies as opposed to institutions on the growth acceleration?
- Is aid an important determinant of the growth acceleration?
- To what extent is the growth acceleration driven by favorable terms of trade?

To examine these questions this chapter uses the three main approaches used in the growth literature: (i) growth accounting; (ii) standard panel growth regressions; and (iii) probit analysis focused on growth accelerations episodes. Before outlining the strategy and specifications of these approaches, it is worth discussing the criticism on growth accounting and growth regressions, and the defense offered by their proponents.

Criticism of traditional growth approaches

The criticism on growth accounting has been concentrated in three areas.

First, total productivity is measured as a residual, and given that there are a myriad of determinants behind the residual, it should not be taken as an indicator of technical change.

Second, the decomposition is sensitive to the nature of production process and the income shares assumed for the factors of production. Data limitations force economists to use a Cobb-Douglas production function, and thus to assume fixed income shares for capital and labor across countries. The use of the Cobb-Douglas production function has also an additional implication—that TFP differences are factor neutral (i.e., we cannot tell whether an increase in TFP is due to a more efficient use of physical capital versus that of human capital).

Third, an accounting decomposition cannot determine fundamental causes of growth, i.e., for a country that is experiencing rapid increases in both capital accumulation and factor productivity, it is not clear whether the productivity growth caused the capital accumulation, or whether the capital accumulation made additional innovations possible. Critics stress that concerns on the endogeneity of both factor inputs suggests caution against using growth accounts to infer a casual interpretation of the growth process.

Usefulness of standard panel growth regressions has come under fire for three main reasons.

First, endogeneity of policy and institutional variables. Some critics (e.g., Rodrik, 2005) argue that it is difficult to find instruments for policy variables that satisfy both the exogeneity and exclusion requirements, and that plausible instruments for such variables are very few.

Second, instability of parameter estimates and model linearity. These concerns arise out of the extreme heterogeneity of the sampled population of the economies, as well as unreliability of data in many developing countries included in panel studies. For example, while microeconomic evidence suggests that the private returns to education are substantial and growth theory routinely imputes a social return to human capital investment that is as great as the private return, growth researchers have had an extraordinarily difficult time finding statistically and economically plausible impacts of educational variables in global growth regressions (Pritchett, 2002). More generally, the concern about parameter instability is that standard panel growth regressions are based on very strong assumptions about a single linear model being appropriate for all countries at all states. As discussed by Hausmann et. al. (2005), for instance, in models with "poverty traps" the relationship between policy variables and of growth outcomes is not linear, as a movement across a threshold can cause a switch from a "trap" state to a growth state.

Third, lack of appropriate focus on growth acceleration episodes and ignoring expectations. Some critics have argued that the traditional focus of empirical growth research on long-horizon in panel data growth regressions can camouflage important medium-term patterns in a country's growth. Some also view the role of expectations as being very important, as the same policy intervention may have extremely different impact on resource allocations, depending on whether it is expected to be sustained over time or quickly reversed.

In defense of traditional growth approaches

Defenders of growth accounting recognize that despite its extensive use, this method has done surprisingly little to resolve some of the most fundamental issues under debate in

development literature. There is no consensus, for example, on growth determinants—such as on the contribution of capital accumulation versus improvements in total factor productivity, the role of increased education, or the importance of economic policy. Defenders of traditional panel growth regressions also recognize that no effective instruments have been found for policy variables used in this approach.

At the same time, the defenders argue that if properly implemented and interpreted, both growth accounts and growth regressions are valuable tools, and have improved our understanding of growth experiences across countries, e.g., Bosworth and Collins (2003) and Frankel (2003). They note that the two approaches are useful, because used in concert they enable researchers to explore the channels (factor accumulation versus factor productivity) through which various determinants influence growth. Caselli (2004) also argues that while growth accounting cannot explain the ultimate reasons why a country grows faster or slower than another, it is a useful diagnostic tool. He stresses that, similar to a medical test, growth accounting can identify whether a country suffers from a certain ailment (e.g., low factor accumulation or low efficiency) and, although it cannot reveal the causes of such ailment, it is nonetheless a useful test to perform. Defenders of cross-country regressions also note that valid instruments have been found for institutional quality variables. In addition, Barro and Sala-i-Martin (2004) argue that using initial conditions or lagged values of regressors, which can be considered predetermined for an individual country, minimizes the endogeneity concern in growth regressions. However, given that policy variables are endogenous, a number of economists (e.g., Bosworth and Collins, 2003) also stress that the OLS results of panel growth regressions should be interpreted descriptively and, like growth accounts, one should be careful when using these regressions to infer the underlying causes of growth.

More recently, to address concerns about the strong linear assumption of panel growth regression, which may miss turning points in economic growth, some studies begin by identifying growth acceleration episodes, and then examining their potential determinants (see, for example, Hausmann et. al., 2005). For this reason, this chapter includes an analysis focusing on growth accelerations, to complement traditional growth accounting and panel growth regression.

Methodological issues and main findings in literature

Growth accounting

The main challenges using the growth accounting approach are: (i) the accurate measurement of income and factors of production (capital and labor), and (ii) choosing a functional form for the income process. On the first issue, quality differences in the capital stock make it difficult measuring capital input by relying exclusively on quantity. As for the functional form of the income process, the standard framework relies on a Cobb-Douglas specification of the production function, in which efficiency differences are factor neutral—i.e., if a country uses physical capital efficiently, it also necessarily uses human capital efficiently (Caselli, 2004).

The main approaches used in the growth literature to estimate factor shares in output consist of (i) estimating directly the coefficients of the production function by regressing the rate of growth of output on the growth rates of capital and labor, with the intercept measuring the growth in TFP, and the coefficients on the factor growth rates measuring, respectively, the shares of capital and labor; and (ii) adopting a calibration approach, i.e., using a priori measures for capital and labor shares—in the range of 0.3-0.4 for capital and 0.6-0.7 for

labor (e.g., Bosworth and Collins, 2004).[2] The disadvantage of the regression approach is that the growth of capital and labor cannot usually be regarded as exogenous with respect to that of TFP (Barro, 1999). Further, as argued by Aiyer and Dalgaard (2005), the standard Cobb-Douglas methodology of assuming a constant capital share of about one-third for all countries is a very good approximation to a more general formulation under which countries have different aggregate production functions that do not require a constant elasticity of substitution among factors.

The usual methodology for growth accounting assumes a Cobb-Douglas production function as described below:[3]

$$Y = AK^{\alpha}(HL)^{(1-\alpha)} \qquad (1)$$

where: Y is the gross domestic product (GDP), K is the physical capital stock, A is the level of technology (and corresponds to the standard notion of total factor productivity (TFP)), L is labor inputs, which is assumed to be augmented by H, an index of the average level of labor quality.[4] This Cobb-Douglas production function assumes constant returns to scale. Equation (1) can be transformed to yield the growth in output per worker (y/l) as follows:

$$y/l = \alpha(k/l) + (1-\alpha)h + a \qquad (2)$$

[2] See Iradian (2009) for a summary of approaches used in the literature.

[3] For a detailed description of the methodology see Collins (2004).

[4] An alternative formulation would have human capital (education) as an independent factor in the growth process that can augment labor, physical capital, and TFP—not just labor—as in Mankiw, Romer and Weil (1992), and Klenow and Rodrigruez-Claire (1997).

where lower case letters denote a variable's average annual growth rate. The capital stock measure is constructed from investment data using the perpetual inventory method as below:

$$K_t = I_t + (1-\delta)K_{t-1} \qquad (3)$$

where δ is depreciation rate that is usually assumed to be 0.05.

The approach used in this chapter excludes the impact of human capital (H), given that the human capital (H) is particularly difficult to measure given lack of education data for most SSA countries. Barro and Lee (2000) and Cohen and Soto (2001) have constructed data sets for human capital for large samples of countries through 2000, including many SSA counties, but no updates are made since then. This is not likely to particularly problematic for a number of reasons:

First, the return to one additional year of schooling is relatively low—at between 10-20 percent (see Caselli, 2004). Since higher human capital in SSA proxied by additional years of schooling, it is likely to have only a limited impact on the SSA growth acceleration.

Second, using the years of schooling as a measure of educational attainment, does not incorporate any adjustment for quality variations. This creates problems when examining the impact of education on income across countries. Easterly (2001), for example, argues that despite the rapid growth in human capital over the 1960 to 1987 period in many African countries —including Angola, Mozambique, Ghana, Zambia, Madagascar, Sudan and Senegal—their economic growth has nevertheless been a disaster. Pritchett (1999) also shows that while educational capital growth in SSA was much higher than that of East Asia during 1960-85 (over 4 percent per year and less than 3 percent per year, respectively), the

GDP per capita growth in SSA was much lower than that of East Asia during the same period (about 0.5 percent per year and over 4 percent per year, respectively).

Third, the quality of education data is rather noisy. De la Fuente and Domenech (2002), for example, conclude that the average years of education in the Barro and Lee data set are rather noisy, and argue that poor data quality explains in part why human-capital based models often perform rather poorly.

For these reasons, while conceptually education seems quite an important ingredient for economic growth over the long term, for relatively short horizons the link between growth and education may be tenuous. Thus not much will be lost when making growth decomposition excluding the H variable from the equation (1) above.

The investment series used in this chapter is based on overall investments (i.e., public plus private investments) reported in national accounts. Given the perceived weaknesses in the classification of public investment spending in SSA, an unsuccessful effort was made to compile an alternative series on investment for each country based on imported equipments. The latter could be a good proxy of investment spending based on findings by Eaton and Kortum (2001), given that for most of the world's capital is produced in a small number of R&D-intensive countries, with the rest of the world generally importing their equipment. However, data series on equipment imports were either too short, or simply not available for most SSA countries.

Using the approach outlined in (1)-(3) above, World Bank (2008), which studies SSA growth experience during 1960-2000, finds that the growth shortfall in the continent through mid-1990s is due to a steady decline in physical capital accumulation per worker, both in absolute

term and relative to other developing countries, and that the recovery experienced during the second half of the 1990s, by contrast, is entirely accounted for by rapid increases in the productivity residual. In addition, they find that the empirical link between physical capital accumulation and growth is weaker in SSA than it was in other developing regions between 1960 and 2000, which is a phenomenon widely observed in the growth literature. The dominant interpretations of this include inefficient public sector investment (Artadi and Sala-i-Martin, 2003), diversion of resources into rent-seeking and corruption (Vishny and Shleifer, 1993), and threshold effects (Sachs et. al., 2004).

Empirical Approaches

Early empirical work on economic growth focused mainly on cross-section econometrics, regressing growth over a relatively long period of time (2-4 decades) against policies and a number of control variables capturing specific country characteristics. More recently, work has focused on two main tracks—(i) panel growth regressions, which organize data in 4-5 year averages, and (ii) empirical approaches that examine the role policies and institutions on episodes of significant acceleration in economic growth. Both approaches are used in this chapter, as discussed below.

Panel growth regressions

As noted in Barro and Sala-i-Martin (2004), economic theories are not precise enough to pinpoint the exact determinants of growth. Therefore the standard empirical framework that seeks to find such determinants uses two kinds of variables in panel regressions: first, initial levels of state variables, such as the stock of physical capital and the stock of human capital; and second, control variables, such the ratio of government consumption to GDP, the ratio of

domestic investment to GDP, the extent of international openness, movements in the terms of trade, the fertility rate, indicators of macroeconomic stability, measurements of maintenance of the rule of law and democracy, and so on.

A paper by Sala-i-Martin et. al. (2000) identifies a number of variables that are strongly or robustly related to growth: human capital, initial level of per capita GDP (as a measure of conditional convergence), life expectancy, dummy of being a tropical country, and government consumption in GDP. Variables not robustly related to growth included, surprisingly, the number of revolutions and coups, as well as the index of political rights, inflation rate, spending in public education, and measures of higher education.

Bosworth and Collins (2004) use the following variables in growth regressions: (i) for initial conditions and external shocks: the initial income per capita, life expectancy, log of population, Frankel-Romer-Rose trade instrument, geography, and institutional quality; and (ii) for policy variables: the budget balance, inflation, and Sachs-Warner openness variable.

As shown in World Bank (2008), which summarizes panel growth regression models used in the literature, equation (1) can be transformed into:

$$\Delta \ln y_{it} = -\gamma \ln y_{it} + \phi' x_{it} + \lambda' z_i + \varepsilon_{it} \qquad (4)$$

Where ε_{it} is country/period disturbance, $\gamma > 0$ is the speed of convergence along the steady-state path, and vectors x_{it} and z_i are, respectively, time-varying and time-invariant determinants of the growth in per capita income. In literature these determinants include a number of theoretical variables that affect factor accumulation of productivity, such as policy variables, institutional quality, political indicators, and geographical location. In global

growth regressions, the initial health and education attainment are often strong predictors of subsequent growth. It has to be noted that institutional variables, similar to those on geography, tend to change only slowly over time, and their role in growth regressions has traditionally been limited to explaining cross-sectional rather than intertemporal variations in growth (World Bank, 2008).

Empirical approaches focused on growth accelerations

This section describes the approach used below for identifying growth accelerations and the empirical methodology. For an episode to be considered "growth acceleration", the following conditions must be satisfied:

1) $g_{t,t+n} \geq 1.5$ percent per year

2) $\Delta g_{t-n,t+n} \geq 2$ percent

3) $y_{t+n} \geq \max\{y_i\}, i \in [t-n, t]$

Where $g_{t,t+n}$ is the growth rate during a certain period (following baseline specification in Hausmann et. al. (2005), n=6, i.e., the time horizon is seven years), $\Delta g_{t-n,t+n}$ is the change in the average growth rate during the acceleration episode compared to the average growth for the previous period of the same length, and y_{t+n} is real output per capita during the time window chosen.

This proposed filter aims to identify "real" growth acceleration episodes, by combining a relatively high level of per capita growth with a significant acceleration of growth. The first

condition is to ensure that growth is high during the acceleration period, the second condition defines the threshold increase in the growth rate for it to be considered growth acceleration, and the third condition to ensure that an acceleration in growth is not due to a mere recovery from a previous decline. Setting growth at 1.5 percent as a floor for high growth may seem like a low bar for an episode to be considered among growth accelerations, but was selected to include cases in which the overall growth in a number of strong accelerations signaled a clear change in the subsequent growth path relative to the pre-acceleration period, such as Benin in 1995, Cameroon in 1996, Republic of Congo in 2000, Ghana in 2000, Senegal in 1995, Swaziland in 2003, and Uganda in 1988 (see Table 2). For robustness, tests with minimum growth thresholds of $g_{t,t+n} \geq 2.5$ and $g_{t,t+n} \geq 3.5$ were also conducted, in line with the threshold used in Hausmann et. al. (2005).

The empirical strategy is to use a probit analysis, with the dependent variable being a dummy variable that takes the value of 1 around growth accelerations and 0 otherwise, and the explanatory variables including a number of variables of interest—such as those on external shocks, political changes, and economic reforms. More specifically, the dummy variable on the growth acceleration takes the value 1 in time t-1, t, and t+1, where t is the year of acceleration identified by the filter described above.

The explanatory variables are defined as follows:

Terms of trade (TOT): is a dummy variable that takes the value 1 when the average change in the terms of trade in period t versus that of the previous four years (t-4) is in the upper 10 percent of the whole sample, and 0 otherwise. Such a variable is meant to capture exceptionally favorable terms of trade.

Political regime change (Higher_Dem): is a dummy variable that take the value 1 in the five-year period starting from the year in which the change in the polity2 score of the Polity IV database increases by at least three units.

End of wars (War_End): is a dummy variable that take the value 1 in the five-year period starting from the year in which a war ends, according to the Armed Conflicts Database.[5]

Economic liberalization (Econ_Lib): takes the value 1 for the first five years starting from the year in which the index originally developed by Sachs and Warner (1995), and later extended by Wacziarg and Welch (2003), is considered as "open", and 0 otherwise. As discussed in Hausmann et. al. (2005), this index is a good candidate for a measure that captures broad economic reforms.

Aid increase (Aid): takes the value 1 for the three-year period starting from the year in which the three-year average exceeds that of the previous three-year average by at least 3 percentage points of GDP. While arbitrary, the threshold of 3 percentage points of GDP on the increase of aid is about 1/3 of median aid to SSA countries during the period 1980-2006.

Issues of Robustness

Panel Growth Regressions

One estimation problem is which explanatory variables to include in the growth equations. Variables could be statistically significant depending on whether certain other variables are or not included in the specifications. Growth theory does not provide a clear guide on which

[5] See link at http://www.prio.no/pd/GenericPage.aspx?id=726.

indicators to include in the growth regressions. For this, a number of specifications were estimated using a combination of the traditional growth explanatory variables.

Another concern is the possible sensitivity of the result to the assumed form of the growth process. In equation (4) the explanatory variables enter linearly and independently. This reflects an ad-hoc assumption that the marginal effect of a change in every explanatory variable is constant, both across different levels of the variable and across different economies. This concern was addressed by testing for nonlinearities, which was done by introducing squared terms for particular variables, and also interacting some of the variables of interest with a measure of country's level of development (such as per capital income) in the growth regressions as done in Iradian (2008).

Additional robustness checks included running different subsamples of SSA countries, such as including and excluding resource-rich countries, and including and excluding small islands.

Probit Analysis on Growth Accelerations

As for the approach focusing on growth accelerations, the parameters of the filter are somewhat arbitrary. It should also be noted that qualitatively the parameters of the filter described above are standard, but in most similar studies the first threshold is set for an annual growth rate higher than 3-3.5 percent. The 1.4 percent threshold proposed for this paper represents the medium growth rate in SSA during 1980-2007. The implications of changing filter parameters will be discussed below.

Role of Aid

Foreign aid to most SSA countries is several points of GDP per year, and represents a significant share in the SSA budgets. It is thus important to examine in some detail whether aid has played any role in the recent SSA growth acceleration. The effectiveness of foreign aid in promoting economic growth in developing countries remains a contentious are of debate both theoretically and empirically. This section summarizes the differing theoretical arguments, as well as conflicting empirical findings in a number of recent studies on aid effectiveness.

Theoretically, in a simple neoclassical growth model (e.g., Solow model) aid increases economic growth through its positive impact on investments in the aid-recipient country, as long as the recipient's GDP is below the level corresponding to its peak transitional growth rate. The neoclassical model suggests that poor countries should have a high return to capital and a fast growth rate in transition to the steady state. However, there are several factors that could interfere with this process. With a subsistence consumption constraint and imperfect international capital markets, poor countries will tend to grow slowly despite a high marginal return to investment. In this context foreign aid can accelerate growth rates in the transition to a steady state. Furthermore, various institutional and policy distortions can lower the return to capital and reduce transitional growth rates. Burnside and Dollar (2000) show that in such a model, the impact of aid will be greater in a low-distortion environment. In general, developing country growth rates depend on initial income, institutional and policy distortions, aid, and aid interacted with distortions.

However, in reality foreign aid is intermediated by governments, and these are not always best thought of as benevolent social planners. The incentives faced by political figures are not necessarily the same as those faced by a social planner. Given this, it is possible that aid can have little or no impact on overall economic prosperity in the recipient country. Mosley and Hudson (1996) and Svensson (1996a, 1996b), for example have shown that when the donor-recipient relationship is modeled as a non-cooperative game, moral hazard problems can lead to aid having little impact on the problems it is intended to alleviate. Aid may simply relax the budget constraint of the recipient government, without having much impact on the amount of that budget that ultimately is used to purchase capital. Furthermore, the donor government can also be part of this game for reasons other than benevolence. Donor interest may lead to the suboptimal use of aid and dampen any positive impact that it may otherwise have.

In models with poverty traps, even a temporary injection of aid may help a country take off, and reach a permanently higher level of per capita income. However, in game-theoretic models, moral hazard and adverse selection problems reduce aid effectiveness predicted by the simple Solow model. Aid critics also point out that, to a significant extent, aid effectiveness is affected by the political regime, including the quality of institutions and government policies. They also stress that aid is fungible, and additional aid may actually end up financing an increase in consumption rather than investment.

Empirically too, there is no consensus on the effectiveness of aid on growth. By now, there is a long and inconclusive literature on aid effectiveness, which is hampered by data availability, debates over the mechanisms through which aid affects growth, and disagreements over econometric specifications. On the one hand, for example, Boone (1996)

finds that aid increases consumption, but does not in most cases have a significant positive impact on higher investments, or leads to an improvement in basic human development indicators. Boone argues that his findings support the pessimistic predictions of Bauer (1971) and Friedman (1958) that aid flows basically benefit political elites, and do not substantially change government incentives to carry out the programs intended to be supported by the aid flows. On the other hand, Hansen and Tarp (2000) provide overwhelming support that aid raises the level of investment in recipient countries, and that in turn higher investments have a positive effect on growth. They also find that the aid-growth relationship depends not only on the level of aid, but also on key policy indicators. In another influential study, Burnside and Dollar (2000) find that aid has a positive effect on growth in the presence of good policies and institutions, but little effect otherwise. More recently, Clemens et. al. (2004) find that while there is no discernible relationship between growth and overall aid, when aid flows are divided into aid that has short-term and long-term impact, the former has a strong and statistically significant causal relationship on economic growth.

Findings that support a positive impact of aid on economic growth in some of the above studies have been challenged by subsequent papers that have used updated data sets, or different model specifications. Easterly et. al. (2004), for example, find that aid effectiveness results in Burnside and Dollar (2000) are not robust to a data set with longer time series and that includes additional countries. While Easterly et. al., do not argue that aid is ineffective, they suggest that "...economists and policymakers should be less sanguine about concluding that foreign aid will boost growth in countries with good policies." Rajan and Subramanian (2005) also find little evidence of a robust positive impact of aid on growth. While they find some evidence of a positive relationship between aid and growth for the period 1980-2000,

this is not the case when outliers are excluded. In addition, they find no evidence that aid works better in stronger policy environments, as suggested by Burnside and Dollar (2000), or that certain kinds of aid work better than others as suggested by Clemens et. al. (2004).

Against this background, this chapter tests the aid effectiveness bearing in mind its endogeneity with economic growth, and thus that a positive correlation between aid and growth does not necessarily imply causality from aid to growth. Given the large size of aid to GDP in most SSA countries, the chapter also examines whether aid has been better targeted to governments that have undertaken democratic and economic reforms and have sought to build better institutions.

Results

Growth Accounting

Before discussing the results of growth accounting, it is worth stressing that this approach is probably better suited to analyze growth performance over long periods of time, given the significant volatility at high frequencies in both labor and capital accumulation (and, as a result, in the TFP residual as well). The usefulness of this approach therefore in analyzing growth accelerations is somewhat limited.

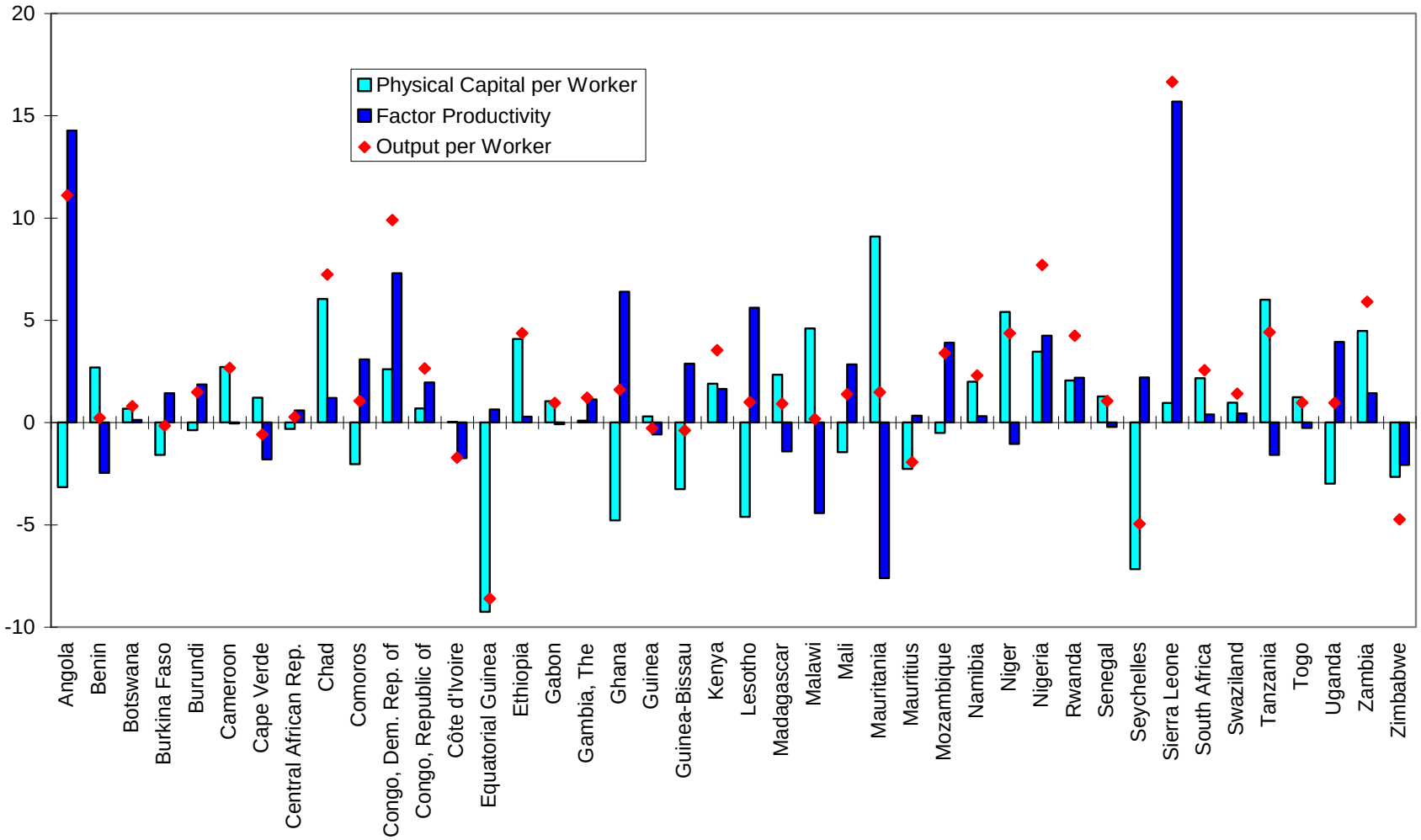
Turning to the results, as can be seen in Table 1 and Figure 9, most SSA countries experienced a significant increase in growth during 2001-07 compared to the previous two decades, which reflected a combination of higher capital per worker as well as higher TFP. In about 80 percent of SSA countries in Figure 9 (33 out of 42), for example, output per worker during 2001-07 was higher relative to the 1990s. Of the 33 SSA countries that experienced

higher growth, 23 of them (about 70 percent) also enjoyed higher TFP growth, and in 15 of them (about 50 percent) the increase in TFP growth exceeded that in capital per worker. The improvement in overall growth and TFP was particularly large in countries that started enjoying peace in the mid-1990s/early-2000s after years of disruptive wars and other civil conflicts, and thus the turnaround reflects negative growth in earlier periods (e.g., Angola, Democratic Republic of Congo, Ethiopia Liberia, Mozambique, Rwanda, and Sierra Leone). A number of oil exporters (notably Angola and Nigeria) also enjoyed a significant increase in the TFP.

Not only was SSA growth higher during 2001-07 relative to the previous two decades, but the number of SSA countries with negative growth declined from 25 countries in 1991-2000 (more than half of SSA countries) to just 11 countries in 2001-07 (about a quarter of SSA countries). In the latter group, negative capital contribution was the main reason, with negative TFP accounting for only about a third of these countries (4 out of 11 countries). The majority of countries with negative output per worker during the 2001-07 were experiencing some sort of internal conflict (e.g., Burundi, Central African Republic, Cote d'Ivoire, Eritrea, Guinea-Bissau, and Zimbabwe).

While both the capital per worker and TFP exhibit a wide range of variation across all periods, the magnitude of variation has declined during 2001-07 for both indicators relative to 1991-2000, and the variance of TFP has remained well below that of capital per worker.

Figure 9. Contribution of Physical Capital and TFP in SSA Growth Differences
(Percent difference: 2001-07 versus 1991-2000)



Standard Panel Regressions

The data used for panel regressions are four-year averages for the period 1970-2006 (a total of nine four-year periods). The dependent variable is the average annual growth rate per capita during each four-year period, and the explanatory variables are as follows:

Initial conditions and external shocks variables

Init_Inc—initial income per capita; and

Init_Life_Exp—initial life expectancy;

Policy variables

Gov_Bal—the budget balance as a share of GDP;

M2_GDP—ratio of M2 to GDP;

Infl_Avg—the inflation rate; and

Open_Trade—the trade openness variable originally developed by Sachs and Warner, and later updated by Wacziarg and Welsh.

Institutional variables

CPIA—the World Bank's Country Policy and Institutional Assessment index, which rates countries against a set of 16 criteria on the quality of policies and institutions;[6] and

ICRGE—the economic risk indicator from the International Country Risk Guide (ICRG) group—as an alternative measure of governance and institutional quality.

Other variables

War—dummy variable that takes the value 1 in a particular four-year period if the country had been a war in any year of that four-year period and 0 otherwise, with information on wars taken from the armed conflict dataset.[7]

ODA_Aid—the aid to GDP ratio provided by official donors, as reported by OECD under the official developments assistance (ODA) statistics.

Country and time fixed effects were used to control, respectively, for specific country characteristics (that would otherwise lead to missing variables problem, such as landlocked vs countries with sea access, British vs French colonies, incidence of disease, etc), and for global effects (such as international business cycles).

The results are summarized in Table 2. The first two columns are fixed effects OLS specifications—the first for the whole period and the second for post-Cold War period. The

[6] For a description see World Bank's website: http://web.worldbank.org/WBSITE/EXTERNAL/TOPICS/ENVIRONMENT/EXTDATASTA/0,,contentMDK:21115900~menuPK:2935553~pagePK:64168445~piPK:64168309~theSitePK:2875751,00.html.

[7] For more details see http://www.prio.no/CSCW/Datasets/Armed-Conflict.

sign of variables is generally as expected, although for the whole period only the initial income is statistically significant. In the post-Cold War period, however, open trade and aid variables become statistically significant also, the former at the 1 percent level and the latter at the 10 percent level. The inflation variable also becomes statistically significant, but has the wrong sign although with a very small coefficient. As noted above, the OLS specifications suffer from endogeneity problems for the policy, institutional, and aid variables. Therefore a positive correlation of these variables with growth should not be considered to infer causality. It is worth noting, however, that a positive correlation for aid seems to rebut the claim that higher aid is detrimental to growth. The magnitude of the aid coefficient for the post-Cold War period also seems consistent with that suggested by growth theory (see Rajan and Subramanian, 2005).

To address endogeneity of aid, the third and fourth columns are fixed effects two-stage least squares, instrumenting for aid using the approach in Clemens et. al. (2004). The results are broadly unchanged from the OLS results, except that the magnitude of the aid variable is larger and statistically significant for both the whole and the post-Cold War periods, and the war variable also becomes statistically significant. It is also worth noting that the first stage results for aid suggest that it is positively correlated with better political and institutional indicators (CPIA and ICRGE scores), and a more open trade regime.

The last two columns represent the results from a system GMM approach. While the magnitude of the variables remains broadly similar to the OLS and 2SLS, only the government balance and inflation variables remain statistically significant.

Summarizing, as expected, initial income is negatively correlated with growth, trade openness is positively correlated, and armed conflicts are negatively correlated. Political and institutional indicators also seem to be positively correlated, but usually not statistically significant, which may be because the positive effects of good policies and institutions take a long time to show up in growth, and their effect cannot be adequately captured in standard growth regressions. The results also suggest that the magnitude of aid's correlation with growth seems to have increased in the post-Cold War period, which is consistent with the view that the end of the Cold War has been a watershed in the way donors provided aid to SSA.

Growth accelerations

Using the filter described above with a growth threshold of 1.5 percent yields 37 growth accelerations in SSA during the period 1980-2007 (34 if small islands are excluded) (Table 3). If instead the threshold for the growth rate in the post-acceleration period were set at 2.5 and 3.5 percent the number of growth accelerations in SSA during 1980-2007 would fall from 37 to, respectively, 28 and 22 episodes, with a clear upward trend of growth accelerations in SSA since 2000. In addition, the magnitude of the typical growth acceleration in SSA has been relatively high, with the average growth acceleration during 1980-2007 amounting at about 5.9 percentage points. Only 4 accelerations are associated with the oil boom of recent years (Angola in 2002, Chad in 2001, Republic of Congo in 2000, and Nigeria in 2000).

Before embarking into the probit analysis, it is useful to examine the bivariate relationship between growth accelerations in SSA and their potential determinants. Following the approach in Hausmann et. al. (2005), Table 4 reports two statistics.

First, the proportion of growth accelerations preceded or accompanied by changes in the four potential determinants discussed above—i.e., terms of trade shocks, end of wars, trade liberalization reforms, and political regime changes.

(ii) Second, the proportion of changes in these four determinants that are followed or accompanied by growth accelerations.

The first statistic is indicative of the explanatory power of these four potential determinants on growth accelerations, whereas the second statistic is suggestive of the success rate that these potential determinants have in generating growth accelerations. For both statistics a match is considered when a five-year period following the event of a potential growth determinant overlaps with a three-year window centering on the growth accelerations events listed in Table 2. The five-year window for potential growth determinants is to allow them to have an effect on growth, and the three-year window on growth accelerations is to reduce the probability of a "near miss" given the arbitrariness in the parameters of the filter used to identify growth accelerations.

The bottom line of Table 4 results is that the relationship between growth accelerations and the five potential determinants considered is positive, but that the strength of such relationships is relatively moderate. More specifically, the results suggest that the explanatory power is: relatively strong for aid (46 percent), moderate for both trade liberalization and positive change in democracy (36 and 32 percent, respectively), relatively

low for end of wars (21 percent), and very weak for improvements in terms of trade and for negative changes in democracy (11 and 14 percent, respectively). The success rate of these five determinants in generating growth accelerations is somewhat higher than their explanatory power for three variables—trade liberalization, end of wars and positive changes in democracy (about 40 percent for each of them), but lower for aid (30 percent) and very weak for improvements in terms of trade (only 4 percent). The success rate of a negative change in democracy is also surprisingly high (nearly 40 percent), although it is useful to note that during 1980-2007 episodes of negative changes in democracy in SSA were significantly lower than those involving positive changes (32 vs. 18). Also, it is worth noting that while the increase in aid has the strongest explanatory power among the variables considered in Table 3, its success rate is actually lower than for the other variables.

A probit analysis was also conducted to see in a more systematic way the role of policies and institutions in growth accelerations in SSA. The dependent variable as discussed above is a dummy that takes the value of 1 in the three years centered around the year in which the algorithm described above suggests a growth acceleration (i.e., the dummy takes the value in the period [t-1, t+1], where "t" is the year identified as growth acceleration). The explanatory variables are also dummy variables defined as discussed above.

The results are summarized in Table 5.[8] The baseline specification (1) includes all the explanatory variables—i.e., ends of wars, higher democracy, trade liberalization, better terms of trade, and higher aid. The first two variables are statistically significant, whereas the other three are not. Since the series for trade liberalization is missing for countries accounting for

[8] The sample excludes the small island SSA countries given that for them a number of the explanatory variables are not available.

more than half of the growth acceleration episodes, specification (2) drops the trade liberalization variable, whereas (3) drops terms of trade and aid variables, both of which are not statistically significant in specification (2). The results in both specifications (2) and (3) remain qualitatively unchanged from specification (1), with both end of wars and higher democracy remaining statistically significant.

To test the robustness of these results, probit tests with the same specifications as in (1)-(3) were run for growth thresholds of 2.5 percent (specifications (4)-(6)) and 3.5 percent (specifications (7)-(9)). In specifications (4)-(6), in which the growth threshold is set at 2.5 percent, the results are qualitatively similar to those in specifications (1)-(3), despite about a quarter less episodes of growth accelerations in the former relative to the latter. In specifications (7)-(9), in which the growth threshold is set at 3.5 percent, end of wars remains statistically significant, but improvements in democracy are no longer statistically significant. Instead the trade liberalization (specification (7)) and terms of trade (specifications (7)-(9)) become statistically significant.

Complimentary Information

This section complements the empirical results with the evolution of variables of interest (e.g., aid, policies, quality of institutions, and terms of trade) for different groups of SSA countries according to their growth performance during 2001-07. More specifically, SSA countries were classified into low, medium, and high growth countries during 2001-07. The cut-off points under this classification was set so as to ensure that each of these three groups

makes up about a third of the SSA countries.[9] While such grouping cannot establish cause and effect, it allows comparing the experience of fast-growing SSA countries with that of slow-growing ones, to see if the story they paint is consistent with the results of panel growth and probit regressions analysis.

The results, which are summarized in Figure 10, suggest that:

- ***Democracy and Economic Freedom***. High-growth countries seem to have significantly higher democracy and economic freedom indicators compared to low-growth ones (as measured, respectively by the polity2 and economic ICRG indicators).

- ***Economic policy***. High-growth countries have sounder fiscal policy compared to low-growth countries, but inflation performance has not been significantly different relative to other SSA countries since late-1990s, and trade openness has trailed that in medium- and low-growth countries.

- ***Aid***. High-growth countries received significantly higher aid than the other two groups during the 1990s, but the situation reversed during the first half of the 2000s.

Conclusions

Summarizing, the analysis in this chapter suggests that the growth acceleration in SSA during the 2000s is mainly the result of more open and democratic societies, lower incidence of armed conflicts, as well as better institutions and policies adopted by the vast majority of

[9] The cut-off points were less than 1 percent for low-growth category, 1-3 percent growth for the medium-growth category, and over 3 percent growth for the high-growth category.

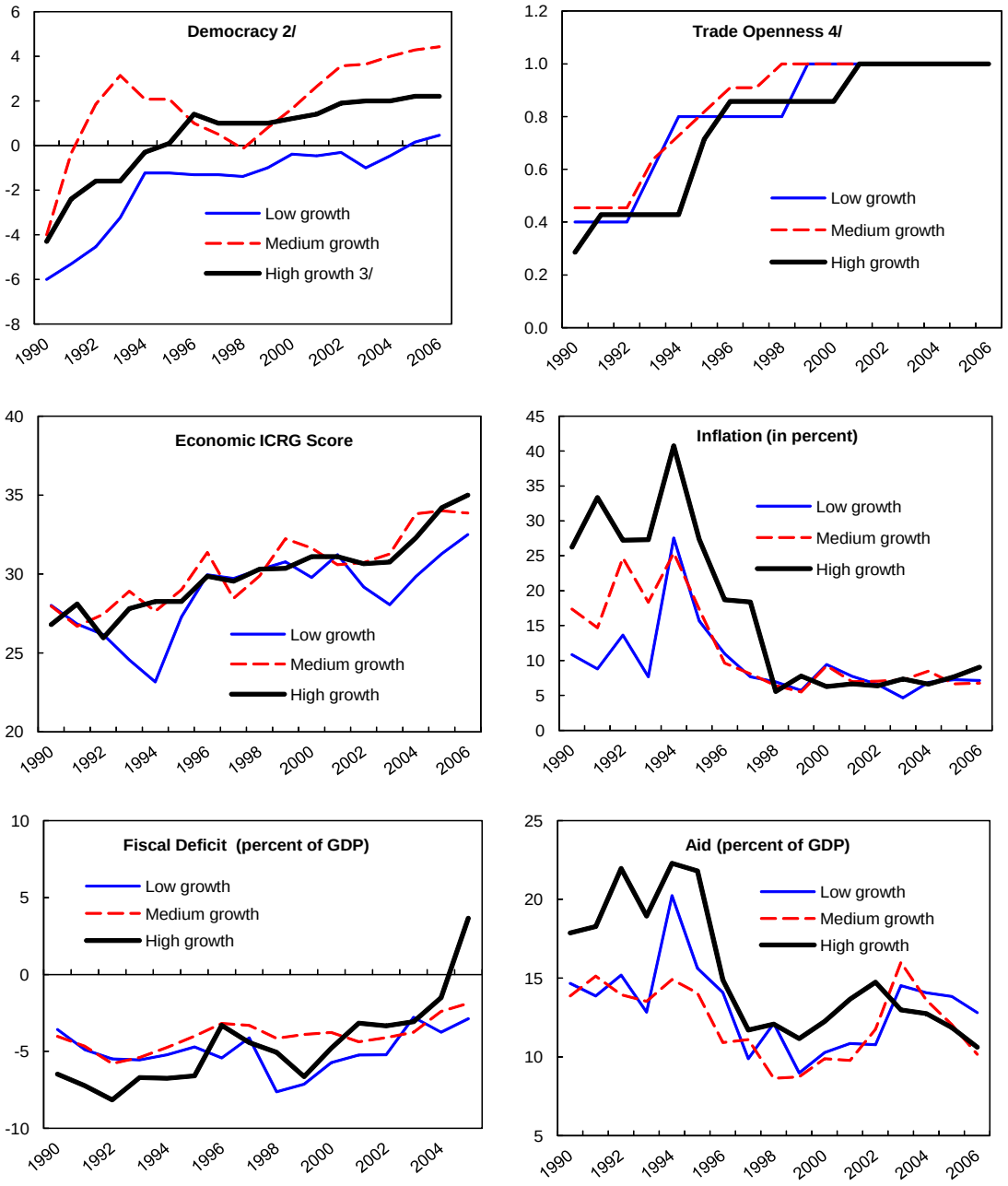
SSA governments. Better terms of trade and higher aid, although having an important role in some countries, seem to have played a relatively limited role in the growth acceleration for the continent as a whole. More specifically:

- **Growth accounting** suggests that SSA's growth acceleration during the 2000s reflects a combination of higher capital accumulation, possibly reflecting lower incidence of armed conflicts, advances in democracy, and stronger policies.

- **Panel growth regressions** suggest that, as expected, initial income has a negative correlation with growth (seeming to confirm conditional convergence in SSA predicted by neoclassical growth models), trade openness has a large positive correlation, and armed conflicts have a large negative correlation. While political and institutional indicators have a positive correlation with growth, they do not have a statistically significant impact, which may be because the positive effects of good policies and institutions take a long time, and cannot be captured in standard growth regressions.

- **Probit analysis focused on growth acceleration episodes** also suggests that trade liberalization, end of wars, higher democracy have a statistically significant correlation with growth accelerations. At the same time, better terms of trade and higher aid do not seem to have a statistically significant correlation with growth accelerations in most specifications.

Figure 10. Aid, Policy, and Institutional Indicators in SSA 1/



1/ SSA countries were classfied into low, medium, and high growth based on their average growth during 2001-06. Cutt-off for each group was selected so that 1/3 of SSA fell in each category (i.e., growth less than 1 percent for the low-growth group, 1-3 percent for the medium-growth group, and above 3 percent for the high-growth group).
2/ Average of Polity2 indicator that takes values from -10 (least democratic) to +10 (full democracy).
3/ Excludes oil producers (Angola, Equatorial Guinea, and Nigeria).
4/ Index of trade openness takes value 0 and 1. Originally compiled by Sachs and Warner (1995), and updated by Wacziarg and Welsh ([2001]).

Table 1. Sources of Growth in SSA, 1981-2007

	Output			Output per Worker			Contribution of: Physical Capital per Worker			Contribution of: Factor Productivity		
	1981-90	1991-2000	2001-07	1981-90	1991-2000	2001-07	1981-90	1991-2000	2001-07	1981-90	1991-2000	2001-07
Angola	1.8	1.3	12.9	-1.0	-1.6	9.5	-1.5	1.1	-2.0	0.4	-2.7	11.6
Benin	1.6	4.5	4.1	-2.8	0.3	0.5	-6.6	-3.9	-1.2	3.8	4.2	1.7
Botswana	10.6	6.4	5.1	7.4	3.0	3.8	4.7	4.1	4.8	2.7	-1.1	-1.0
Burkina Faso	3.0	5.3	5.6	0.4	2.2	2.0	2.0	1.4	-0.2	-1.6	0.8	2.2
Burundi	4.5	-1.7	2.8	0.8	-2.9	-1.4	1.0	-0.7	-1.1	-0.1	-2.2	-0.3
Cameroon	3.3	1.4	3.6	0.7	-1.5	1.1	1.1	-2.9	-0.2	-0.4	1.3	1.3
Cape Verde	5.2	6.8	6.5	2.8	3.5	2.9	8.9	4.0	5.2	-6.1	-0.5	-2.3
Central African Rep.	1.8	1.0	0.5	-0.7	-1.5	-1.2	0.9	-1.1	-1.5	-1.6	-0.4	0.2
Chad	4.4	2.8	10.5	0.2	-0.8	6.4	24.0	5.7	11.8	-23.8	-6.5	-5.3
Comoros	2.7	1.1	2.2	-0.1	-1.5	-0.4	1.5	0.9	-1.1	-1.6	-2.4	0.7
Congo, Dem. Rep. of	0.7	-5.6	4.7	-2.2	-8.1	1.8	…	-4.3	-1.7	…	-3.9	3.4
Congo, Republic of	5.8	1.4	3.5	2.6	-1.6	1.0	1.5	0.9	1.6	1.1	-2.5	-0.6
Côte d'Ivoire	1.0	3.1	0.4	-3.1	0.1	-1.6	-4.8	-2.2	-2.2	1.8	2.4	0.6
Equatorial Guinea	2.8	31.6	22.5	-1.8	28.4	19.8	10.2	24.4	15.2	-11.9	4.0	4.7
Eritrea	…	…	1.9	…	…	-2.5	…	…	…	…	…	…
Ethiopia	1.9	2.9	7.1	-1.8	-1.1	3.3	1.3	-2.1	2.0	-3.1	1.0	1.3
Gabon	1.6	1.7	2.2	-1.0	-1.1	-0.2	-1.4	-1.9	-0.8	0.4	0.8	0.7
Gambia, The	3.4	4.2	4.9	-0.2	0.4	1.6	-2.5	-1.2	-1.1	2.2	1.5	2.7
Ghana	2.2	4.5	5.4	-1.0	1.2	2.8	…	8.9	4.1	…	-7.7	-1.3
Guinea	3.1	4.1	2.7	0.4	0.9	0.6	4.0	3.0	3.3	-3.6	-2.1	-2.7
Guinea-Bissau	2.4	0.9	0.5	0.0	-1.9	-2.2	5.9	-0.9	-4.1	-5.8	-1.0	1.9
Kenya	4.4	1.7	4.5	0.5	-1.9	1.6	0.7	0.1	2.0	-0.3	-2.0	-0.4
Lesotho	4.5	3.8	3.8	2.3	1.9	2.9	2.6	3.9	-0.7	-0.3	-2.0	3.6
Liberia	…	…	-1.0	…	…	-3.6	…	…	…	…	…	…
Madagascar	0.5	1.7	3.3	-2.4	-1.3	-0.4	0.1	-0.5	1.8	-2.4	-0.8	-2.2
Malawi	2.2	3.4	3.8	-0.9	1.2	1.4	-2.1	-2.8	1.8	1.2	3.9	-0.5
Mali	3.0	3.6	5.7	1.0	1.0	2.4	6.7	2.2	0.8	-5.7	-1.2	1.6
Mauritania	2.4	2.9	4.6	-0.3	-0.2	1.3	0.9	0.5	9.6	-1.2	-0.7	-8.3
Mauritius	4.8	6.0	3.6	2.8	4.4	2.4	3.9	5.4	3.1	-1.2	-1.0	-0.7
Mozambique	0.1	6.5	8.6	-0.2	3.0	6.4	4.2	3.4	2.9	-4.4	-0.4	3.5
Namibia	-1.2	3.9	5.1	-4.9	0.7	3.0	-4.4	-1.1	0.9	-0.5	1.8	2.1
Niger	0.0	1.0	5.3	-2.8	-2.6	1.7	-4.2	-4.8	0.6	1.3	2.2	1.2
Nigeria	2.4	1.9	9.6	-0.1	-0.9	6.8	-0.1	-1.3	2.1	0.1	0.4	4.6
Rwanda	2.2	0.7	6.7	-0.8	-0.7	3.6	3.0	0.7	2.7	-3.8	-1.3	0.9
São Tomé & Príncipe	-1.5	1.5	6.4	-3.3	-0.6	3.6	…	…	…	…	…	…
Senegal	2.6	3.1	4.4	-0.2	0.2	1.3	2.9	1.6	2.9	-3.1	-1.4	-1.6
Seychelles	3.6	4.5	1.8	1.3	3.4	-1.6	3.2	6.1	-1.1	-1.9	-2.7	-0.5
Sierra Leone	0.8	-7.6	11.7	0.3	-8.3	8.3	-1.8	-3.2	-2.2	2.1	-5.1	10.6
Somalia	…	…	…	…	…	…	…	…	…	…	…	…
South Africa	1.5	1.8	4.2	-1.4	-1.2	1.4	-1.8	-2.2	0.0	0.4	1.0	1.4
Sudan	2.5	3.5	7.3	1.0	0.3	4.6	…	…	…	…	…	…
Swaziland	8.2	2.9	2.5	4.7	-0.5	0.9	…	-1.2	-0.2	…	0.7	1.1
Tanzania	3.3	2.9	7.0	0.1	0.0	4.4	-0.4	1.6	7.6	0.4	-1.6	-3.2
Togo	1.7	0.9	1.7	-1.7	-2.4	-1.4	-5.3	-5.7	-4.4	3.6	3.3	3.0
Uganda	3.6	6.2	7.5	0.2	3.1	4.0	…	9.6	6.6	…	-6.5	-2.6
Zambia	1.0	-0.2	5.2	-3.1	-2.7	3.2	-4.8	-4.2	0.2	1.7	1.5	3.0
Zimbabwe	4.4	0.6	-5.2	0.1	-1.7	-6.4	-0.9	1.3	-1.3	1.0	-3.0	-5.1

Source: IMF's WEO and World Bank's WDI databases.

Table 2: Growth Panel Regressions for SSA [1 2 3]

Dependent variable is average GDP growth per capita of four-year periods over 1971-2006.						
	OLS		2SLS [4]		GMM [5]	
Explanatory variables	1971-2006	1991-2006	1971-2006	1991-2006	1971-2006	1991-2006
Init_Inc	-2.74	-7.24	-2.38	-6.20	-1.30	-5.70
	(-4.12) ***	(-2.6) ***	(-1.94) *	(-2.48)	(-0.48)	(-1.21)
Init_Life_Exp	0.03	-0.13	0.05	-0.04	-0.18	0.02
	(0.68)	(-1.08)	(0.76)	(-0.33)	(-0.72)	(0.1)
Gov_Bal	0.11	0.16	0.12	0.07	0.17	0.16
	(1.62)	(1.59)	(2.65) ***	(0.69)	(2.02) **	(1.26)
Infl_Avg	-0.02	0.00	0.03	0.03	0.00	0.00
	(-1.37)	(3.36) ***	(1.26)	(1.02)	(1.97) **	(2.26) **
Open_Trade	0.51	3.71	0.26	2.55	1.61	1.00
	(0.72)	(2.44) ***	(0.34)	(1.78) *	(0.89)	(0.73)
CPIA	0.43	0.49	0.40	-0.63	1.65	0.28
	(0.75)	(0.36)	(0.98)	(-0.64)	(1.32)	(0.23)
War	-0.87	-1.75	-2.14	-3.65	1.85	-0.92
	(-0.97)	(-0.90)	(-2.72) ***	(-2.18) **	(1.45)	(-0.58)
ODA_Aid	0.07	0.17	0.16	0.38	0.14	0.22
	(1.50)	(1.65)	(1.86) *	(2.01) **	(1.08)	(1.39)
ODA_Aid Square					0.00	0.00
					(-1.17)	(-0.89)
Summary statistics						
Adjusted R^2	0.25	0.45	0.28	0.43		
Observations	226	133	268	136	265	132

[1] Includes both country and time fixed effects.

[2] Numbers in paranthesis are robust t-statistics. * indicates significance at 10 percent level; ** indicates significance at 5 percent level; and *** indicates significance at 1 percent level.

[3] Excludes small islands (Cape Verde, Comoros, Sao Tome and Principe, and Seychelles) for which many dat are not available.

[4] Based on the instrumentalization of aid described in Clemens et al. (2004).

[5] System GMM.

Table 3. Growth Acceleration Episodes in SSA, 1980-2007 1/

	Growth Threshold		
	1.5 percent	2.5 percent	3.5 percent
Angola	2002	2002	2002
Benin	-	-	-
Botswana	1985, 1995	1985, 1995	1985, 1995
Burkina Faso	1984, 1994	1994	-
Burundi	-	-	-
Cameroon	-	-	-
Cape Verde	1992	1992	1992
Central African Rep.	-	-	-
Chad	1997	1997	1997
Comoros	-	-	-
Congo, Dem. Rep. of	-	-	-
Congo, Republic of	1984	1984	1984
Côte d'Ivoire	-	-	-
Equatorial Guinea	1988	1988	1988
Eritrea	-	-	-
Ethiopia	2004	2004	2004
Gabon	-	-	-
Gambia, The	-	-	-
Ghana	2001	2001	-
Guinea	-	-	-
Guinea-Bissau	-	-	-
Kenya	2004	-	-
Lesotho	1984, 2000	1984, 2003	1987, 2003
Liberia	-	-	-
Madagascar	-	-	-
Malawi	1993, 2003	-	-
Mali	1985, 1996	1986, 1996	-
Mauritania	2003	-	-
Mauritius	1986	1986	1986
Mozambique	1987, 1996	1996	1996
Namibia	2002	2002	2002
Niger	2001	-	-
Nigeria	2000	2000	2001
Rwanda	2001	2001	2001
São Tomé & Príncipe	1998	1999	2001
Senegal	1997	-	-
Seychelles	1984	1984	1985
Sierra Leone	2001	2001	2001
Somalia	-	-	-
South Africa	-	-	-
Sudan	1986, 1997	1986, 1997	1997
Swaziland	1984, 2004	1984	1984
Tanzania	1996	1996	1999
Togo	-	-	-
Uganda	1992	1992	1992
Zambia	2001	2001	-
Zimbabwe	-	-	-
Total accelerations	37	28	22
Excluding islands	34	25	19

1/ The filter to generate accelerations uses (i) average growth over a 7 year period relative to the previous 4 years should be higher than 2 percentage points, and (ii) a threshold of at least 1.5, 2.5, or 3.5 percent growth during the 7 year period.

Table 4. Predictability of Growth Accelerations in SSA during 1980-2007 [1]

Proportion of growth accelerations preceeded or accompanied by:	
TOT [2]	6.8%
Economic liberalization [3]	36.0%
War end [4]	20.5%
Improvement in democracy [5]	31.8%
Deterioration in democracy [5]	13.6%
Aid [6]	46.5%
Proportion of occurances in the column variable accompanied or followed by growth accelerations:	
TOT [2]	4.1%
Economic liberalization [3]	39.1%
War end [4]	42.9%
Improvement in democracy [5]	43.8%
Deterioration in democracy [5]	38.9%
Aid [6]	29.4%

[1] A five year lag is allowed between a change in the underlying determinant and a growth acceleration. The timing of the growth acceleration is the three year window centered on the initiation dates in Table 2.

[2] The underlying variable is a dummy variable that takes the value 1 whenever the change in the terms of trade from year t to t-4 is in the upper 10 percent of the entire sample.

[3] Measured by the Sachs-Warner, and Wacziarg-Welch indexes that capture changes in economy's openness to trade. The indicator is a dummy that takes value 1 during the first five years of a transition towards "openness," and 0 otherwise.

[4] The underlying value is a dummy variable that takes the value 1 for the five-year period beginning with the cessation of an armed conflict, and 0 otherwise.

[5] Improvement (deterioration) in democracy take the value 1 during the five-year period beginning with a positive (negative) change in the polity2 score from the Polity IV dataset.

[6] An increase in aid is considered if the three-year average exceeds that of the previous period by 3 percentage points of GDP.

Table 5. Probit Analysis of Growth Accelerations in SSA [1] [2]

Dependent variable is a dummy variable taking value 1 when growth accelerates and 0 otherwise [3]									
	Growth Threshold								
	1.5 percent			2.5 percent			3.5 percent		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
War_End	0.94	0.58	0.54	1.17	0.84	0.72	2.57	1.14	0.96
	(3.67)***	(2.99)***	(3.04)***	(4.38)***	(4.21)***	(3.99)***	(5.60)***	(5.67)***	(5.38)***
Higher_Dem	0.59	0.34	0.36	0.64	0.44	0.42	0.39	0.05	0.06
	(3.12)***	(2.45)**	(2.73)***	(3.04)***	(2.95)***	(2.97)***	(1.09)	(0.27)	(0.32)
Trade_Lib	-0.06			0.16			0.68		
	(-0.31)			(0.72)			(2.08)**		
TOT	0.51	0.15		0.60	0.14		1.80	0.35	
	(2.10)**	(0.82)		(2.17)**	(0.70)		(3.62)***	(1.77)*	
Aid	0.29	0.19		0.16	0.12		-0.37	-0.14	
	(1.58)	(1.41)		(0.76)	(0.77)		(-1.00)	(-0.81)	
Observations	547	958	1,082	547	958	1082	547	958	1082
Growth episodes included	15/34	31/34	33/34	11/25	23/25	25/25	6/19	17/19	19/19
Pseudo R^2	0.10	0.04	0.03	0.16	0.06	0.04	0.47	0.09	0.06

[1] Excludes small islands (Cape Verde, Comoros, Sao Tome and Principe, and Seychelles) for which most data series are not available.

[2] Numbers in paranthesis are robust t-statistics. * indicates significance at 10 percent level, ** indicates significance at 5 percent level; and *** indicates significance at 1 percent level.

[3] An acceleration episode is identified by a filter that has the following criteria: (i) growth per capita in a 7 year period has to be higher than the previous 4 years by at least two percentage points; (ii) growth during the same 7 year period has to exceed a certain threshold (1.5 percent, 2.5 percent, or 3.5 percent); and (iii) level of output per capita during the 7 year period has to be higher than the previous 4 years to make sure that the increase is not merely due to a recovery from a previous decline.

Chapter 3: Political Budget Cycles in SSA

Introduction

As discussed in Chapter 1, Sub-Saharan Africa has made significant strides towards democracy since the early 1990s, with the number of democracies in the continent increasing steadily over the last decade. In addition, virtually all SSA countries allow now opposition parties to challenge incumbents in popular elections, and the number of cases when popular opposition parties or coalitions have won multi-party elections is gradually growing (e.g. Benin, Ghana, Kenya, Mali, Niger, and Senegal).

Some have expressed concern, however, that while the introduction of political competition may have stayed the hand of predatory governments, it has probably failed to inspire them to manage the economy better. A study by Block et. al. (2003), for example, suggests that multiparty presidential elections in Africa are associated with: (i) higher government consumption in GDP; (ii) higher rate of money growth; and (iii) higher inflation and exchange rate devaluations. The study also suggests that while the relationship between electoral competition and macroeconomic distortions peaks with the so-called founding elections (the election that occurred at the time of transition from authoritarian rule), it is nonetheless present, albeit at a lesser magnitude in successive elections. In view of these findings, Bates (2006) wonders whether governments that are subject to electoral risk may be less willing to adhere to macroeconomic (particularly fiscal) discipline.[10]

[10] See Bates, R., 2006, "Beyond the Ballot Box" http://www.imf.org/external/pubs/ft/fandd/2006/12/bates.htm.

Recent cross-section studies on political budget cycles in new democracies outside SSA are consistent with the Block et al findings. Drazen and Brender (2005), for example, find that there is a significant political budget cycle in new democracies, but becomes less strong over time, as voters gain more experience with elections.

Using macroeconomic data and presidential elections results for the period 1980-2005, this paper investigates the following for the SSA:

- whether competitive elections are associated with higher fiscal deficits and, if yes, what is the main channel through which this takes place (i.e., higher spending, lower taxes, or a combination of the two);[11]

- whether, as Africa's democracies consolidate over time, the magnitude of the political budget cycles in the continent tends to decline (as found by Drazen and Brender for new democracies); and

- whether re-election of incumbents is positively correlated with higher fiscal deficits during the run-up to election or their term in office.

[11] Block et. al (2003) argue, for example, that incumbents in transition elections are likely to face fewer constraints in the form of legislatures, independent central banks, and a free press for increased government spending to solidify their basis of support. This reasoning suggests that we should see evidence of larger opportunistic political budget cycles in "founding elections."

Some stylized facts

As discussed in Chapter 1, the number of democracies in SSA has increased steadily since the 1990s, with about half of SSA countries currently classified as democracies.

Reflecting this move toward democracy, elections have become more regular in SSA in recent years (Table 1). In the 37 SSA countries that elect the president by popular vote, there were 35 presidential elections during 1980-1990 (an average of about 12 years between presidential election per country), and 99 presidential elections during 1991-2005 (an average of about 6 years between presidential elections per country).

Not only have the number of elections increased, but elections have also become more competitive. First, in all the 37 SSA countries that elect the president directly, the opposition parties are now allowed to contest the incumbent in elections.[12] Second, while no opposition candidate won over an incumbent during 1980-1990 (in 35 presidential elections), during the period 1991-2006 opposition candidate won in 32 cases (out of 99 presidential elections during the period, or 30 percent of the cases). Of these, 15 times the challenger won against the incumbent president, and 17 other times against the candidate of the same party as the incumbent (such as in the case when the term limits were binding).

The fiscal deficit in SSA countries in recent years has, on average, been significantly lower than in the 1980s and 1990s. In the 35 SSA countries that elect the president

[12] In many of these countries, however , elections are not considered completely "free and fair" and, on the basis of the World Bank's PolityIV database, as of 2004 less than half of them (17 countries out of a total of 37 countries that elect the president directly) were classified as democracies (i.e., had a nonnegative polity score).

directly for which fiscal data for the period 1980-2005 is available, the fiscal deficit during the period 2001-2005 averaged 2.7 percent of GDP, compared to about 5.1 percent of GDP during the period 1980-2000 (see Table 2). As can be seen from Figure 2 and Table 2, this decline in fiscal deficits has been observed in most SSA countries. Only in 10 countries (Burkina Faso, Chad, Eritrea, Ethiopia, Gambia, Guinea Bissau, Mauritania, Mauritius, Namibia, and Swaziland), representing less than one fourth of SSA countries in this sample, was the average fiscal deficit during 2001-2005 higher than during 1980-2000.

The fiscal deficit in competitive presidential elections has, on average, been higher than in the year preceding the election. As shown in Table 2, during the period 1980-2000 the fiscal deficit in years of presidential elections averaged 5.9 percent of GDP (versus an average deficit of 5.1 percent of GDP during the same period), and during 2001-2005 the deficit in presidential elections years averaged 3.9 percent of GDP (versus an average deficit of 2.7 percent of GDP for the same period).

The average fiscal deficit in "founding" elections—i.e., the first election in which opposition presidential candidates can challenge the incumbent—was 5.8 percent of GDP, higher than the 4.7 percent of GDP average in all competitive elections.

Does Evidence Support Hypothesis of Political Budget Cycles?

Estimation

As in Brender and Drazen (2005), the regression to be used in this analysis on whether elections are associated with fiscal policy cycles has the following form:

$$f_{i,t} = \sum_k b_k * f_{i,t-k} + \sum c' x_{i,t} + d * Elec_t + \mu_i + \varepsilon_{i,t}$$

Where $f_{i,t}$ is a fiscal indicator in country i in year t; $x_{i,t}$ is a vector of control variables (which will include (i) population between 15 and 64 years of age, (ii) population 65 years of age and over, (iii) real GDP per capita, and (iv) trade relative to GDP; $Elec_t$ is an electoral dummy; and μ_i is a country fixed effect. The electoral dummy takes the value 1 in the year a presidential election takes place when such an election is held in the second half of the year, and in the previous year when it is held in the first half of the year, and zero otherwise.[13]

Elections dates for presidential elections in each country are presented in Table 1, with dates in bold indicating the first time multiparty presidential elections were held in that country.

The fiscal data (including fiscal deficit, revenues and expenditures) were obtained from the WEO database; trade share and population composition into 15-64 years of age and over 65 years of age from World Bank's World Development Indicators; whereas election information from a variety of sources, including International

[13] The sensitivity of results for alternative definitions of the election year is also discussed.

Institute for Democracy and Electoral Assistance (IDEA),[14] Binghamton University's Election Results Archive (ERA),[15] African Elections Database (AED),[16] and Adam Carr's Election Archive.[17]

As in Block et. al (2003), the analysis is restricted to presidential elections in SSA for two main reasons. First, given that the autocratic legacy in most SSA countries the political power is usually concentrated in the hands of the leader, presidential elections in SSA have significantly higher importance than parliamentary elections. Second, presidential terms in SSA countries are for fixed terms, reducing the concern of the potential bias of estimates if elections are endogenous (i.e., that leaders can call early elections when they are still popular).

Unlike Brender and Drazen (2005), who restrict their study to democracies only, all presidential elections (including in non-democracies) where the president is elected by popular vote are included in the analysis below, provided that the opposition parties could challenge incumbent regimes. One strong reason for this choice is that in most cases in which the opposition president was able to unseat the incumbent in SSA in early 1990s were not considered democracies. Restricting the study to SSA democracies only would reduce considerably the number of observations.[18]

[14] http://www.idea.int/vt/index.cfm

[15] http://www.binghamton.edu/cdp/era/index.html

[16] http://africanelections.tripod.com/

[17] http://psephos.adam-carr.net/

[18] As noted above, less than half of the SSA countries that elect the president directly were considered as democracies in 2004, and many of them have become democracies only recently.

From the 37 SSA countries that elect the president by popular vote, fiscal data are not available for two of them (Liberia and Sao Tome and Principe). Four small or island economies for which data is available are also excluded (Cape Verde, Comoros, Equatorial Guinea, and Seychelles), given concerns on the quality of their economic statistics, as is Zimbabwe, given the lack of true multiparty competition in presidential elections in that country. The data set is for the period 1980-2005. During this period, there were a total of 108 presidential elections in the 30 SSA countries, and in 86 of these cases the opposition parties were allowed to contest the incumbent.

Results

As summarized in Table 3, columns (1) and (4), panel least square regressions with country fixed effects suggest that presidential elections are associated with higher budget deficits in Africa. In years of competitive presidential elections the fiscal deficit is higher by about 0.8 percentage points of GDP relative to non-election years during the period 1980-2005, and by about 1.2 percentage points of GDP during the period 1990-2005. Higher deficits seem to be driven by higher fiscal spending, rather than lower taxes. As can be seen in Table 3, the magnitude of the effect of presidential elections on (higher) fiscal spending, columns (2) and (5), is similar to that on (lower) general government fiscal balance in the balance equation. In addition, there does not seem to any election cycle on revenues (the coefficients of the dummy variable on election in the revenue equations, columns (3) and (6), are not statistically different from zero).

There also seems to be support for the hypothesis that, as voters and politicians become more familiar with elections and as checks and balances improve with each subsequent election, the magnitude of political budget cycle declines. As can be seen in Table 4, panel regressions with fixed country effect suggest that when separate dummy variables are introduced for the first, second, and later multiparty presidential elections, only the variable for the first such election is statistically significant, whereas the later elections are not. This is the case for two different specification—i.e., one in which each of the first two multiparty elections were assigned separate dummy variables and the rest of the elections with another, columns (2) and (4), and another specification where the first multiparty election was assigned a separate dummy variable and the rest of the elections with another, columns (1) and (3). Both specifications were tested separately for the periods 1980-2005 and 1990-2005.

Robustness

This section discusses a number of robustness tests to the results of the previous section, namely: (i) GMM tests given that the lag of the dependent variable is included in the specification, and thus the OLS results are potentially biased; (ii) applying an alternative definition to the election year; and (iii) discussing the results of OLS regressions with fixed country effects on sub samples of the overall sample that was used in the previous section.

GMM Tests

The results of GMM regressions using the Arellano and Bond approach (1991) seem to support OLS results with fixed country effects discussed in the previous section.

As can be seen from Table 5, GMM estimates suggest that the impact of presidential elections on the fiscal deficit is the same as that obtained from the OLS (Table 3) for the period 1980-2005, and broadly similar for the period 1990-2005.

Definition of Election Year

OLS regressions using an alternative definition for the election year were also run. Under this alternative definition, the electoral dummy takes the value 1 in the same calendar year the presidential election takes place when the election is held during May-December of that year (compared to the period July-December in the results discussed above), and in the previous year when it is held in the first quarter of the year (compared to the first half of the year in the results discussed above). As can be seen from Table 5, results for the balance equation for the period 1980-2005 are very similar. This is true for the expenditure and revenue equations as well, although the results are not shown in Table 5.

Using Sub samples of the Overall Sample

To see whether results are sensitive to a particular small set of countries, separate regression were run by dividing the overall sample of 30 countries into 3 sub samples: (i) the first 15 countries; (ii) the last 15 countries; and (iii) the middle 20 countries. As shown in Table 5 results are qualitatively the same, although in some cases the estimated coefficients are not statistically significant. Depending on whether the period is 1980-2005 or 1990-2005, the fiscal deficit in years of presidential elections is between 0.7 and 1.3 percentage points of GDP higher than in non-election years.

Do political budget cycles affect chances of reelection?

Using a panel of 74 countries over the period 1960-2003, Brender and Drazen (2005) found no evidence that deficits help reelection in any group of countries—being them developed of less developed, new and old democracies, countries with different government or electoral systems, and countries with different levels of democracy.[19]

This section examines whether these findings hold for presidential elections in SSA. More specifically, this section asks whether either (i) increased deficits during an election year or (ii) loose fiscal policies during the term in office or in the election year, raise the probability of reelection of incumbent presidents (or of candidates from the same party as the incumbent when they do not, or are not allowed to) run for election. To explore these questions data on 108 presidential elections during the period 1980-2005 are used, in the same set of 30 SSA countries in which the president is elected directly.

The methodology used here in similar methodology to the one in Brender and Drazen (2005). More specifically the analysis below uses a probit regression analysis, with variable REELECT being a binary variable that takes value 1 if incumbent is reelected and 0 otherwise. Information on whether incumbent is reelected or not is collected from the same databases noted above. On this basis I have put together Table 6 with all SSA presidents since the 1970s, and combined this information with that in Table 1 on the timing of presidential elections and other information on presidential candidates in each election for all 30 countries. This was used to

[19] The countries in their study did not include any country from the Sub-Saharan Africa.

determine whether the incumbent ran for reelection and, if yes, whether he was reelected or not, and if the incumbent did not run whether the candidate from the same party was elected or not. In the analysis below two definition of REELECT are used, similar to the treatment in Drazen and Brender (2005). More specifically:

"Narrow" definition: only competitive elections in which the incumbent president is running for reelection are included. In the sample of 30 SSA countries for the period 1980-2005, incumbents ran for reelection in 69 competitive presidential elections (out of a total of 108 direct presidential elections during this period), and in 54 cases they won reelection (a rate of success of nearly 80 percent)..

"Expanded" definition: cases in which the incumbent cannot run due to legal term limits are added, with the candidate from the same party treated as the incumbent. Doing this adds 17 presidential elections compared to the narrow definition, of which 7 were won by challengers (a success rate of about 40 percent).

Measures of fiscal performance include two variables—BALCH_term, and BALCH_ey. The first variable is calculated as the difference of average fiscal deficit in the two years before election with that in the two years before that. The second variable is calculated as the difference in the fiscal deficit in the election year with that in the pre-election year. Variables on real economic growth (GDP_gr_term and GDP_gr_ey) and inflation (infl_term and infl_ey) are calculated in the same way.

Probit estimation is used to examine the effect of fiscal deficits on the probability of reelection. Results in Table 7 suggest that higher fiscal deficits both during the election year and the leader's term in office do not bring reward for incumbent

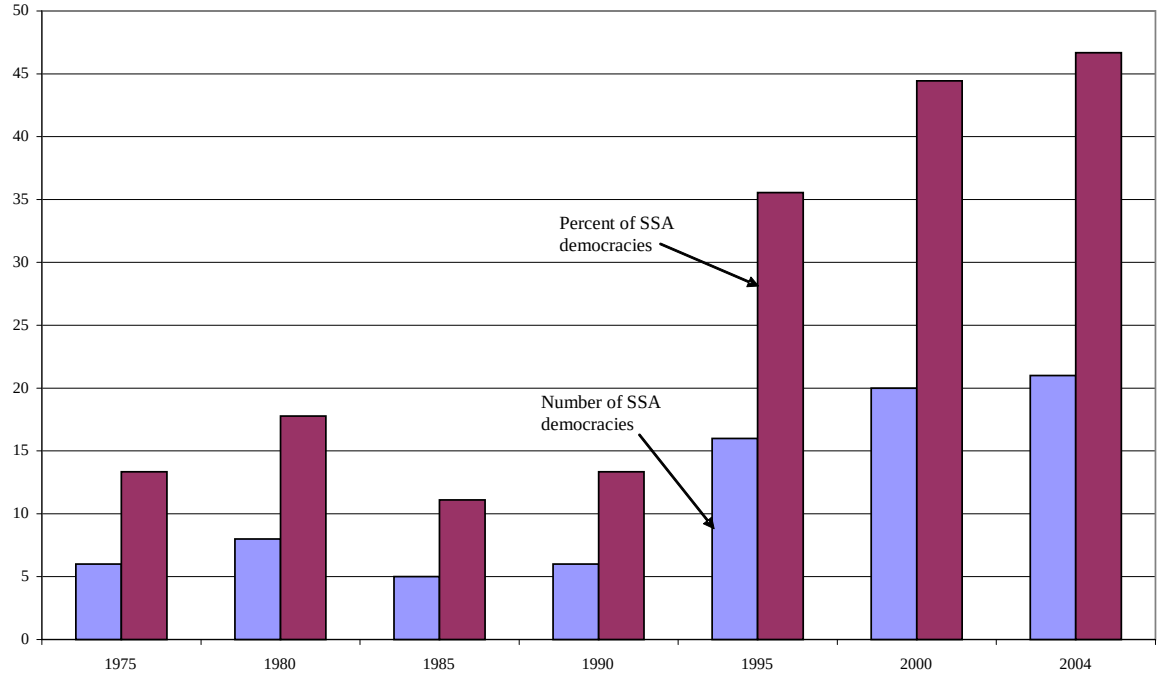
presidents that create them, or for the candidates of the same party as the incumbent when the latter does not or cannot run for reelection. Actually, in the narrow sample for all presidential elections results suggest that better fiscal balances in the election year increase incumbent's reelection chances.

Conclusions

Results of this chapter suggest that while there is evidence of significant political budget cycle in SSA during 1980-2005, these results are driven by the impact of "founding" elections. In addition, fiscal deficits in SSA in recent years have on average been significantly lower than during the 1980s and 1990s. Together, these seem to suggest that, contrary to the fears expressed by some (including recently by Bates), increased democracy in SSA has not only reduced the predatory behavior of governments in the continent, but also contributed to improved macroeconomic management. Thus, while "founding" elections in SSA presented both the greatest incentives and fewest constraints for electoral economic manipulation, as voters in the continent have become more experienced with elections, the scope for its politicians to induce political budget cycles at the aggregate level has been gradually diminished. It may very well be that, as found in two recent papers by Drazen and Eslava, election year political manipulation does not take place necessarily through a higher fiscal deficit, but can also take the form of a change in the composition of government spending to target a fraction of voters at the expense of the others while keeping the overall deficit broadly unchanged.

The findings in this paper, however, seem to indicate that higher fiscal deficits during election years do not seem to improve reelection chances of incumbents, and this finding is robust to the definition of election year. Actually, similar to what was found by Drazen and Brender for developed countries and established democracies, the results in one the four regressions shown in Table 7 (the narrow sample for all presidential elections) suggest that better (not worse) fiscal balances in the election year increase incumbent's reelection chances.

Figure 1. Sub-Saharan Africa: Democracy Indicators, 1975-2004 1/



1/ Countries with polity2 indicator from the World Bank's CPI database with a value higher than 0 are classified as democracies. Polity2 takes values from -10 (least democratic) to +10 (most democratic).

Figure 2. Average Annual Fiscal Balance in Sub-Saharan Africa, 1980-2005

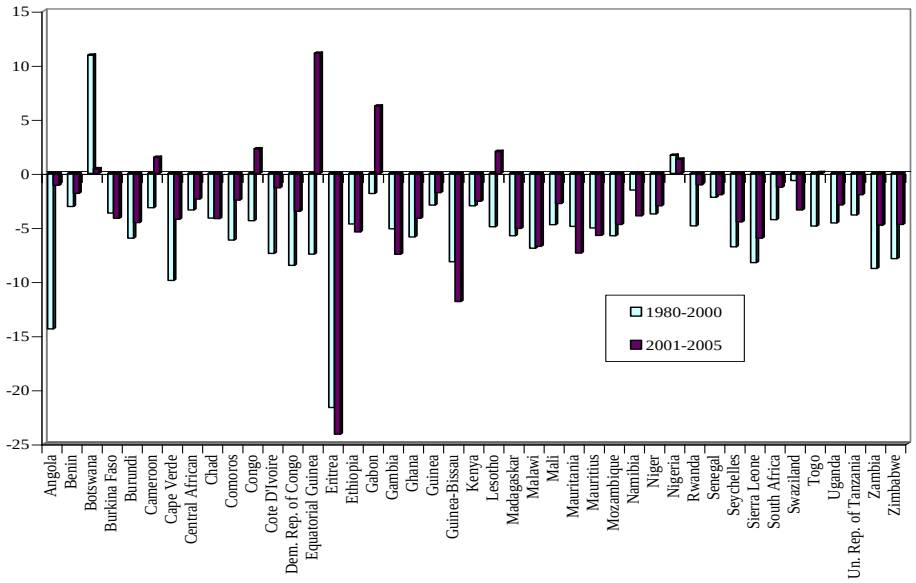


Table 1: Presidential Elections in Sub-Saharan Africa, 1975-2005 1/

Country	Presidential Election Dates
Angola	29 September 1992 (I).
Benin	**24 March 1991 (O,I),** 18 March 1996 (O,I), 4 March 2001 (I), 5 March 2006 (O,S)
Botswana	None
Burkina Faso 2/	**1 December 1991 (I),** 15 November 1998 (I), 13 November 2005 (I).
Burundi	31 August 1984 (I), **1 June 1993 (O,I)**.
Cameroon	4 April 1980 (I), 14 January 1984 (I), 24 April 1988 (I), **11 October 1992 (I)**, 12 October 1997 (I), 11 October 2004 (I).
Cape Verde	**17 February 1991 (O,I)**, 11 February 2001 (O,S), 12 February 2006 (I).
Central African Republic 3/	15 March 1981 (I), 25 October 1992 (I), **22 August 1993 (O,I)**, 19 September 1999 (I), 13 March 2005 (I).
Chad	**2 June 1996 (I)**, 20 May 2001 (I), 3 May 2006 (I).
Comoros	22 October 1978 (I), 30 September 1984 (I), **11 March 1990 (I)**, 6 March 1996 (I), 17 March 2002 (I), 14 May 2006 (O,S).
Congo	**2 June 1992 (O,I)**, 10 March 2002 (I).
Côte d'Ivoire	12 October 1980 (I), 27 October 1985 (I), **28 October 1990 (I)**, 22 October 1995 (I), 22 October 2000 (O,I).
Democratic Republic of the Congo	December 1977 (I), September 1982 (I), **30 July 2006 (I)**.
Equatorial Guinea 4/	25 June 1989 (I), **25 September 1996 (I)**, 15 December 2002 (I).
Eritrea	None.
Ethiopia	None.
Gabon	30 December 1979 (I), 9 November 1986 (I), **5 December 1993 (I)**, 6 December 1998 (I), 27 November 2005 (I).
Gambia	**4 May 1982 (I)**, 11 March 1987 (I), 29 April 1992 (I), 26 September 1996 (I), 18 October 2001 (I).
Ghana	18 June 1979 (O,I), **3 November 1992 (I)**, 7 December 1996 (I), 28 December 2000 (O,S), 7 December 2004 (I).
Guinea	9 May 1982 (I), **19 December 1993 (I)**, 14 December 1998 (I), 21 December 2003 (I).
Guinea-Bissau	**7 August 1994 (I)**, 28 November 1999 (O,S), 19 June 2005 (O,S).
Kenya	**29 December 1992 (I)**, 29 December 1997 (I), 27 December 2002 (O,S).
Lesotho	None.
Liberia	15 October 1985 (I), **19 July 1997 (O,S)**, 11 October 2005 (O,S).
Madagascar	7 November 1982 (I), 12 March 1989 (I), **25 October 1992 (O,I)**, 3 November 1996 (O,I), 16 December 2001 (O,I).
Malawi	**17 May 1994 (O,I)**, 15 June 1999 (I), 20 May 2004 (S).
Mali	19 June 1979 (I), 9 June 1985 (I), **26 April 1992 (O,S)**, 4 May 1997 (I), 28 April 2002 (O,S).
Mauritania	**24 January 1992 (O,I)**, 12 December 1997 (I), 7 November 2003 (I).
Mauritius	None.
Mozambique	**27 October 1994 (I)**, 3 December 1999 (I), 1 December 2004 (S).
Namibia	**7 December 1994 (I)**, 30 November 1999 (I), 15 November 2004 (S).
Niger	**27 March 1993 (O,S)**, 7 July 1996 (O,I), 17 October 1999 (O,S), 16 November 2004 (I).
Nigeria	11 August 1979 (O,I), 6 August 1983 (I), 12 June 1993 (O,S), **27 February 1999 (O,I)**, 19 April 2003 (I).
Rwanda	24 December 1978 (I), 19 December 1983 (I), 19 December 1988 (I), **25 August 2003 (I)**.
Sao Tome and Principe	**3 March 1991 (O,S)**, 21 July 1996 (I), 29 July 2001 (S).
Senegal	**26 February 1978 (I)**, 27 February 1983 (I), 28 February 1988 (I), 21 February 1993 (I), 27 February 2000 (O,I).
Seychelles	**23 July 1993 (I)**, 20 March 1998 (I), 31 August 2001 (I).
Sierra Leone	March 1976 (I), 1 October 1985 (S), **26 February 1996 (O,S)**, 14 May 2002 (I).
Somalia	23 December 1986 (I).
South Africa	None.
Swaziland	None.
Togo	30 December 1979 (I), 21 December 1986 (I), **25 August 1993 (I)**, 21 June 1998 (I), 1 June 2003 (I), 24 April 2005 (S).
Uganda	**9 May 1996 (I)**, 12 March 2001 (I), 23 February 2006 (I).
United Republic of Tanzania	26 October 1980 (I), 27 October 1985 (S), 28 October 1990 (I), **29 October 1995 (S)**, 29 October 2000 (I), 14 December 2005 (S).
Zambia	12 December 1978 (I), 27 October 1983 (I), 26 October 1988 (I), **31 October 1991 (O,I)**, 18 November 1996 (I), 27 December 2001 (S).
Zimbabwe	March 1990 (I), 16 March 1996 (I), 9 March 2002 (I).

1/ Dates in bold indicate the first time when multiparty presidential elections were held in each SSA country. "I" denotes whether incumbent reelected, and "O,I" if opposition challenger wins running against incumbent, "O,S" if opposition challenger wins against a candidate from incumbents party, and "S" if candidate from the incumbent party wins (such as in the case of term limit for the incumbent).
2/ The opposition boycotted the 1991 elections but the elections was scheduled as a multiparty presidential election.
3/ The 1992 elections were annuled by the Supreme Court due to widespread regularities.
4/ The 1996 and 2002 elections are listed as "multiparty", although the incumbent won with over 97 percent of the vote in both cases. In 1996, the opposition boycoted the election.

Table 2. Fiscal Deficit in SSA Countries with Direct Presidential Elections, 1980-2005

	1980-2000			2001-2005		
	Average Fiscal Balance (% of GDP)		Number of	Average Fiscal Balance (% of GDP)		Number of
	During Whole Period	Pres Elec Only	Pres Elections	During Whole Period	Pres Elec Only	Pres Elections
Benin	-3.1	-3.0	3	-1.8	-2.5	1
Burkina Faso	-3.7	-1.7	2	-4.1	-4.9	1
Burundi	-6.0	-5.5	2	-4.5	-	0
Cameroon	-3.2	-4.2	4	1.5	-0.5	1
Cape Verde	-9.9	-11.4	2	-4.2	-6.3	1
Central African Republic	-3.4	-5.6	3	-2.4	-2.2	1
Chad	-4.1	-5.7	2	-4.2	-0.4	1
Comoros	-6.2	-6.6	3	-2.5	-1.8	2
Congo	-4.4	-13.1	1	2.3	-0.7	1
Cote D'Ivoire	-7.4	-5.7	5	-1.3	-	0
Dem. Rep. of Congo	-8.5	-5.2	1	-3.5	-	0
Equatorial Guinea	-7.5	-20.2	2	11.1	10.9	1
Gabon	-1.8	-10.2	3	6.2	9.4	1
Gambia	-5.1	-5.5	4	-7.5	-13.9	1
Ghana	-5.9	-8.8	3	-4.1	-3.1	1
Guinea	-2.9	-0.7	3	-1.8	-6.1	1
Guinea-Bissau	-8.2	-5.5	2	-11.8	-15.0	1
Kenya	-3.0	-4.7	2	-2.6	-3.9	1
Madagaskar	-5.8	-5.3	4	-5.1	-4.4	1
Malawi	-6.9	-6.3	2	-6.7	-6.5	1
Mali	-4.7	-3.8	3	-2.8	-3.2	1
Mauritania	-4.9	-3.1	2	-7.4	-11.8	1
Mozambique	-5.8	-3.2	2	-4.7	-4.3	1
Namibia	-1.5	-2.3	2	-3.9	-4.4	1
Niger	-3.7	-3.5	3	-3.0	-3.5	1
Nigeria	1.7	0.4	3	1.3	-4.2	1
Rwanda	-4.9	-4.3	2	-1.0	-2.5	1
Senegal	-2.2	-2.8	4	-2.0	-	0
Seychelles	-6.8	-8.8	2	-4.5	-9.9	1
Sierra Leone	-8.2	-6.7	2	-6.0	-8.8	1
Togo	-4.9	-6.5	3	0.1	0.3	2
Uganda	-4.6	-5.9	2	-2.9	-0.6	1
Un. Rep. of Tanzania	-3.8	-4.0	5	-2.0	-3.2	1
Zambia	-8.8	-6.6	4	-4.8	-7.2	1
Zimbabwe	-7.9	-8.8	2	-4.7	-7.0	1
SSA Average	-5.1	-5.9	3	-2.7	-3.9	1

Source: WEO database for fiscal data.

Table 3. The Political Budget Cycle in Sub-Saharan Africa, OLS Panel Estimates with Fixed Country Effects

	1980-2005			1990-2005		
	Multiparty Pres Elec Only			Multiparty Pres Elec Only		
	Balance	Exp	Rev	Balance	Exp	Rev
	(1)	(2)	(3)	(4)	(5)	(6)
Dummy for Presidential Elections	-0.81**	0.84	-0.02	-1.17***	1.46***	0.27
	(-2.02)	(1.55)	(-0.04)	(-2.99)	(3.2)	(0.74)
Lag of Dependent Variable	0.53***	0.58***	0.53***	0.44***	0.53***	0.58***
	(16.54)	(20.96)	(17.76)	(10.05)	(13.56)	(14.48)
GDP per capita	-1.04	2.48**	1.76*	-0.90	2.04	1.15
	(-1.33)	(2.33)	(1.68)	(-0.74)	(1.42)	(0.99)
Population between 15 and 64 years of age	0.39***	0.05	0.44**	0.59***	0.04	0.50***
	(2.92)	(0.29)	(2.52)	(3.34)	(0.21)	(2.95)
Population 65 and over years of age	-0.61	0.94	0.25	-2.44*	0.78	-1.12
	(-0.88)	(1.01)	(0.27)	(-1.89)	(0.52)	(-0.91)
Trade share to GDP	0.01*	0.01	0.03***	0.03	-0.01	0.02**
	(1.84)	(1.32)	(2.80)	(3.34)	(-0.82)	(2.44)
Adjusted R2	0.44	0.70	0.69	0.47	0.75	0.81
F-statistics	17.97	52.60	49.02	13.16	42.20	60.78
Durbin-Watson statistic	1.98	1.76	1.67	1.95	1.97	1.94
No of countries	30	30	30	30	30	30
Total panel	767	767	767	480	480	480

T-statistics are in parenthesis.
* denotes significance at 10 percent level, ** significance at 5 percent level, and *** significance at 1 percent level.

Table 4. Sub-Saharan Africa: Political Budget Cycle Over Time

	1980-2005		1990-2005	
	Balance (1)	Balance (2)	Balance (3)	Balance (4)
Elec_comp_n1	-1.62**	-1.62**	-1.91***	-1.90***
	(-2.41)	(-2.41)	(-2.98)	(-2.97)
Elec_comp_n2		0.01		-0.52
		(-0.15)		(-0.79)
Elec_comp_later	-0.41	-0.69	-0.81*	-1.04*
	(-0.86)	(-1.06)	(-1.73)	(-1.7)
Lag of Dependent Variable	0.53***	0.53***	0.44***	0.44***
	(16.48)	(16.48)	(10.03)	(10.03)
GDP per capita	-1.07	-1.05	-0.94	-0.91
	(3.83)	(-1.34)	(-0.78)	(-0.74)
Population between 15 and 64 years of age	0.38***	0.38*	0.57***	0.58***
	(2.82)	(2.87)	(3.21)	(3.25)
Population 65 and over years of age	-0.60	-0.61	-2.37*	-2.40*
	(-0.86)	(-0.87)	(-1.84)	(-1.86)
Trade share to GDP	0.01	0.01*	0.03***	0.03***
	(1.76)	(1.76)	(3.23)	(3.23)
Adjusted R2	0.44	0.44	0.47	0.47
F-statistics	17.56	18.08	12.89	12.53
Durbin-Watson statistic	1.98	1.98	1.96	1.96
No of countries	30	30	30	30
Total panel	767	767	480	480

T-statistics are in parenthesis.
* denotes significance at 10 percent level, ** significance at 5 percent level, and *** significance at 1 percent level.

Table 5. Robustness Tests of Political Budget Cycles in SSA

	GMM 1/		Alternative Definition of Elec. Year 2/		Subsamples: First 15 countries		Subsamples: Last 15 countries		Subsamples: Middle 20 countries	
	1980-2005	1990-2005	1980-2005	1990-2005	1980-2005	1990-2005	1980-2005	1990-2005	1980-2005	1990-2005
Dependent Variable: Deficit										
Dummy for Competitive Presidential Elections	-0.81***	-1.05**	-0.93**	-1.29***	-0.99	-1.23**	-0.72	-1.07**	-0.97*	-1.33**
	(-2.95)	(-2.10)	(-2.32)	(-3.28)	(-1.52)	(-2.01)	(-1.49)	(-2.25)	(1.80)	(-2.44)
Lag of Dependent Variable	0.52***	0.44***	0.53***	0.44***	0.55***	0.53***	0.45***	0.25***	0.52***	0.43***
	(36.79)	(7.73)	(16.59)	(10.07)	(12.36)	(8.77)	(9.59)	(3.95)	(13.08)	(7.79)
GDP per capita	-2.78***	-1.35	-1.05	-0.92	-2.33*	-4.4**	-0.08	2.59*	-0.82	-1.93
	(-2.79)	(-0.25)	(-1.34)	(-0.76)	(-1.91)	(-2.29)	(0.08)	(1.77)	(-0.72)	(-1.04)
Population between 15 and 64 years of age	0.67***	1.83	0.39***	0.59***	0.51***	0.55**	0.23	0.58**	0.38**	0.62***
	(2.97)	(1.10)	(2.93)	(3.34)	(2.62)	(2.18)	(1.25)	(2.28)	(2.29)	(2.71)
Population 65 and over years of age	-1.62	-3.26	-0.61	-2.39*	-1.59*	-2.35	2.54**	-1.08	-0.60	-3.53**
	(-1.15)	(-1.48)	(-0.87)	(-1.85)	(-1.75)	(-1.49)	(2.05)	(0.42)	(-0.69)	(-2.02)
Trade share to GDP	0.03**	0.00	0.01*	0.03***	0.01	0.04**	0.01	0.03**	0.01	0.03***
	(1.98)	(0.01)	(1.84)	(3.36)	(1.23)	(2.49)	(1.35)	(2.57)	(1.41)	(2.84)
Adjusted R2			0.44	0.47	0.43	0.53	0.47	0.39	0.42	0.47
F-statistics			18.03	13.27	15.24	14.51	17.64	8.55	15.74	12.48
Durbin-Watson statistic			1.97	1.93	1.90	1.80	2.08	2.11	1.93	1.92
No of countries	30	30	30	30	15	15	15	15	20	20
Total panel	762	480	767	480	384	240	384	240	508	320

1/ Arellano-Bond approach.
2/ Dummy variable takes value 1 in the year presidential election takes place if elections is held during April-December, and in the previous year if election held in January-March of the year.
T-statistics are in parenthesis.
* denotes significance at 10 percent level, ** significance at 5 percent level, and *** significance at 1 percent level.

Table 6. Sub-Saharan Africa: Presidents of the Republic, 1975-2005

	Name	Period	Party	Pres Elected Directly
Angola	António Agostinho Neto	11 Nov 1975 - 10 Sep 1979 (+)	MPLA	Y
	José Eduardo dos Santos	10 Sep 1979 -	MPLA	Y
Benin	Mathieu Kérékou	26 Oct 1972 - 4 Apr 1991	military/PRPB	Y
	Nicéphore Dieudonné Soglo	4 Apr 1991 - 4 Apr 1996	PRB	Y
	Mathieu Kérékou	4 Apr 1996 - 6 Apr 2006	FARD	Y
	Yayi Boni	6 Apr 2006 -	n/p	Y
Botswana	Seretse Khama	30 Sep 1966 - 13 Jul 1980 (+)	BDP	N
	Quett Ketumile Joni Masire	13 Jul 1980 - 31 Mar 1998	BDP	N
	Festus Gontebanye Mogae	1 Apr 1998 -	BDP	N
Burkina Faso	Blaise Compaoré	24 Dec 1991 -	ODP-MT, CDP	Y
Burundi	Michel Micombero	28 Nov 1966 - 1 Nov 1976 (+1983)	military/UPRONA	Y
	Jean-Baptiste Bagaza	2 Nov 1976 - 3 Sep 1987	military/UPRONA	Y
	Pierre Buyoya	3 Sep 1987 - 10 Jul 1993	military/UPRONA	Y
	Melchior Ndadaye	10 Jul 1993 - 21 Oct 1993 (+)a	FRODEBU	Y
	Cyprien Ntaryamira	5 Feb 1994 - 6 Apr 1994 (+)a	FRODEBU	Y
	Sylvestre Ntibantunganya	6 Apr 1994 - 25 Jul 1996	(acting to 1 Oct 1994)	Y
	Pierre Buyoya	25 Jul 1996 - 20 Apr 2003	UPRONA	Y
	Domitien Ndayizeye	30 Apr 2003 - 26 Aug 2005	FRODEBU (transitional)	Y
	Pierre Nkurunziza	26 Aug 2005 -	CNDD-FDD	Y
Cameroon	Ahmadou Babatoura Ahidjo	1 Jan 1960 - 6 Nov 1982 (+1989)	UC, UNC (1)	Y
	Paul Biya	6 Nov 1982 -	UNC, RDPC	Y
Cape Verde	Aristides Maria Pereira	5 Jul 1975 - 22 Mar 1991	PAIGC, PAICV	Y
	António Manuel Mascarenhas Gomes Monteiro	22 Mar 1991 - 22 Mar 2001	MPD	Y
	Pedro Verona Rodrigues Pires	22 Mar 2001 -	PAICV	Y
Central African Republic	David Dacko	20 Sep 1979 - 1 Sep 1981	UDC	Y
	André Dieudonné Kolingba	21 Sep 1985 - 22 Oct 1993	RDC	Y
	Ange-Félix Patassé	22 Oct 1993 - 15 Mar 2003	MLPC	Y
	François Bozizé	15 Mar 2003 -	military, n/p	Y
Chad	Hissène Habré	7 Jun 1982 - 1 Dec 1990	FAN, UNIR	Y
	Jean Alingue Bawoyeu	1 Dec 1990 - 2 Dec 1990	(interim)	Y
	Idriss Déby Itno	2 Dec 1990 -	MPS (5)	Y
Comoros	Ahmed Abdallah Abderemane	25 Oct 1978 - 26 Nov 1989		Y
	Said Mohamed Djohar	26 Nov 1989 - 29 Sep 1995	UDZIMA	Y
	Said Mohamed Djohar	26 Jan 1996 - 25 Mar 1996	UDZIMA	Y
	Mohamed Taki Abdoulkarim	25 Mar 1996 - 6 Nov 1998	(UNDC)	Y
	Tajiddine Ben Said Massounde	6 Nov 1998 - 29 Apr 1999	(interim)	Y
	Azali Assoumani	29 Apr 1999 - 20 Jan 2002	(military)	Y
	Hamada Madi Bolero	20 Jan 2002 - 26 May 2002	(interim)	Y
	Azali Assoumani	26 May 2002 - 26 May 2006		Y
	Ahmed Abdallah Sambi	26 May 2006 -		Y
Congo	Denis Sassou-Nguesso	8 Feb 1979 - 31 Aug 1992	PCT	Y
	Pascal Lissouba	31 Aug 1992 - 15 Oct 1997	UPADS	Y
	Denis Sassou-Nguesso	25 Oct 1997 -	PCT	Y
Côte d'Ivoire	Félix Houphouët -Boigny	7 Aug 1960 - 7 Dec 1993	PDCI-RDA	Y
	Aimé Henri Konan Bédié	7 Dec 1993 - 25 Dec 1999	PDCI-RDA	Y
	Robert Guéi	25 Dec 1999 - 25 Oct 2000	military	Y
	Laurent Gbagbo	26 Oct 2000 -	FPI	Y
Democratic Republic of the Congo	Joseph Kasavubu	1 Jul 1960 - 25 Nov 1965	ABAKO	Y
	Mobutu Sese Seko	25 Nov 1965 - 16 May 1997	military/MPR	Y
	Laurent-Désiré Kabila	17 May 1997 - 16 Jan 2001	AFDL	Y
	Joseph Kabila	17 Jan 2001 -	AFDL, n/p, PPRD	Y
Equatorial Guinea	Teodoro Obiang Nguema Mbasogo	12 Oct 1982 -	PDGE	Y
Eritrea	Issayas Afeworki	24 May 1993 -	PFDJ	N
Ethiopia	Negaso Gidada	22 Aug 1995 - 8 Oct 2001	OPDO	N
	Girma Wolde-Giyorgis Lucha	8 Oct 2001 -	EPRDF	N
Gabon	Gabriel Léon M 'Ba	17 Ago 1960 - 28 Nov 1967	BDG	Y
	Omar Bongo	28 Nov 1967 -	BDG/PDG	Y
Gambia	Dawda Kairaba Jawara	24 Apr 1970 - 22 Jul 1994	PPP	Y
	Yahya A. J. J. Jammeh	18 Oct 1996 -	APRC	Y
Ghana	Jerry John Rawlings	4 Jun 1979 - 24 Sep 1979	military	
	Hilla Limann	24 Sep 1979 - 31 Dec 1981	PNP	Y
	Jerry John Rawlings	7 Jan 1993 - 7 Jan 2001	NDC	Y
	John Agyekum Kufuor	7 Jan 2001 -	NPP	Y
Guinea	Ahmed Sékou Touré	28 Jan 1961 - 26 Mar 1984	PDG	Y
	Louis Lansana Beavogui	26 Mar 1984 - 3 Apr 1984	PDG (interim head of State)	Y
	Lansana Conté	3 Apr 1984 -	military, PUP	Y
Guinea-Bissau	João Bernardo Vieira	16 May 1984 - 7 May 1999	PAIGC	Y
	Malam Bacai Sanhá	13 May 1999 - 17 Feb 2000	PAIGC (acting)	Y
	Kumba Ialá	17 Feb 2000 - 14 Sep 2003	PRS	Y
	Henrique Pereira Rosa	28 Sep 2003 - 1 Oct 2005	n/p (interim)	Y
	João Bernardo Vieira	1 Oct 2005 -	n/p	Y

Table 6 (concluded). Sub-Saharan Africa: Presidents of the Republic, 1975-2005

	Name	Period	Party	Pres Elected Directly
Kenya	Jomo Kenyatta	12 Dec 1964 - 22 Aug 1978	KANU	Y
	Daniel arap Moi	22 Aug 1978 - 30 Dec 2002	KANU	Y
	Mwai Kibaki	30 Dec 2002 -	NARC/DP	Y
Liberia	William Richard Tolbert	23 Jul 1971 - 12 Apr 1980	TWP	Y
	Samuel Kanyon Doe	25 Jul 1984 - 9 Sep 1990	NDPL	Y
	Ghankay Charles Taylor	2 Aug 1997 - 11 Aug 2003	NPP	Y
	Moses Zeh Blah	11 Aug 2003 - 14 Oct 2003	NPP	Y
	Ellen Johnson-Sirleaf	16 Jan 2006 -	UP	Y
Madagascar	Didier Ratsiraka	4 Jan 1976 - 27 Mar 1993	FNDR/AREMA	Y
	Albert Zafy	27 Mar 1993 - 5 Sep 1996	UNDD	Y
	Norbert Lala Ratsirahonana	5 Sep 1996 - 9 Feb 1997	AVI (acting)	Y
	Didier Ratsiraka	9 Feb 1997 - 6 May 2002	AREMA	Y
	Marc Ravalomanana	6 May 2002 -	TIM	Y
Malawi	Hastings Kamuzu Banda	6 Jul 1966 - 21 May 1994	MCP	Y
	Elson Bakili Muluzi	21 May 1994 - 24 May 2004	UDF	Y
	Bingu wa Mutharika	24 May 2004 -	UDF	Y
Mali	Moussa Traoré	19 Jun 1979 - 26 Mar 1991	UDPM	Y
	Alpha Oumar Konaré	8 Jun 1992 - 8 Jun 2002	ADEMA	Y
	Amadou Toumani Touré	8 June 2002 -	n/p	Y
Mauritania	Moktar Ould Daddah	20 Aug 1961 - 10 Jul 1978	PRM, PPM	Y
	Maaouya Ould Ahmed Taya	18 Apr 1992 - 3 Aug 2005	PRDS	Y
Mozambique	Samora Moisés Machel	25 Jun 1975 - 19 Oct 1986	FRELIMO	Y
	Joaquim Alberto Chissano	6 Nov 1986 - 2 Feb 2005	FRELIMO	Y
	Armando Emílio Guebuza	2 Feb 2005 -	FRELIMO	Y
Namibia	Samuel Daniel Nujoma	21 Mar 1990 - 21 Mar 2005	SWAPO	Y
	Hifikepunye Lucas Pohamba	21 Mar 2005 -	SWAPO	Y
Niger	Ali Saïbou	18 Dec 1989 - 16 Apr 1993	MNSD	Y
	Mahamane Ousmane	16 Apr 1993 - 27 Jan 1996	CDS	Y
	Ibrahim Baré Maïnassara	7 Aug 1996 - 11 Apr 1999	UNIRD	Y
	Mamadou Tandja	22 Dec 1999 -	MNSD	Y
Nigeria	Shehu Shagari	1 Oct 1979 - 31 Dec 1983	NPN	Y
	Olusegun Obasanjo	29 May 1999 -	PDP	Y
Rwanda	Juvénal Habyarimana	5 Jul 1973 - 6 Apr 1994	military/MRND	Y
	Théodore Sindikubwabo	9 Apr 1994 - 19 Jul 1994	MRND	Y
	Pasteur Bizimungu	19 Jul 1994 - 24 Mar 2000	FPR	Y
	Paul Kagame	24 Mar 2000 -	FPR	Y
Sao Tome and Principe	Manuel Pinto da Costa	12 Jul 1975 - 4 Mar 1991	MLSTP	Y
	Leonel Mário d 'Alva	4 Mar 1991 - 3 Apr 1991	MLSTP	Y
	Miguel dos Anjos Trovoada	3 Apr 1991 - 15 Aug 1995	n/p, ADI	Y
	Miguel dos Anjos Trovoada	21 Aug 1995 - 3 Sep 2001	ADI	Y
	Fradique de Menezes	3 Sep 2001 - 16 Jul 2003	ADI, MDFM	Y
	Fradique de Menezes	23 Jul 2003 -	MDFM	Y
Senegal	Léopold Sédar Senghor	5 Sep 1960 - 31 Dec 1980	UPS/PSS	Y
	Abdou Diouf	1 Jan 1981 - 1 Apr 2000	PSS	Y
	Me Abdoulaye Wade	1 Apr 2000 -	PDS	Y
Seychelles	James Richard Mancham	29 Jun 1976 - 5 Jun 1977		Y
	France -Albert René	5 Jun 1977 - 14 Apr 2004	FPPS	Y
	James Alix Michel	14 Apr 2004 -	FPPS	Y
Sierra Leone	Siaka Probyn Stevens	21 Apr 1971 - 28 Nov 1985	APC	Y
	Joseph Saidu Momoh	28 Nov 1985 - 29 Apr 1992	APC	Y
	Ahmad Tejan Kabbah	29 Mar 1996 - 25 May 1997	SLPP	Y
	Ahmad Tejan Kabbah	10 Mar 1998 -	SLPP	Y
Togo	Gnassingbé Eyadéma	14 Apr 1967 - 5 Feb 2005	military, RPT	Y
	Faure Essozimna Gnassingbé	5 Feb 2005 - 25 Feb 2005	RPT	Y
	Abbas Bonfoh	25 Feb 2005 - 4 May 2005	RPT	Y
	Faure Essozimna Gnassingbé	4 May 2005 -	RPT	Y
Uganda	Idi Amin Dada	25 Jan 1971 - 13 Apr 1979	military	Y
	Yusufu Kironde Lule	13 Apr 1979 - 20 Jun 1979	UNLF	Y
	Godfrey Lukongwa Binaisa	20 Jun 1979 - 12 May 1980	UNLF	Y
	Apolo Milton Obote	15 Dec 1980 - 27 Jul 1985	UPC	Y
	Yoweri Kaguta Museveni	26 Jan 1986 -	military/NRM	Y
United Republic of Tanzania	Julius Kambarage Nyerere	26 Apr 1964 - 5 Nov 1985	TANU/CCM	Y
	Ali Hassan Mwinyi	5 Nov 1985 - 23 Nov 1995	CCM	Y
	Benjamin William Mkapa	23 Nov 1995 - 21 Dec 2005	CCM	Y
	Jakaya Mrisho Kikwete	21 Dec 2005 -	CCM	Y
Zambia	Kenneth David Kaunda	24 Oct 1964 - 2 Nov 1991	UNIP	Y
	Frederick J. T. Chiluba	2 Nov 1991 - 2 Jan 2002	MMD	Y
	Levy Patrick Mwanawasa	2 Jan 2002 -	MMD	Y
Zimbabwe	Robert Gabriel Mugabe	18 Apr 1980 - 31 Dec 1987	ZANU	Y

Source: [COMPLETE].

Table 7. Impact of Fiscal Balance, GDP Growth and Inflation on Election Results

	Narrow Definition		Expanded Definition	
	1981-2005	1990-2005	1981-2005	1990-2005
Dependent variable: Reelect				
Balch_term	0.05	0.05	0.06	0.06
	(0.81)	(0.78)	(1.16)	(1.18)
Balch_ey	0.03	0.03	0.04	0.03
	(0.97)	(0.77)	(1.10)	(0.75)
GDP_gr_term	-0.05	-0.05	-0.02	-0.02
	(-0.98)	(-0.94)	(-0.46)	(-0.37)
GDP_gr_ey	-0.05	-0.05	-0.02	-0.02
	(-1.51)	(-1.47)	(-0.96)	(-0.77)
Infl_term	-0.03*	-0.03	-0.01	-0.01
	(-1.81)	(-1.86)	(-0.98)	(-1.06)
Infl_ey	0.02	0.02	0.01	-0.01
	(0.94)	(0.75)	(0.72)	(0.50)
Constant	0.84***	0.80***	0.55***	0.51***
	(4.28)	(3.97)	(3.52)	(3.1)
Pseudo R2	0.14	0.13	0.05	0.05
Observations	69	66	86	83
of which: reelection of incumbent	54	51	61	58

Z-statistics are in parenthesis.
* denotes significance at 10 percent level, ** significance at 5 percent level, and *** significance at 1 percent level.

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