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The Quest for Higher Growth in the WAEMU Region: The Role of Accelerations and Decelerations

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The Quest for Growth in the WAEMU Region—the Role of Accelerations and Decelerations

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Abstract

With the exception of Burkina Faso and Mali, the growth experience for WAEMU countries has been disappointing, even when compared to other sub-Saharan African (SSA) countries. The main objective of the paper is to investigate why the quest for a growth takeoff has been more elusive in the WAEMU countries compared to other SSA countries. To do this, the paper focuses on the determinants of growth accelerations and decelerations in SSA and the WAEMU. It finds that the variables most closely associated with growth accelerations and decelerations in SSA are changes in terms of trade, private investment, civil tension, real exchange rates, and inflation. Second, as found elsewhere in the literature, there is a certain asymmetry between accelerations and decelerations, in both frequency and determinants, and that the WAEMU region is quite different from the rest of SSA.

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I. INTRODUCTION

The growth experience for West African Economic and Monetary Union (WAEMU) countries[2] over the past three decades has been disappointing, even when compared to other sub-Saharan African (SSA) countries. The divergence has been particularly remarkable after what has been dubbed "the great African takeoff" from 1995.[3] During the period 1995–2009, per capita GDP more than doubled in SSA emerging countries, but grew just 5 percent in the WAEMU.[4] Indeed, the per capita income level in WAEMU was *lower* in 2009 than in 1980. In other words, the past three decades have been virtually lost. While this average masks a quite heterogeneous growth experience, ranging from poor in Togo and Côte d'Ivoire to good in Burkina Faso and Mali, the level of per capita income remains below US$1,000 in all WAEMU countries.

The underlying economic fundamentals of most SSA countries have improved significantly since 1995 (IMF, 2008). Average growth rates have approached those of developing countries elsewhere. Moreover, growth has been more persistent than in any previous period since the Second World War. In general, countries that have grown sustainably have avoided major policy failures and have a more stable political environment. They have achieved macroeconomic stability, especially low and stable inflation, and significantly reduced public debt burdens. At the same time, they have undertaken structural reforms and improved their institutions.

The main objective of the paper is to investigate why the quest for a growth takeoff has been more elusive in the WAEMU countries compared to fastest growing SSA countries, and to propose potential avenues for remedying the problem. To do this, the paper attempts to investigate three interrelated issues. First, using a variety of measurements—focusing on growth accelerations and decelerations—it examines to what extent the growth of WAEMU countries is lower than that of fastest growing SSA countries[5], and whether the pattern has changed over time. Second, it brings out macroeconomic and structural stylized facts that set the WAEMU apart. Finally, it investigates empirically the determinants of growth accelerations and decelerations in SSA and in the WAEMU.

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[2] WAEMU countries are Benin, Burkina Faso, Côte d'Ivoire, Guinea Bissau, Mali, Niger, Senegal and Togo.

[3] See for instance, IMF (2008).

[4] SSA emerging countries are defined as non-oil exporting countries where GDP per capita grew, on average, at more than 3 percent per year during 1995-2009. These countries include Botswana, Cape Verde, Ethiopia, Mauritius, Mozambique, Rwanda, Tanzania, and Uganda. See IMF (2010) for an elaboration of this point.

[5] The paper will focus on comparing WAEMU countries to SSA top performers (see IMF (2010) for an elaboration on the methodology). Interestingly, the average per capita growth rate of low income countries (excluding SSA countries) top ten performers (Bangladesh, Cambodia, Kyrgyz Republic, Lao PDR, Myanmar, Nepal, Pakistan, Tajikistan, Uzbekistan, and Vietnam) was 4.2 percent during 1995-2009, a level similar to the growth rate of fastest growing SSA countries during the same period.

This paper contributes to the literature on growth accelerations and decelerations in SSA in three ways. First, it goes beyond papers such as Arbache and Page (2010) by not only describing growth episode probabilities in SSA but also analyzing their determinants in an empirically rigorous manner. It also defines growth acceleration and deceleration relative to each country's growth, in contrast to Hausmann, Pritchett, and Rodrik (2005) who use cross-country thresholds. Second, the paper benchmarks WAEMU performance against that of other SSA countries using a range of macroeconomic and structural variables. Third, it combines different estimation methods such as linear probability model, probit, conditional logit, and random effects to highlight the robustness of the results.

The main findings of the paper are threefold. First, the variables most closely associated with growth accelerations and decelerations in SSA are terms of trade, private investment, civil tension, FDI, and inflation. Second, as found elsewhere in the literature, there is a certain asymmetry between accelerations and decelerations, i.e., the impact of the variables on accelerations generally is not the mirror opposite of that on decelerations. Third, the WAEMU region seems quite different from the rest of SSA, especially in the case of growth decelerations—which are much more frequent.

The rest of the paper is organized as follows. The next section provides a selective review of relevant literature on growth accelerations and decelerations in SSA. Section III characterizes the WAEMU growth experience over the past 30 years, with emphasis on accelerations and decelerations. Particular attention is paid to benchmark WAEMU performance to other SSA countries, especially high-performing ones. Section IV sketches some macroeconomic and structural stylized factors that could possibly explain WAEMU's lackluster performance. Section V formally analyzes the determinants of accelerations and decelerations in SSA and the WAEMU, and Section VI concludes.

II. GROWTH ACCELERATIONS AND DECELERATIONS—SELECTED READINGS FOR AFRICA

Given the inherent weaknesses of analyzing growth over long periods which comprise, "peak, valleys and plateaus", there has been a tendency to focus on accelerations and decelerations. Hausmann, Pritchett, and Rodrik (2005) were among the first to do this systematically for a large group of countries. They argue convincingly that determinants for accelerations and decelerations are actually different. While episodes of growth spurts are actually, quite common, *sustained* accelerations are actually relatively less frequent.

In a detailed analysis aimed at explaining growth turnarounds in 22 West African economies over the period 1960–2006, Imam and Salinas (2008) make the following observations. First, contrary to perceptions, growth accelerations are in fact quite frequent. In other words the so-called "African growth tragedy" is not a continuous episode of lackluster growth. Unfortunately, decelerations and collapses are also fairly frequent. Second, they found that long-run stagnation in the WAEMU was mainly the result of the oil and debt shocks

compounded by real exchange rate overvaluation. Finally, they found that accelerations are typically associated with positive external shocks, economic liberalization and political stability. In terms of policy implications, they conclude that political stability and market-oriented reforms can significantly increase the chances of growth acceleration. At the same time, policies that promote higher valued-added products and diversification can reduce the negative impact commodity price volatility.

While there is a voluminous growth literature, and it is easy to miss the forest for the trees, the two key policy lessons for African countries can really be summarized in two points. Many papers (Berg et al. 2008, Arbache and Page 2009) make this point in various guises, but it really boils down to two important lessons, and it can be argued that most of the literature is really an elaboration of how to convert these two lessons into practical policies.

First, it is crucial to avoid political and macroeconomic instability at all costs.[6] In an interesting new study on SSA growth, Salinas et al. (2011) make this point succinctly. They find that countries that have had sustained political stability (especially avoiding civil wars) and macroeconomic stability have witnessed (i) much higher growth than before stabilization; (ii) growth that is superior to that in countries that have not stabilized and that this "stability payoff" is about 3 percentage points (in per capita growth); and (iii) growth that is similar to high-performing South-East Asian countries.

Second, it is necessary to increase the return to economic activity. Rodrik (2006) makes the point that in most African countries, the low levels of private investment and entrepreneurship are linked to low returns to economic activity. In this case, in order to have country-specific policy recommendations, it may be useful for a country to undertake a growth diagnostic to identify the main or binding causes for low returns. These could be, for instance, low social returns due to bad infrastructure, or low appropriability of returns due to corruption or poor property rights, or, more generally, insufficiently developed institutions.

In an attempt to identify binding constraints for African countries, Johnson et al. (2007) use a benchmarking approach. They use data on early characteristics of successful countries in the growth process to create benchmarks with which to assess constraints on sustained growth in Africa. They find that African countries today compare favorably to the successful countries in terms of institutional development, e.g., East Asia (Indonesia, Malaysia, Thailand) in the 1960s or China and Vietnam in the 1980s. They underscore three binding constraints that need to be overcome in order to have sustained growth:

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[6] Political instability in all its manifestations could include unstable governments, civil conflict and wars, etc., while macroeconomic instability includes high and unstable inflation, real exchange rate overvaluation, high fiscal and external account deficits, unsustainable debt levels, etc.

- *Weak political and economic institutions.* While these may not prevent growth episodes, they are very much associated with severe crises and derailment of growth.

- *Conflict or social strife.* A greater propensity is a key factor in curtailing growth accelerations.

- *Exchange rate overvaluation.* This is robustly correlated with growth crises even after controlling for "deeper determinants" such as institutions and inequality. Overvaluation is particularly deleterious to export growth, particularly of manufactures. Indeed, almost all successful countries avoided any episode of significant overvaluation during the entire period of sustained growth.

III. CHARACTERIZING THE WAEMU GROWTH EXPERIENCE

Using various metrics, the first part of this section compares growth in WAEMU countries and fastest growing SSA countries across time. In addition, it analyzes differences in income per capita dynamics between WAEMU countries and fastest growing SSA countries as well as heterogeneity across WAEMU countries. Based on the recent literature on growth, the second part of the section defines and characterizes growth acceleration and deceleration episodes in WAEMU and compares it with fastest growing SSA countries. Unless otherwise stated, the focus in this paper is on per capita growth rates.

A. Growth and Income Level

Growth performance has been significantly lower in WAEMU countries than in fastest growing SSA countries, particularly during the last decade. While averaging 5.1 percent in fastest growing SSA countries, the average real GDP growth rate in WAEMU was 2.9 percent during 1980–2009. The difference in growth performance between WAEMU countries and top performers in SSA is almost similar when looking at per capita growth figures. Indeed, while averaging 2.7 percent in fastest growing SSA countries, the average per capita growth rate in WAEMU was virtually zero percent during 1980–2009.

The divergence in growth was particularly marked after 1995 (Figure 1). Before 1995, average growth in WAEMU countries does not significantly differ from average growth in fastest growing SSA countries. However, after 1994, growth performance in WAEMU countries is, on average, significantly lower than growth performance in emerging SSA countries. Indeed, while averaging 0.6 percent in WAEMU countries during 1995–2009, average growth rate stood at 4.2 percent in emerging SSA countries.

Consistent with growth performance, average income per capita slightly increased in WAEMU countries while it significantly rose in emerging SSA countries. Per capita GDP

more than doubled in SSA emerging countries but just grew by 5 percent in the WAEMU between 1995 and 2009.

However, the average low growth performance in the WAEMU countries hides significant heterogeneity across countries. While growth performance has been poor in Togo and Côte d'Ivoire during the period 1995–2009, Burkina Faso and Mali have experienced good growth performances. The relatively better performance in Burkina Faso and Mali (3 percent and 2.4 percent on average, respectively) is closer to growth in emerging SSA countries.

As a result of growth divergence, income level trends are also heterogeneous across WAEMU countries. Benefiting from their higher growth, Burkina Faso and Mali experienced a significant improvement in their per capita income after 1995, though from a low base. Per capita income increased by almost 50 percent between 1995 and 2009 in Burkina Faso and Mali while it significantly deteriorated in Côte d'Ivoire and Togo during the same period. The other countries of the union, Guinea Bissau and Niger, have broadly similar performance to Côte d'Ivoire and Togo. Dynamics of growth and income per capita in Benin and Senegal are closer to the results achieved by Burkina Faso and Mali, the best performers of the union (Appendix 1).

B. Growth Acceleration and Deceleration

In line with recent developments in the literature, this section focuses on growth acceleration and deceleration. As argued by Imam and Salinas (2008), given the very high volatility in African growth, it is not proper to assume that countries have homogenous parameters in long-run growth regressions.[7] We follow their argument that it is better to focus on short-run growth episodes in order to more appropriately formulate policy advice.

The literature has shown that starting growth acceleration is relatively easy, while sustaining it is rather difficult (Berg et al. 2008). Obviously, sustaining growth is necessary to improve economic conditions of the population. To analyze growth accelerations and decelerations, the section first identifies them over time in WAEMU and emerging SSA countries. The next section analyzes their frequency.

The definition of growth acceleration and deceleration is based on a variant of Hausmann, Pritchett, and Rodrik (2005) methodology derived by Arbache and Page (2010). Following Arbache and Page (2010), we define a growth acceleration for a given country by the following three conditions that must be satisfied for at least three consecutive years:

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[7] A similar point is also made in Duttagupta and Mlachila (2008).

- The forward four-year moving average growth rate minus the backward four-year moving average growth rate exceeds 0, 1 or 2 percent.

- The forward four-year moving average growth rate exceeds the country's average growth rate.

- The forward four-year moving average GDP per capita exceeds the backward four-year moving average.

Symmetrically, growth deceleration for a given country is defined by the following three conditions that must be satisfied for at least three consecutive years:

- The forward four-year moving average growth rate minus the backward four-year moving average growth rate is less than 0.

- The forward four-year moving average growth rate is below the country's average growth rate.

- The forward four-year moving average GDP per capita is below the backward four-year moving average.

- In contrast with Hausmann, Pritchett, and Rodrik (2005), the above definition uses a shorter moving average window (four versus seven) and a lower growth threshold (zero versus two). In addition, while acceleration is defined relatively to each country's average growth in this methodology, Hausmann, Pritchett, and Rodrik (2005) require an average growth rate of at least 3.5 percent during the acceleration episode.[8]

- Based on the methodology describes above, Tables 1a-c illustrates how the frequency of growth accelerations and decelerations in WAEMU countries compares to that emerging SSA countries.

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[8] See Arbache and Page (2010) for more detail on the definition of growth acceleration and deceleration.

Figure 1. Growth and Income Level

Growth has been disappointing in the WAEMU　　　　　*and income level did not significantly improve.*
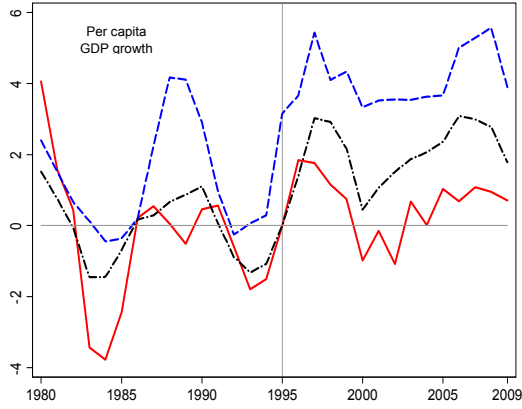
WAEMU countries are heterogeneous; some of them have experienced higher growth rate…
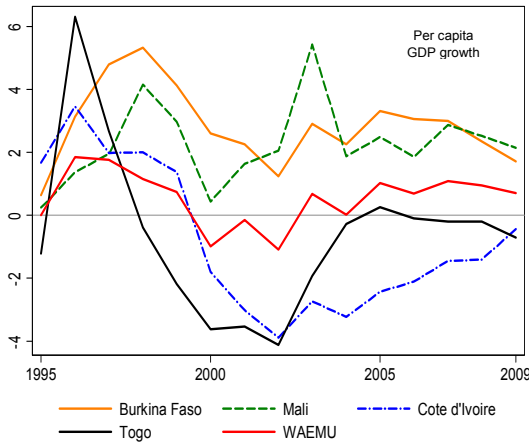
…and significant improvement in their per capita income, though from a low base.
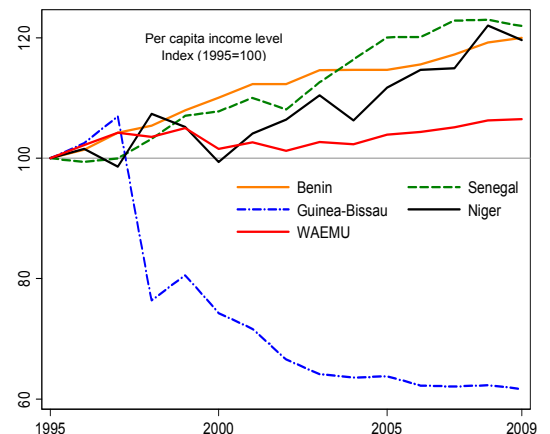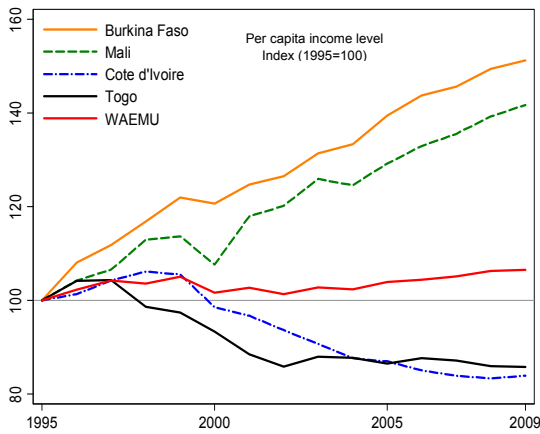
In line with what has been found above, the frequency of growth acceleration in WAEMU countries during the period 1980–1994 was not significantly different from that of emerging SSA countries, though WAEMU countries experienced higher frequency of growth deceleration. However, after 1994, although WAEMU countries enjoyed an increase in acceleration frequency and a reduction in deceleration frequency, the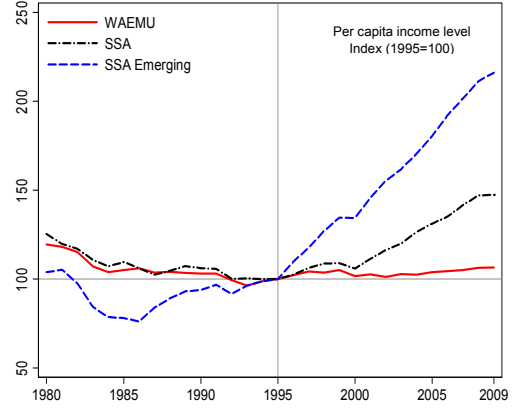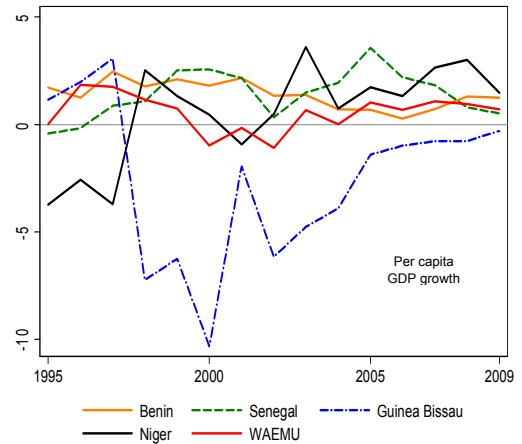 improvement in emerging SSA was more significant. Indeed while the frequency of growth acceleration increases from 0.22 to 0.33 in WAEMU countries, it increases from 0.26 to 0.49 in emerging SSA countries. The frequency of growth deceleration also decreases from 0.33 to 0.13 in WAEMU countries but from 0.18 to zero in emerging SSA countries.

As in the case of growth and income level, the frequency of growth acceleration and deceleration is heterogeneous across WAEMU countries. The top performers in term of growth (Burkina Faso and Mali) have a higher frequency of growth acceleration and a lower frequency of growth deceleration than other members of the union (Table 2). Indeed, while the frequency of growth deceleration is higher than that of growth acceleration in low growth countries such as Côte d'Ivoire, Niger, and Togo, countries with better growth performance (Burkina Faso, Mali) experienced higher frequency of growth acceleration than deceleration.

Table 1. Per Capita Growth Acceleration and Deceleration, 1980–2009

(a) Acceleration defined with positive growth

	1980-1994		1995-2009	
	Acceleration	Deceleration	Acceleration	Deceleration
WAEMU	0.22	0.33	0.33	0.13
SSA Emerging	0.26	0.18	0.49	0.02
SSA	0.21	0.29	0.36	0.10

(b) Acceleration defined with 1 percent growth difference

	1980-1994		1995-2009	
	Acceleration	Deceleration	Acceleration	Deceleration
WAEMU	0.12	0.33	0.10	0.13
SSA Emerging	0.21	0.18	0.31	0.02
SSA	0.15	0.29	0.22	0.10

(c) Acceleration defined with 2 percent growth difference

	1980-1994		1995-2009	
	Acceleration	Deceleration	Acceleration	Deceleration
WAEMU	0.09	0.33	0.06	0.13
SSA Emerging	0.13	0.18	0.13	0.02
SSA	0.07	0.29	0.13	0.10

Source: Authors' calculations.

Considering the average growth rate during the episode is also important when comparing the frequency of growth acceleration and deceleration. Countries in the middle range of the distribution of growth such as Benin and Senegal experience higher frequency of growth acceleration than growth deceleration. However, when factoring in the average growth rate during acceleration and deceleration episode, it appears that periods of growth acceleration in these countries have not be enough to lead to significant improvement of average growth. Guinea Bissau, a country with slightly higher frequency of growth acceleration than of growth deceleration also experienced low growth performance given the large size of economic contraction during deceleration episodes.

Table 2. Per Capita Growth Acceleration and Deceleration in WAEMU, 1980–2009

Country	Frequency		Average growth rate	
	Growth acceleration	Growth deceleration	During acceleration	During deceleration
Benin	0.47	0.13	1.55	-2.65
Burkina Faso	0.50	0.00	2.88	…
Côte d'Ivoire	0.13	0.47	1.58	-2.56
Guinea-Bissau	0.23	0.20	1.28	-2.49
Mali	0.43	0.13	2.79	-2.91
Niger	0.17	0.33	0.30	-4.66
Senegal	0.30	0.20	2.07	-0.72
Togo	0.00	0.40	…	-4.98

Acceleration defined with positive growth
Source: Authors' calculations.

The analysis of growth in WAEMU and emerging SSA countries shows that growth performance was on average lower in WAEMU. More specifically, it reveals that growth performance in WAEMU countries was broadly similar to emerging SSA countries growth before 1995. After 1995, emerging SSA countries had significantly better growth performance than their WAEMU counterparts. In addition, the analysis also illustrates some

heterogeneity among WAEMU countries with Burkina Faso and Mali performing better and Côte d'Ivoire, Togo, Niger, and Guinea Bissau being at the bottom.

IV. MACROECONOMIC MANAGEMENT AND STRUCTURAL DEVELOPMENTS

Although there is some heterogeneity across WAEMU countries as seen above, WAEMU countries' growth performance is well below the performances in emerging SSA countries after 1994. Before this period, performance in WAEMU countries is broadly in line with those of emerging SSA countries. Based on this stylized fact, this section attempts to relate the poorer performance of WAEMU countries after 1994 to the changes in macroeconomic management and structural developments. The aim in this section is not to perform formal empirical tests of the relative importance of individual variables but to do a comparative broad-brush portrait of macroeconomic management and structural developments.

A. Macroeconomic Management

While macroeconomic management generally improved in emerging SSA countries especially between 1995 and 2009, WAEMU countries lagged behind. Inflation, real exchange rate management, and FDI flows significantly improved in emerging SSA countries. With the exception of inflation (helped by the peg of the CFA franc to the euro), WAEMU countries underperformed. In addition, while private investment significantly increased in emerging SSA countries, it remained stable in WAEMU countries (Table 3). Improvements in terms of trade do not appear to drive growth differences between the WAEMU and emerging SSA countries, although they could potentially explain the difference with the rest of SSA.

Not surprisingly, macroeconomic management improved more in WAEMU's best performers. While public investment significantly increased in Burkina-Faso and Mali between 1980–1994 and 1995–2009, it significantly decreased in Côte d'Ivoire and Togo during the same period. FDI also significantly increased in WAEMU top performers (Burkina Faso and Mali), but decreased in countries with the lowest growth in the region (Côte d'Ivoire and Togo). From a less competitive level during 1980–1994, Burkina Faso and Mali benefited from a higher improvement in their REER during the period 1995–2009 (Table 4).

Table 3. Macroeconomic Management, 1980-2009

	1980-1994			1995-2009		
	WAEMU	Emerging SSA	SSA	WAEMU	Emerging SSA	SSA
Private Investment (% GDP)	12.4	12.9	13.1	12.3*	15.5	14.1
Public Investment (% GDP)	9.7	11.4	8.6	6.8*	7.9	7.2
Inflation	11.6*	26.6	18.5	4.6*	8.6	22.5
Terms of trade growth	-0.34	-0.77	-0.14	0.28	0.03	1.36
Average of changes in REER	-8.2	-11.7	-7.7	1.7	-0.3	1.1
FDI (% GDP)	0.4*	0.6	1.0	1.4*	2.6	4.4

*Indicates that the WAEMU average is significantly different from Emerging SSA average at the 10 percent significance level.

Sources: IMF, WEO database and authors' calculations.

Table 4. Macroeconomic Management in WAEMU Countries, 1980-2009

	1980-1994				1995-2009			
	Burkina Faso	Mali	Côte d'Ivoire	Togo	Burkina Faso	Mali	Côte d'Ivoire	Togo
Public Investment (% GDP)	5.5	5.9	7.5	10.6	7.9	7.5	3.5	2.8
Inflation	5.0	5.4	6.1	5.9	3.5	3.1	4.1	3.7
Average of changes in REER	-8.2	-14.2	-4.4	-6.1	1.5	-0.04	2.3	2.4
Terms of trade growth	1.1	1.1	5.0	-4.2	-2.3	1.2	3.8	1.5
FDI (% GDP)	0.02	0.05	1.9	0.3	1.0	2.4	0.2	0

Sources: IMF, WEO database and authors' calculations.

B. Structural Developments

This section focuses on institutional quality, a main characteristic that sets many of the WAEMU countries apart from emerging SSA countries. WAEMU countries rank consistently low in different dimensions of the institutional quality. Compared to emerging SSA countries, WAEMU countries suffered more from corruption and have weaker rule of law and accountability mechanisms (Table 5). The fastest growing countries in the region

(Burkina Faso and Mali) benefited from better institutional quality and experienced less political instability than the poorer performers (Côte d'Ivoire and Togo). For instance, Côte d'Ivoire, the largest economy in the region (with about a third of the region's output) has suffered chronic political instability since its first military coup in December 1999.

Table 5. Institutional Quality, 1996-2008

	WAEMU	Emerging SSA	SSA
Corruption	1.8*	2.1	1.8
Rule of law	1.7*	2.0	1.7
Voice and accountability	2.0	2.1	1.9
Political instability	2.1	2.0	1.9

Variables range from -0 to 5 with higher numbers indicating a better quality of institutions.
*Indicates that the WAEMU average is significantly different from Emerging SSA average at the 10 percent significance level.
   Sources: World Bank and authors' calculations.

Table 6. Institutional Quality in WAEMU Countries, 1996-2008

	Burkina Faso	Mali	Côte d'Ivoire	Togo
Corruption	2.3	2.0	1.7	1.6
Rule of law	2.0	2.1	1.2	1.6
Voice and accountability	2.1	2.8	1.3	1.2
Political instability	2.4	2.6	0.9	1.9

Variables range from -0 to 5 with higher numbers indicating a better quality of institutions.
   Sources: World Bank and authors' calculations.

This section has related the poorer performance of WAEMU countries after 1994 to macroeconomic and institutional quality. With the exception of inflation, macroeconomic management improved more in emerging SSA countries between 1995 and 2009 than in WAEMU countries. Among WAEMU countries, the best performers experienced a significant improvement of macroeconomic management. Institutional quality is also lower, on average, in the WAEMU region but the best performers in the region benefited from better institutions and less political instability.

C. Implications for WAEMU

In principle, countries can recover from shocks relatively easily. The critical issue is to sustain recoveries and to prevent growth spurts from fizzling out. In the neo-classical growth model, it is assumed that the marginal product of capital is high at low levels of development

when an economy has low levels of capital. On the other hand, if there are increasing returns to scale, high complementarity, and negative feedback effects—as is typically the case in most SSA countries—the marginal return to capital can be initially low, rather than being high.[9] As a result, entrepreneurs are discouraged from investing because small increments in capital yield little. In this context, an economy can be stuck in a low steady state, or a poverty trap.

A key to a growth takeoff is overcoming poverty traps. According to Rodrik (2006), and as shown above, the main issue is not that African countries are unable to grow. The problem is that growth spurts typically fizzle out. Consequently, policy measures that prevent growth spurts from fizzling out are crucial to avoiding poverty traps and necessary for growth takeoffs. In this context it is crucial to be able to determine empirically what factors could explain accelerations and decelerations. The next section does this using a variety of econometric methods and robustness tests.

V. THE DETERMINANTS OF GROWTH ACCELERATIONS AND DECELERATIONS IN SUB-SAHARAN AFRICA

A. Overview on Methodology

In order to assess the factors that affect accelerations and decelerations more rigorously, we estimate models of the following generic format:

$$A_{it} = f(X_{it}, D_w)$$

$$D_{it} = f(X_{it}, D_w)$$

Where:

A_{it} and D_{it} represent dummies for acceleration and decelerations, respectively. In other words, A_{it} or D_{it} equal 1 when there is acceleration or deceleration, respectively, in country i during period t and 0 otherwise.

X includes control variables that are generally discussed above (terms of trade, private investment-to-GDP ratio, the degree of civil tension, public investment-to-GDP ratio, inflation, FDI-to-GDP ratio, private sector credit-to-GDP ratio, trade openness, and REER). Unless otherwise stated, these variables are presented in terms of changes. The variables are averages for five years—the previous four plus the current year, reducing the risk of endogeneity stemming from reverse causality.

D_W= the WAEMU dummy.

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[9] See, for instance, Costas and Stachurski (2005).

The models are estimated for all of SSA countries, and at a second stage, WAEMU dummies are introduced.[10] WAEMU dummies intend to control for the specific effect of WAEMU countries, which are recognized to have benefited from a lower growth compared to other SSA countries after 1995. All regressions include period fixed effects. The models assess the impact of variation in the explanatory variable to the onset of an acceleration or a deceleration using various estimation methods. Linear probability models have the advantage of providing a good approximation of non linear models and allow for a better handling of unobserved heterogeneity. The random effects model is based on the assumption that the explanatory variables are not correlated with individual specific effects. However, such model may not be appropriate since some historic factors have been found to be important determinants of countries' current institutions and governance quality, for instance. To address this issue, fixed effects model and conditional logit that control for all invariant factors are also estimated.

B. Growth Accelerations

Starting with the baseline equation above, it is shown that growth accelerations are positively related to changes in terms of trade and private investment, and civil tensions are bad for accelerations. Progressively introducing other control variables still leaves these variables significant, and additionally shows that inflation is bad for accelerations and FDI inflows are positively related to it. Other variables such as private sector credit and trade openness do not seem to matter much. Interestingly, REER appreciation does not seem to negatively impact accelerations, presumably because the other variables "overwhelm" it.

The introduction of the WAEMU dummy generally leaves the key variables significant, with some interesting twists. In general, the strength of the coefficients is lower. For instance, civil tension does not seem to matter. The WAEMU dummy, which is highly significant, seems to "soak up" some of the explanatory power of the variables.

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[10] WAEMU dummies are not introduced with fixed-effect models and conditional logit models, which already includes for country fixed effects.

Table 7. Determinants of Growth Accelerations in Sub-Saharan Africa

	Dependent Variable: Growth Acceleration Dummy **Conditional Logit**						
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Change in ToT	0.024	0.024	0.025	0.025	0.023	0.023	0.022
	(2.43)**	(2.42)**	(2.48)**	(2.40)**	(2.18)**	(2.13)**	(2.11)**
Change in Priv. Inv.	0.125	0.120	0.217	0.159	0.147	0.154	0.153
	(2.71)***	(2.65)***	(3.76)***	(2.37)**	(2.18)**	(1.97)**	(1.95)*
Civil tension	-0.277	-0.266	-0.211	-0.248	-0.199	-0.198	-0.203
	(2.65)***	(2.50)**	(1.97)**	(2.21)**	(1.69)*	(1.68)*	(1.71)*
Change in Pub. Inv.		-0.051	0.013	0.016	0.020	0.023	0.025
		(0.96)	(0.23)	(0.27)	(0.33)	(0.36)	(0.41)
Inflation			-0.002	-0.003	-0.003	-0.003	-0.003
			(2.19)**	(1.97)**	(1.98)**	(1.98)**	(2.00)**
Change in FDI				0.263	0.259	0.261	0.266
				(2.29)**	(2.16)**	(2.17)**	(2.20)**
Credit to the priv. sector					-0.011	-0.011	-0.011
					(0.91)	(0.91)	(0.89)
Change in Openness						-0.005	-0.009
						(0.17)	(0.27)
Change in REER							-0.001
							(0.29)
Observations	732	732	732	732	685	685	684
Number of Countries	37	37	37	37	37	37	37
WAEMU countries	8	8	8	8	8	8	8
Pseudo R^2	0.16	0.16	0.17	0.18	0.18	0.18	0.18

Absolute value of z statistics in parentheses.
* significant at 10%; ** significant at 5%; *** significant at 1%.
All regressions include year fixed effects

Table 8. Determinants of Growth Accelerations in Sub-Saharan Africa

	Dependent Variable: Growth Acceleration Dummy Probit						
	(1)	(2)	(3)	(4)	(5)	(6)	(8)
Change in ToT	0.010	0.010	0.010	0.010	0.011	0.011	0.010
	(2.07)**	(2.09)**	(2.13)**	(2.07)**	(2.16)**	(2.12)**	(2.05)**
Change in Priv. Inv.	0.070	0.070	0.098	0.067	0.067	0.070	0.068
	(2.76)***	(2.86)***	(3.93)***	(2.28)**	(2.20)**	(2.02)**	(1.98)**
Civil tension	0.004	0.007	0.032	0.025	0.053	0.053	0.037
	(0.11)	(0.19)	(0.83)	(0.65)	(1.34)	(1.35)	(0.92)
Change in Pub. Inv.		-0.013	0.004	0.004	0.011	0.012	0.010
		(0.44)	(0.13)	(0.12)	(0.29)	(0.31)	(0.27)
Inflation			-0.001	-0.001	-0.001	-0.001	-0.001
			(2.57)**	(2.08)**	(2.31)**	(1.88)*	(1.81)*
Change in FDI				0.110	0.120	0.121	0.123
				(2.50)**	(2.58)***	(2.65)***	(2.63)***
Credit to the priv. sector					0.000	0.000	0.000
					(0.13)	(0.12)	(0.09)
Change in Openness						-0.003	-0.003
						(0.23)	(0.22)
Change in REER							0.000
							(0.08)
WAEMU Dummy							-0.292
							(2.18)**
Observations	866	866	866	866	837	837	831
Number of Countries	37	37	37	37	37	37	37
WAEMU countries	8	8	8	8	8	8	8
Pseudo R^2	0.09	0.09	0.10	0.10	0.10	0.10	0.11

Robust z statistics in parentheses.
* significant at 10%; ** significant at 5%; *** significant at 1%.
All regressions include year fixed effects.

C. Growth Decelerations

The results for growth decelerations are not necessarily the mirror opposite of those for accelerations. As indicated earlier, the empirical evidence points to the fact that these two facets of growth are affected somewhat differently by the various variables. One feature that stands out for decelerations is that the results are in general statistically stronger judging by the strength of the coefficients as well as the pseudo R^2. For instance, the explanatory power of inflation and terms of trade changes are much stronger for decelerations than for accelerations. Unlike in the case of acceleration, REER appreciation is significantly associated with deceleration.

Table 9. Determinants of Growth Decelerations in Sub-Saharan Africa

	Dependent Variable: Growth Deceleration Dummy Conditional Logit						
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Change in ToT	-0.041 (4.35)***	-0.041 (4.37)***	-0.043 (4.48)***	-0.044 (4.54)***	-0.041 (4.05)***	-0.040 (3.91)***	-0.041 (3.91)***
Change in Priv. Inv.	-0.212 (3.09)***	-0.211 (3.09)***	-0.208 (3.02)***	-0.224 (3.19)***	-0.172 (2.17)**	-0.192 (2.14)**	-0.112 (1.19)
Civil tension	0.248 (1.59)	0.253 (1.63)	0.246 (1.58)	0.251 (1.62)	0.360 (1.99)**	0.349 (1.91)*	0.315 (1.71)*
Change in Pub. Inv.		-0.023 (0.43)	-0.035 (0.66)	-0.039 (0.74)	-0.061 (0.55)	-0.069 (0.62)	-0.050 (0.35)
Inflation			0.016 (1.98)**	0.015 (1.85)*	0.029 (2.93)***	0.028 (2.90)***	0.027 (2.68)***
Change in FDI				0.072 (0.85)	0.002 (0.02)	0.002 (0.02)	-0.042 (0.47)
Credit to the priv. sector					-0.009 (0.50)	-0.009 (0.50)	-0.009 (0.53)
Change in Openness						0.014 (0.48)	-0.010 (0.28)
Change in REER							0.031 (2.82)***
Observations	686	686	686	686	615	615	586
Number of Countries	37	37	37	37	37	37	37
WAEMU countries	8	8	8	8	8	8	8
Pseudo R^2	0.25	0.25	0.25	0.25	0.27	0.27	0.29

Absolute value of z statistics in parentheses.
* significant at 10%; ** significant at 5%; *** significant at 1%.
All regressions include year fixed effects.

Table 10. Determinants of Growth Decelerations in Sub-Saharan Africa

	Dependent variable: Growth Deceleration Dummy Probit						
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Change in ToT	-0.017	-0.017	-0.017	-0.018	-0.019	-0.019	-0.021
	(4.66)***	(4.63)***	(4.64)***	(4.68)***	(4.83)***	(4.86)***	(4.95)***
Change in Priv. Inv.	-0.132	-0.133	-0.133	-0.140	-0.137	-0.124	-0.117
	(4.95)***	(4.92)***	(4.90)***	(4.87)***	(4.74)***	(3.91)***	(3.56)***
Civil tension	-0.032	-0.027	-0.027	-0.028	-0.052	-0.049	-0.015
	(0.90)	(0.74)	(0.70)	(0.72)	(1.27)	(1.20)	(0.37)
Change in Pub. Inv.		-0.018	-0.018	-0.021	-0.063	-0.058	-0.048
		(0.71)	(0.71)	(0.80)	(2.48)**	(2.21)**	(1.73)*
Inflation			-0.000	-0.000	0.000	0.000	0.000
			(0.02)	(0.13)	(1.04)	(0.57)	(0.69)
Change in FDI				0.035	0.026	0.028	0.012
				(1.11)	(0.82)	(0.89)	(0.37)
Credit to the priv. sector					0.002	0.002	0.001
					(1.01)	(0.94)	(0.51)
Change in Openness						-0.012	-0.010
						(0.78)	(0.62)
Change in REER							0.017
							(3.68)***
WAEMU Dummy							0.215
							(1.66)*
Observations	898	898	898	898	868	868	862
Number of Countries	37	37	37	37	37	37	37
WAEMU countries	8	8	8	8	8	8	8
Pseudo R^2	0.18	0.18	0.18	0.18	0.18	0.21	0.21

Robust z statistics in parentheses.
* significant at 10%; ** significant at 5%; *** significant at 1%.
All regressions include year fixed effects.

The addition of the WAEMU dummy, if anything, significantly improves the statistical significance of the results, especially for change in terms of trade and private investment. For example, the public investment variable becomes significant, implying that increases in public investment are associated with a decline in the probability of decelerations. Interestingly, the introduction of the WAEMU dummy does not reduce the significance of the REER variable.

In order to test the robustness of the results, different methods are used—fixed and random effects models. The results are generally robust to different specifications (Appendix 2).

D. Putting It All Together

The results shown above are that the variables most closely associated with growth accelerations and decelerations in SSA are terms of trade, private investment, FDI, civil tension, and inflation. The impact of the variables on accelerations is not generally the mirror

opposite of that on decelerations. In all cases, the WAEMU dummy is statistically different, especially in the case of growth decelerations. This implies that the WAEMU region is quite different from the rest of SSA, especially with regard to decelerations, further reconfirming the analysis in Section II.

In line with Imam and Salinas (2008), from the foregoing, it is evident that the best performers in the WAEMU (Burkina Faso and Mali, and to a lesser extent, Benin and Senegal), have gotten important things right, especially macroeconomic and political stability. As a result, they were able to have higher levels of public investment and attract more FDI. This enabled them to have a higher frequency of growth accelerations. More, fundamentally, they generally avoided debilitating episodes of growth decelerations.

VI. CONCLUDING REMARKS

The paper has described in detail the disappointing quest for growth in the WAEMU. Starting with a benchmarking approach, it has shown that while growth during 1980-94 was broadly similar to other SSA countries, there has been a divergence vis-à-vis other SSA countries, especially the high-performing ones, after 1995 ("the great African takeoff"). This is mainly the result of significant reduction in growth deceleration frequency in other SSA countries, while the WAEMU often did not avoid them.

The empirical part has clearly shown that accelerations are mainly explained by both exogenous shocks (terms of trade), macroeconomic management (inflation, investment, etc.), as well as political stability. It has also shown that the WAEMU region is clearly different from the rest of the SSA. That said, there is heterogeneity among WAEMU countries themselves. Some WAEMU countries such as Burkina Faso and Mali have shown that with improved economic management, structural reforms and political stability, the quest for growth in the WAEMU need not be fruitless.

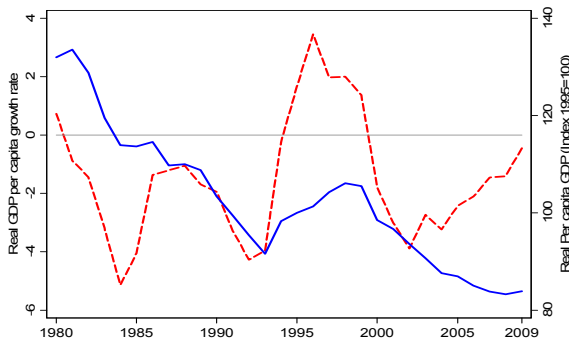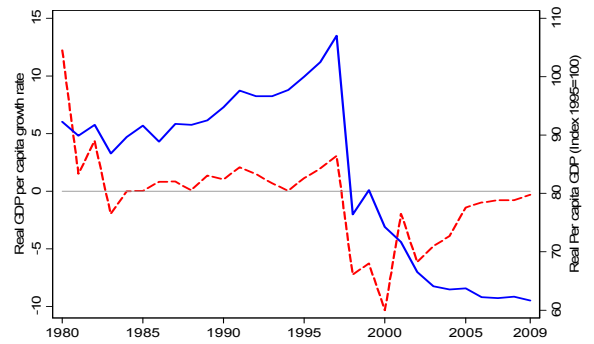# Appendix 1: GDP per Capita and Growth Rates by Country
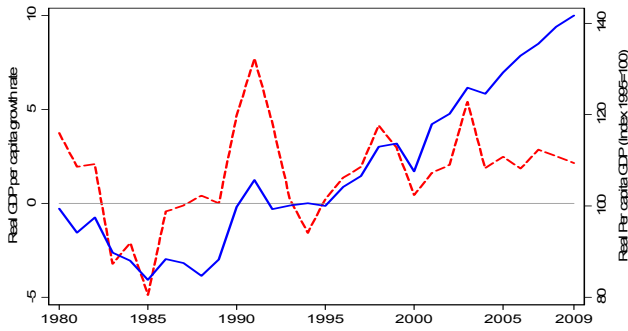
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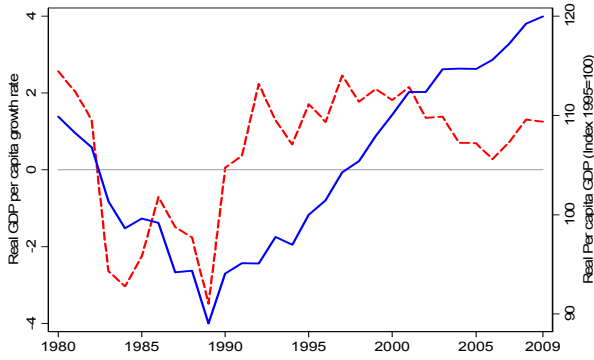
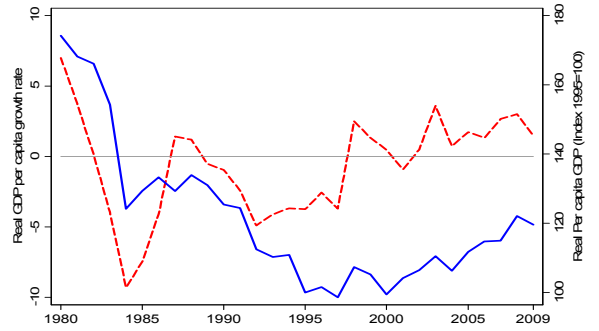## Burkina Faso
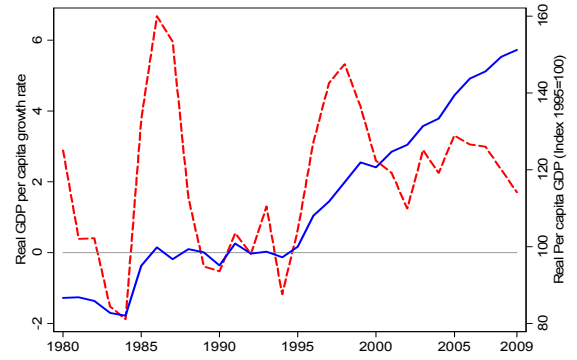
Côte d'Ivoire
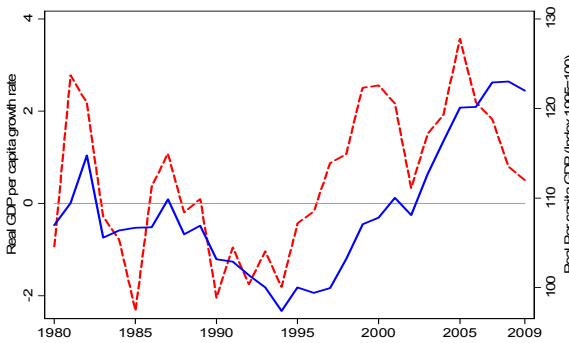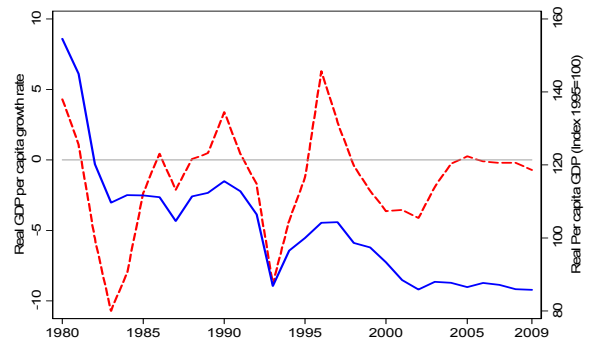

Guinea-Bissau

Mali

Niger

Senegal

Togo

Appendix 2. Sub-Saharan Africa: Robustness Tests for Determinants of Growth Accelerations and Decelerations

	Dependent variable: Growth Acceleration Dummy Fixed Effect						
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Change in ToT	0.001	0.001	0.001	0.001	0.001	0.001	0.001
	(1.15)	(1.15)	(1.16)	(1.04)	(0.84)	(0.80)	(0.82)
Change in Priv. Inv.	0.013	0.013	0.026	0.021	0.019	0.020	0.020
	(1.66)*	(1.66)*	(3.88)***	(2.80)***	(2.47)**	(2.28)**	(2.23)**
Civil tension	-0.065	-0.064	-0.064	-0.063	-0.058	-0.057	-0.057
	(3.72)***	(3.63)***	(3.63)***	(3.56)***	(3.13)***	(3.05)***	(3.03)***
Change in Pub. Inv.		-0.002	0.005	0.005	0.006	0.006	0.007
		(0.22)	(0.70)	(0.64)	(0.69)	(0.72)	(0.74)
Inflation			-0.000	-0.000	-0.000	-0.000	-0.000
			(5.66)***	(4.98)***	(4.71)***	(3.82)***	(3.70)***
Change in FDI				0.014	0.016	0.016	0.017
				(2.21)**	(2.43)**	(2.44)**	(2.52)**
Credit to the priv. sector					0.000	0.000	0.000
					(0.15)	(0.14)	(0.13)
Change in Openness						-0.001	-0.002
						(0.24)	(0.40)
Change in REER							0.000
							(0.93)
Observations	754	754	754	754	724	724	718
Number of Countries	37	37	37	37	37	37	37
WAEMU countries	8	8	8	8	8	8	8
R^2	0.22	0.22	0.24	0.24	0.25	0.25	0.25

Robust t statistics in parentheses.
* significant at 10%; ** significant at 5%; *** significant at 1%.
All regressions include year fixed effects.

	Dependent variable: Growth Acceleration Dummy Random Effect						
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Change in ToT	0.002 (1.75)*	0.002 (1.76)*	0.002 (1.73)*	0.001 (1.65)*	0.001 (1.50)	0.001 (1.48)	0.001 (1.47)
Change in Priv. Inv.	0.018 (2.59)***	0.017 (2.62)***	0.025 (3.93)***	0.016 (2.30)**	0.015 (2.12)**	0.016 (1.91)*	0.015 (1.86)*
Civil tension	-0.012 (1.00)	-0.012 (0.92)	-0.005 (0.39)	-0.008 (0.62)	-0.003 (0.21)	-0.003 (0.24)	-0.006 (0.45)
Change in Pub. Inv.		-0.003 (0.45)	0.000 (0.04)	0.000 (0.01)	0.001 (0.08)	0.001 (0.09)	0.001 (0.13)
Inflation			-0.000 (4.28)***	-0.000 (3.40)***	-0.000 (3.38)***	-0.000 (2.47)**	-0.000 (2.40)**
Change in FDI				0.022 (3.32)***	0.023 (3.50)***	0.023 (3.55)***	0.024 (3.64)***
Credit to the priv. sector					-0.000 (0.28)	-0.000 (0.28)	-0.000 (0.27)
Change in Openness						-0.000 (0.07)	-0.001 (0.17)
Change in REER							0.000 (0.93)
WAEMU Dummy							-0.096 (1.76)*
Observations	898	898	898	898	868	868	862
Number of Countries	37	37	37	37	37	37	37
WAEMU countries	8	8	8	8	8	8	8
R^2	0.10	0.10	0.11	0.12	0.12	0.12	0.12

Robust z statistics in parentheses.
* significant at 10%; ** significant at 5%; *** significant at 1%.
All regressions include year fixed effects.

| | **Dependent Variable: Growth Deceleration Dummy** | | | | | | |
| | **Fixed Effect** | | | | | | |
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Change in ToT	-0.005	-0.005	-0.005	-0.005	-0.005	-0.005	-0.004
	(4.67)***	(4.67)***	(4.69)***	(4.78)***	(4.68)***	(4.61)***	(4.70)***
Change in Priv. Inv.	-0.022	-0.022	-0.027	-0.031	-0.029	-0.027	-0.022
	(4.17)***	(4.12)***	(4.32)***	(4.15)***	(3.96)***	(3.35)***	(2.73)***
Civil tension	-0.008	-0.008	-0.008	-0.007	-0.012	-0.012	-0.013
	(0.61)	(0.53)	(0.55)	(0.49)	(0.85)	(0.79)	(0.89)
Change in Pub. Inv.		-0.001	-0.004	-0.004	-0.011	-0.010	-0.008
		(0.17)	(0.63)	(0.67)	(2.16)**	(2.01)**	(1.67)*
Inflation			0.000	0.000	0.000	0.000	0.000
			(3.38)***	(3.32)***	(3.83)***	(2.01)**	(1.38)
Change in FDI				0.011	0.008	0.009	0.005
				(1.44)	(1.21)	(1.23)	(0.75)
Credit to the priv. sector					0.000	0.000	-0.000
					(0.25)	(0.24)	(0.15)
Change in Openness						-0.001	-0.003
						(0.23)	(0.76)
Change in REER							0.001
							(6.63)***
Observations	754	754	754	754	724	724	718
Number of Countries	37	37	37	37	37	37	37
WAEMU countries	8	8	8	8	8	8	8
R^2	0.32	0.32	0.32	0.32	0.33	0.33	0.35

Robust t statistics in parentheses.
* significant at 10%; ** significant at 5%; *** significant at 1%.
All regressions include year fixed effects.

	Dependent Variable: Growth Deceleration Dummy Random Effects						
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Change in ToT	-0.005	-0.005	-0.005	-0.005	-0.005	-0.005	-0.005
	(5.60)***	(5.59)***	(5.58)***	(5.62)***	(5.50)***	(5.41)***	(5.51)***
Change in Priv. Inv.	-0.022	-0.022	-0.025	-0.030	-0.028	-0.026	-0.022
	(4.76)***	(4.64)***	(5.05)***	(4.78)***	(4.70)***	(3.92)***	(3.45)***
Civil tension	0.002	0.003	-0.000	-0.001	-0.006	-0.006	-0.004
	(0.26)	(0.36)	(0.00)	(0.10)	(0.61)	(0.68)	(0.39)
Change in Pub. Inv.		-0.003	-0.005	-0.005	-0.012	-0.012	-0.010
		(0.47)	(0.81)	(0.82)	(2.46)**	(2.24)**	(2.07)**
Inflation			0.000	0.000	0.000	0.000	0.000
			(3.16)***	(3.21)***	(4.15)***	(1.84)*	(1.45)
Change in FDI				0.011	0.008	0.008	0.006
				(1.75)*	(1.34)	(1.36)	(0.94)
Credit to the priv. sector					0.001	0.001	0.000
					(0.87)	(0.92)	(0.60)
Change in Openness						-0.001	-0.003
						(0.39)	(0.76)
Change in REER							0.001
							(7.29)***
WAEMU Dummy							0.041
							(0.78)
Observations	898	898	898	898	868	868	862
Pseudo R^2	0.18	0.18	0.18	0.17	0.17	0.19	0.19
Number of Countries	37	37	37	37	37	37	37
WAEMU countries	8	8	8	8	8	8	8

Robust z statistics in parentheses.
* significant at 10%; ** significant at 5%; *** significant at 1%.
All regressions include year fixed effects.

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