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Globalization, governance, and the economic performance of Sub-Saharan Africa

Voxi Heinrich Amavilah

Abstract: I estimate and compare the effects of globalization, governance, and conventional factors and forces on the economic performance of Sub-Saharan African countries. The analysis finds that both physical and human capita as well as unexplained technical residuals affect economic performance, although human capital and technical change do not always have statistically significant impacts. The policy implication of these results calls for improvement of all three variables. Economic performance also varies with measures of globalization, suggesting that globalization is good for economic performance, but it is social globalization rather than economic globalization that is most beneficial. On average the quality of institutions are important to economic performance, but, when disaggregated, different measures of institutional quality have different effects on performance. The results are reasonable, even as there remains a need to improve them. **JEL Code:** O55, O43, F35, O47

Keywords: Globalization, governance, economic performance, Sub-Saharan Africa

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1. Introduction

A major argument against globalization is that it hurts poor people. Since most poor people live in developing countries, proponents of anti-globalization defend their protestations as attempts to save poor countries. In their counterargument advocates of globalization charge that most developing countries are poor not because of globalization, but rather because of the poor quality of their institutions and the equally poor governance such institutions provide. Stuck in the middle are policymakers for Sub-Saharan African countries (SSACs). Literally here you have an appropriate circumstance for the African proverb, “When two elephants fight, it is the grass beneath them that suffers the most.” Yet, the experiences of SSACs are often cited in support of both the anti-globalization and governance arguments, even though there is little to no comparative evidence of the effects of globalization and governance on the economic performance of SSACs.

This paper estimates and compares the effects of globalization and governance on the economic performance of 35 SSACs.¹ The analysis utilizes a simple production function approach in which economic activity depends on measures of globalization, governance, and some controls. It finds that globalization and governance significantly affect the performance of these countries, but different measures of globalization and governance have different impacts. The effects of physical capital are robust, while those of the health and education components of human capital tend to switch signs. Based on the findings one can conclude that SSACs gain from increased globalization and improved governance, but conventional factors and forces are important as well.

The structure of the paper is as follows: Section 2 briefly outlines the literature behind the empirical set-up in Section 3. Section 4 presents the results and their implications for policy and further research. The last section draws a tentative conclusion.

2. Sources of the recent economic performance of Sub-Saharan African countries

I argue that the recent economic performance of Sub-Saharan African countries (SSACs) has depended on globalization, governance, and domestic resources serving as controls.

2.1 Economic performance and globalization

Although globalization means different things to different people (see Dreher, Gaston, and Martens, 2008), there is now little doubt that it affects the economic performance of countries (Waters, 1995). What Dani Rodrik (1997) calls “tensions” of globalization emanate from the magnitude and

¹The 35 countries are: 1. Benin, 2. Botswana, 3. Burkina Faso, 4. Burundi, 5. Cameroon, 6. Central African Republic, 7. Chad, 8. Congo, Democratic Republic, 9. Congo, Republic of, 10. Cote D’Ivoire, 11. Ethiopia, 12. Gabon, 13. Gambia, 14. Ghana, 15. Guinea Bissau, 16. Kenya, 17. Lesotho, 18. Madagascar, 19. Malawi, 20. Mauritius, 21. Mozambique, 22. Namibia, 23. Niger, 24. Nigeria, 25. Rwanda, 26. Senegal, 27. Sierra Leone, 28. South Africa, 29. Sudan, 30. Swaziland, 31. Tanzania, 32. Togo, 33. Uganda, 34. Zambia, and 35. Zimbabwe.

distribution of the gains from globalization. Citing Zimbabwe as an example Arne Bigsten and Dick Durewall (2002) argue that poor policy pursuits against market integration, especially against “increased exposure to international prices and returns on assets” (p.18) have led to the decline in economic performance and globalization in Zimbabwe.

Axel Dreher (2003) does not only provide an excellent review of different angles to quantifying the effects of globalization on economic performance, he also develops indices covering aggregate and disaggregate aspects of globalization for 123 countries during the 1970-2000 period. His analysis concludes that “... globalization is good for growth [in the sense that] countries that globalized more, experienced high growth rates” (p.14, [added]). In this conclusion the African countries of Rwanda and Zimbabwe are among the least globalized, as well as poorest performing, countries. Dreher further observes that these countries “have poor institutions which repress growth and promote poverty”. Using Dreher’s methodology KOF now publishes globalization data annually, and one aspect of this paper is to estimate and compare the effects on the economic performance of 35 SSACs of Dreher-KOF globalization and governance as a measure of institutional quality.

2.2 Economic performance and governance

In his presidential address to the American Economic Association Avinash Dixit (2009) observes that “good governance is needed to secure three essential prerequisites of market economies: security of property rights, enforcement of contracts, and collective action” (p. 5). Although Dixit also calls for a better understanding of how governance actually influences economic performance, before anyone can recommend institutional reform, increasing evidence is already pointing to institutions and institutional quality as essential elements of the growth of both output and resource productivity. This is not all new since classical economists like Adam Smith (1773 [1776]), and new classical economists like W. Arthur Lewis (1965), as well as contemporary theorists like North (1990), and Gradstein and Konrad (2006) have touched upon the role in economic performance of institutions and institutional quality. Aron’s (2000) review of the links between institutions and the economic performance of developing countries (see Table 1, pp. 108 - 113) demonstrates that countries with “good” institutions tend to do better than countries without or with “bad” institutions. What remains controversial is how to quantify the effects of institutions. Some experts, like Sachs and Warner (1997), and Bloom and Sachs (1998) use geography to describe institutional effects on growth, while others turn to proxies like constitutions, political freedoms and social justice.

In all this controversy, governance has emerged as the preferred indicator among other measures of institutional quality - which justifies what now is called the Kaufman, Kraay, Zoido- and Mastrzzi (KKZM) index of governance (Kaufman and Kraay, 2008). Quibria (2006, p. 104), for example, shows that the KKZM composite correlates positively with the economic growth of a number of Asian countries. The World Bank’s Worldwide Governance Indicators (WGI) is the most comprehensive of the 18 or so common indices of governance (see www.worldbank.org/wbi/governance/). It covers 212 countries and territories over 1996-2006, and it has six dimensions: (a) voice and accountability, (b) political stability and absence of violence, (c) government effectiveness, (d) regulatory quality, (e) rule of law, and (f) control of corruption. All six dimensions, individually and collectively, can

make a statement about economic performance. For instance, where the rule of law is absent or weak, property rights will be fragile, markets dysfunctional, and economic performance most likely unsustainable (Acemoglu, Johnson and Robinson, 2002).

In October 2006, the Mo Ibrahim Foundation at Harvard University's Kennedy School of Government released its own Mo Ibrahim African governance index (MIGI). Based on 2005 data, MIGI expands on a similar series for 2000 and 2002, and covers 48 countries. The compilers and financier of the MIGI claim that it is geographically more comprehensive than similar indices, and addresses biases that afflicted competing indicators like the WGI. (<http://www.moibrahimfoundation.org/index/>).

2.3 Economic performance and domestic resource controls

The focus of this paper is on globalization and governance. However, in estimating the effects on economic performance of globalization and governance I use domestic resources as controls. Extant literature on the primary sources of economic performance is vast and now well understood. It suggests that pre-independence the growth of SSACs was extensive growth, coming from the growth of labor, land (mainly mineral and agricultural commodities), and fixed capital in agriculture, and mining and quarrying (see Fafchamps, 2000, Amavilah, 1996). Tahari, Ghura, Akitoby, and Aka (2004) tell us that the slow growth of most SSACs that occurred during the 1960-2002 years depended on the accumulation of "objects" rather than "ideas"- to use Paul Romer's lingo. Only Botswana, Equatorial Guinea, Gambia, and Mauritius grew at rates exceeding four per cent per annum over the same time period (Basu, Calamitsis, Ghura, 2000, Acemoglu, Johnson, and Robinson (2001a, b, Amavilah, 2006). Overall capital accumulation contributed to growth more than labor. Beginning c. 1997 the number of African countries with growth rates above four per cent more than doubled. Tahari, Ghura, Akitoby, and Aka (2004) associate the recent growth with improved institutional quality, improved human capital, an improved macroeconomic policy environment, and the broadening of the export base from a narrow range of commodities to semi-processed goods. Amavilah (2006) presents evidence supporting the positive effects of macroeconomic policy on the performance of 46 African countries in 2004/2005. Moreover, O'Connell and Ndulu (2000) and Ndulu and O'Connell (1999) associate the performance of SSACs with capital accumulation, demographic changes, policy, institutions, political (in)stability, and total factor productivity (TFP), where TFP is measured as dependent on the number of years of schooling. In that sense TFP is the same thing as human capital (H). Drawing on Barro and Lee's (1996, 2000) base dataset for the value of human capital in economic performance, Benhabib and Spiegel (1994) show that most African countries lack the critical mass of H stock required for fast-growing TFP.

3. Empirical framework

From both W. Arthur Lewis (1965) and Paul Romer (1990, 1993, 1994) it is clear that economic performance depends on factors and forces. A number of forces underscore Africa's growth and decline. Key among them are technology and institutions, where technology is measured variously as TFP and/or Solow residual (A), and institutions, often proxied by governance. In a recent paper Jean-Claude Maswana (2006) associates poor performance of African countries with lack of technological

innovation and its underlying knowledge, and bad policies. These matters can all be reasonably accommodated in a production function model as the next subsection illustrates.

3.1 Model specifications

For a given state of technology (A_{it}), let the value of a production activity (Y_{it}) depend on a vector of domestic resources (X_{it}) serving as controls, and on another vector of state variables (Z_{it}), so that over time (t)

$$Y_{it} = F((A_{it}, X_{it}), Z_{it}), \quad i = 1, 2, 3, \dots, M; \quad t = 1, 2, 3, \quad (1)$$

where $I = 1, 2, 3, \dots, M$ are SSACs, and $t = 1, 2, 3$ are time periods. From here let $X_{it} = [N_{it}, H_{it}, K_{it}]$ and $Z_{it} = [Z_{1t}, Z_{2t}]$, for N_{it} = population, H_{it} = human capital, K_{it} = physical capital, Z_{1t} = measures of globalization, and Z_{2t} = measures of governance. Hence, assuming (1) is multiplicative in form gives Y_{it} as

$$Y_{it} = (A_{it} N_{it})^\alpha H_{it}^\beta K_{it}^{1-\alpha-\beta}. \quad (2)$$

For neatness let's drop the country (i) and time (t) indices, and follow Amavilah (2008a) in stating H as a function of quality N, i.e.,

$$H = e^{\phi q N}, \quad (3)$$

where q represents the education (literacy rate or years of schooling) and the health (life expectancy at birth) dimensions of H. Also, if globalization and governance are significant to an economic activity, one likely transmission channel is A. One can then argue that

$$A = e^{\gamma Z}. \quad (4)$$

Now plugging (3) and (4) into (2) and simplifying gives

$$Y = e^{\alpha\gamma Z + \beta\phi q N} N^{\alpha+\beta} K^{1-\alpha-\beta}. \quad (5)$$

The logarithmic N intensity of (5) is per capita gross domestic product (GDPPC = y)

$$y = \alpha\gamma Z + \beta\phi q + (1 - \alpha - \beta)k, \quad (6)$$

where $y = \ln(Y/N)$ and $k = \ln(K/N)$. Then based on (6) the estimation equation is

$$y = \theta_0 + \theta_1 Z + \theta_2 q + \theta_3 k + \mu, \quad (7)$$

defining $\theta_0 = \text{constant}$, $\theta_1 = \alpha\gamma = \text{effects of globalization and/or governance}$, $\theta_2 = \beta\phi = \text{effects of the education and health dimensions of H}$, $\theta_3 = (1 - \alpha - \beta) = \text{the effect of physical capital investment on economic performance}$, and $\mu = \text{the error term}$. I use the OLS estimator to estimate (7), making the usual adjustments for statistical problems. In this version of the paper, I do not drop globalization and governance measures even when statistically insignificant.

3.2 Data and data sources

The dependent variable (y) is real GDP per capita in terms of purchasing power parity (PPP), drawn from the Penn World Table (PWT) 6.2, where it appears as “rgdptt.” Figure 1 shows that most countries fall in the \$2000 GDPPC range. Moreover, there are fewer and fewer countries as one climbs the GDPPC ladder, of which Mauritius with a GDPPC of \$16400 is the leader.

Variable (K, k) is a proxy for physical capital; it is gross capital formation as a percent of GDP. This data is available in the IMF’s *International Financial Statistics Yearbook* (2007). Most SSACs spend an average of 19% on gross fixed capital formation, not uncommon among developing economies, but still at the lower end of K-formation in fast growing developing economies. Figure 2a is about this variable.

Two q dimensions of human capital (H) are education and health. Health is measured as life expectancy at birth (Life), and plotted in Figure 2b. Education (School) is the average years of schooling. When data was missing the *apparent average* for Africa is used in its place (see Figure 2c). Both the education and health statistics came from World Development Indicators (WDI) reports, although such data is widely available. Figure 2b shows that the health of these countries is clustered between 40 and 60 years, corresponding to a GDPPC of approximately \$2500. Figure 2c reveals that countries with under 10 years of schooling have an average GDPPC of only \$2200. Beyond 10 years of schooling, GDPPC more than doubles, and/or triples for some countries.

For governance = institutional quality (Z2) I use two different indicators of institutional quality: the World Bank’s World Governance Indicators (WGI) and the Mo Ibrahim Index of African Governance (MIGI). Again, there are six dimensions for WGI as fully explained on <http://info.worldbank.org/governance/wgi/index.asp>. I have added a simple average of WGI. This, like other dimensions, lies in the -2.5 to 2.5 interval. Whenever necessary in this paper I shorten WGI indices as follows:

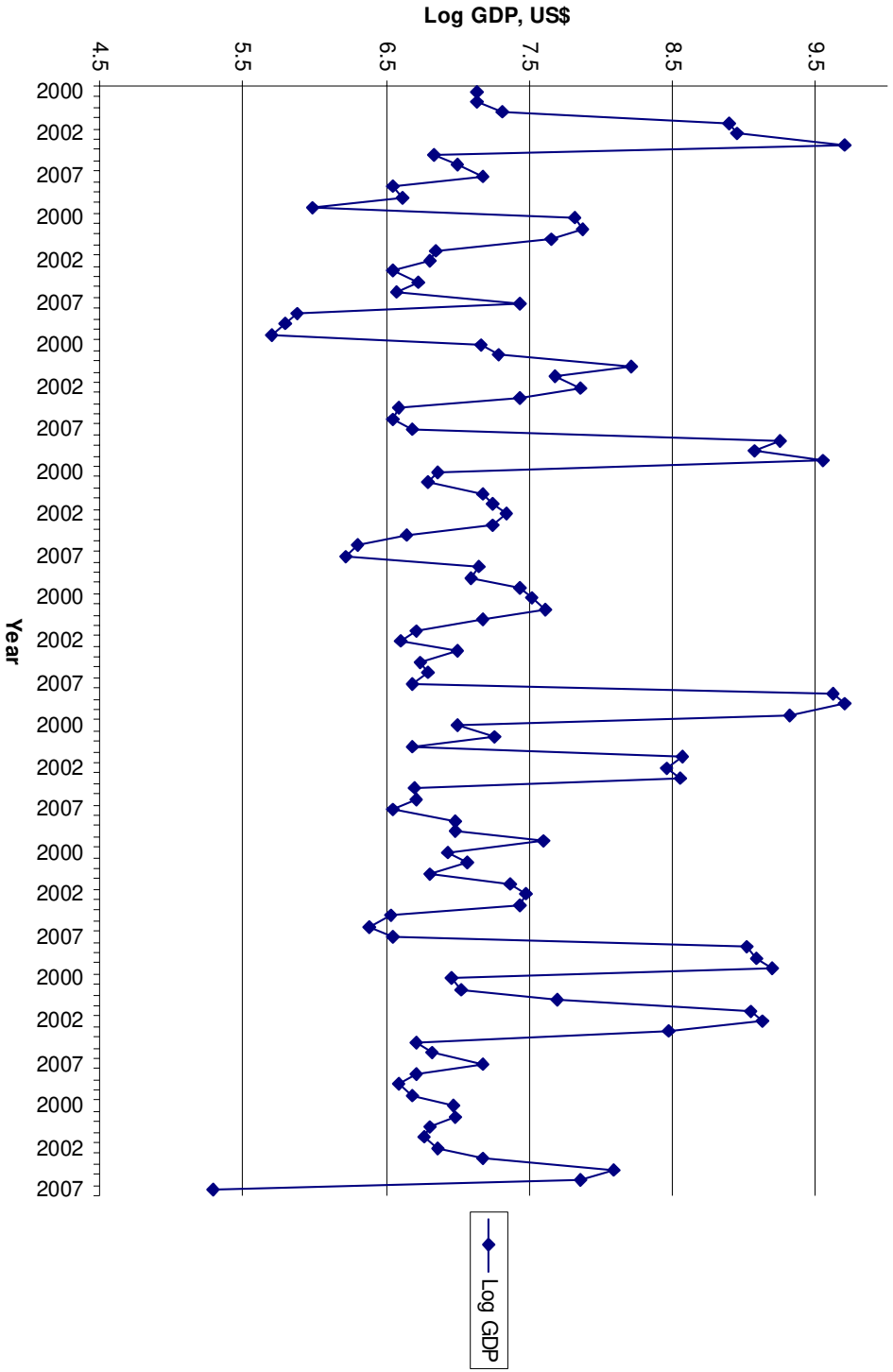


Figure 1 - Real GDP of African countries, 2000, 2002, 2007

Figure 2a - Capital versus real GDP per capita of African countries, 2000, 2002, 2007

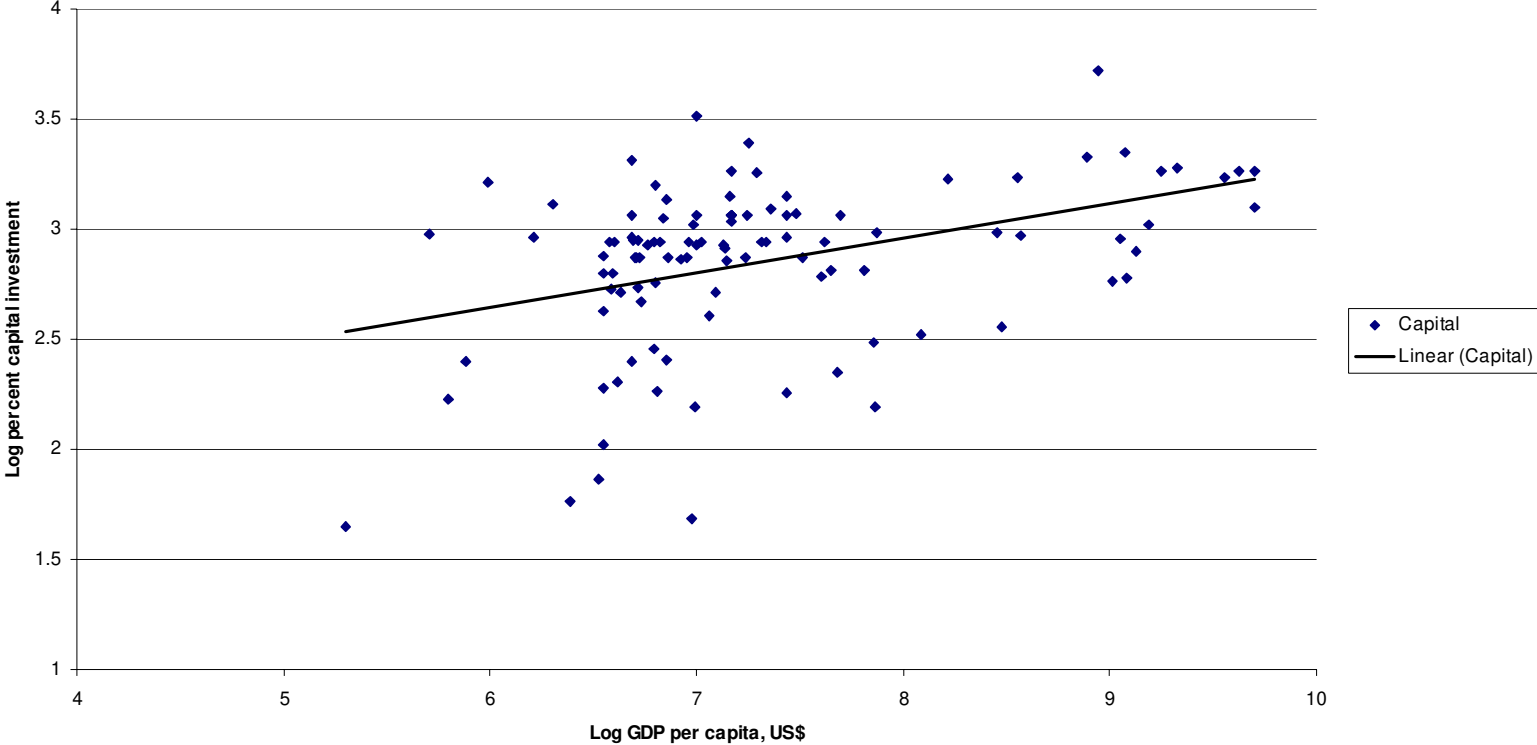


Figure 2b - Health versus real GDP per capita of African countries, 2000, 2002, 2007

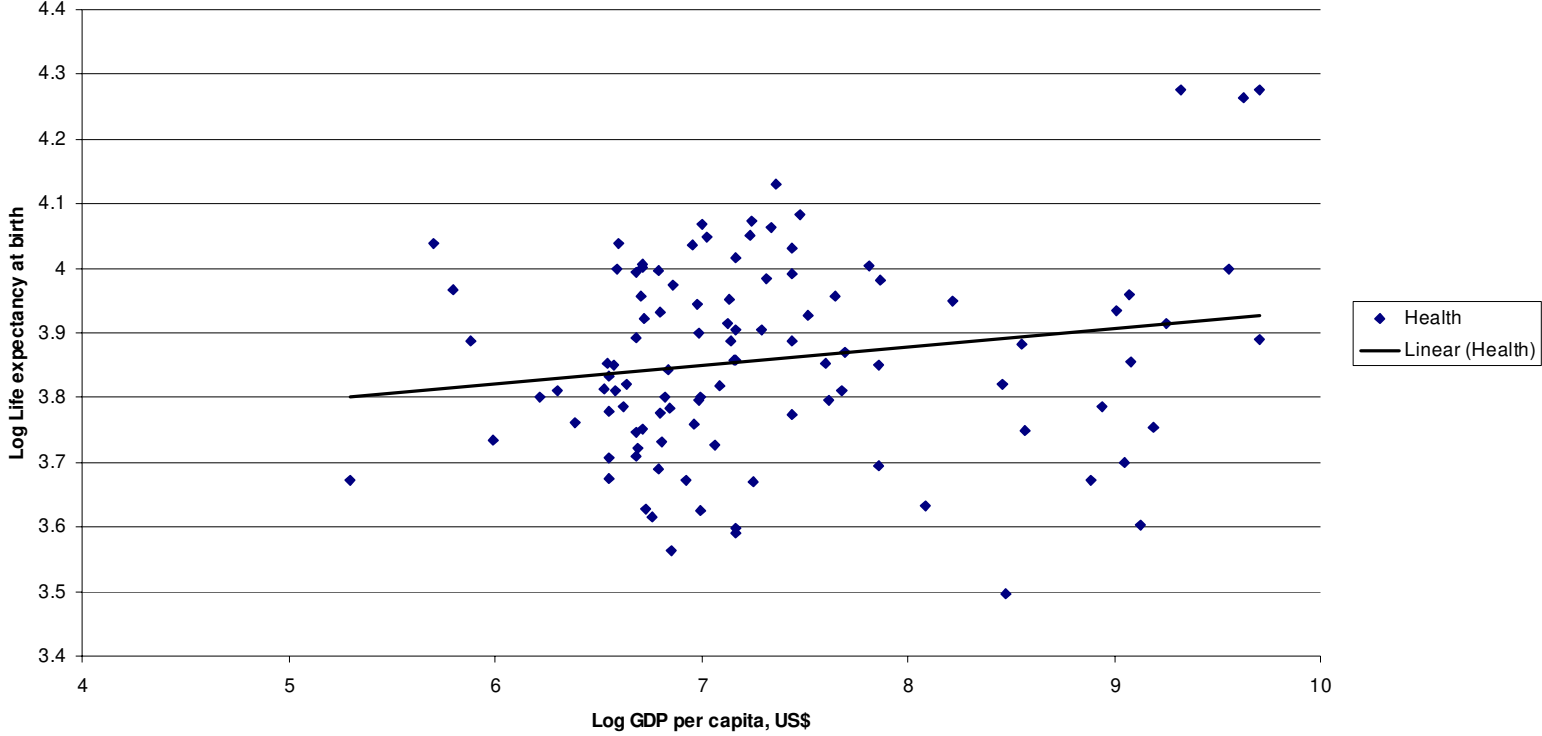


Figure 2c - Education versus real GDP per capita of African countries, 2000, 2002, 2007

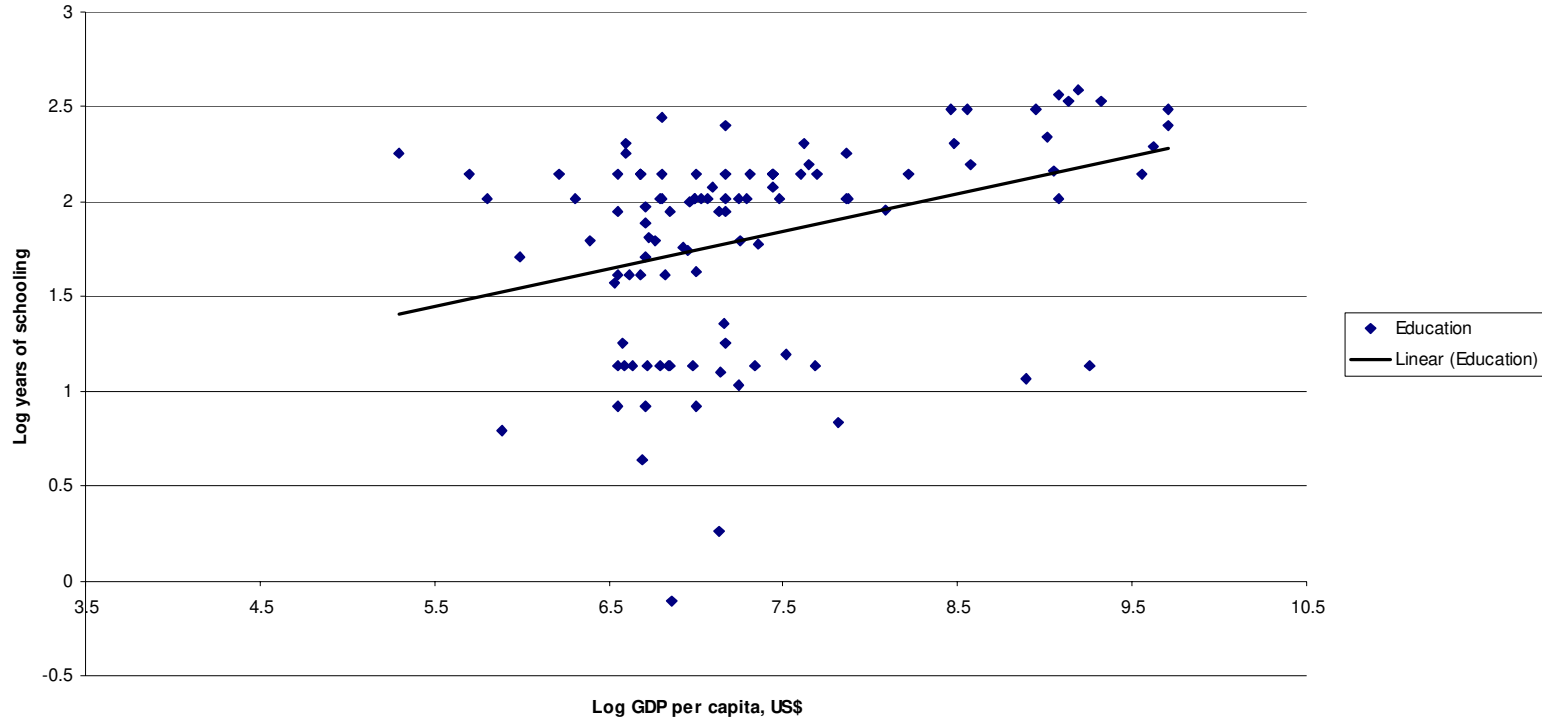


Figure 3a - WGI versus real GDP per capita of African countries, 2000, 2002, 2007

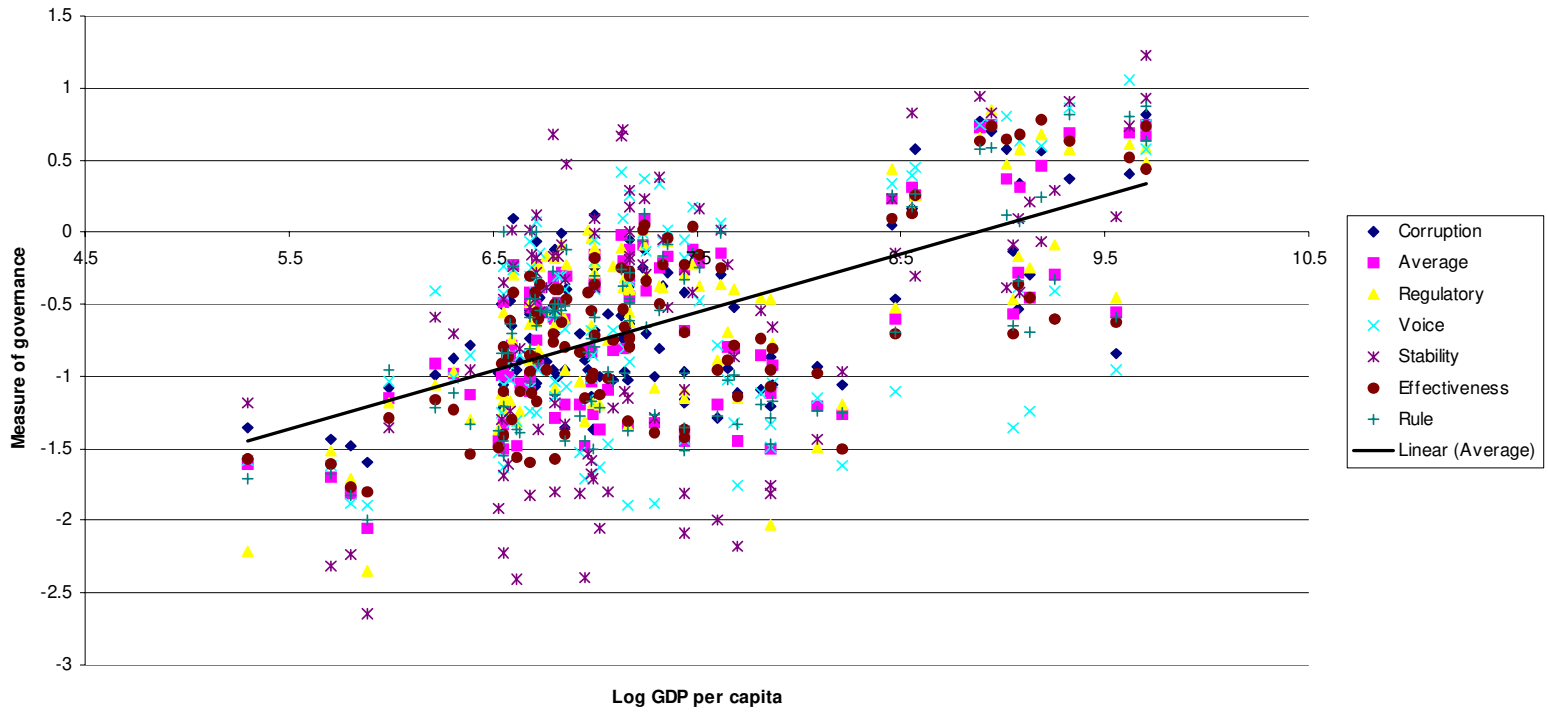


Figure 3b - MIGI versus real GDP per capita of African countries, 2000, 2002, 2007

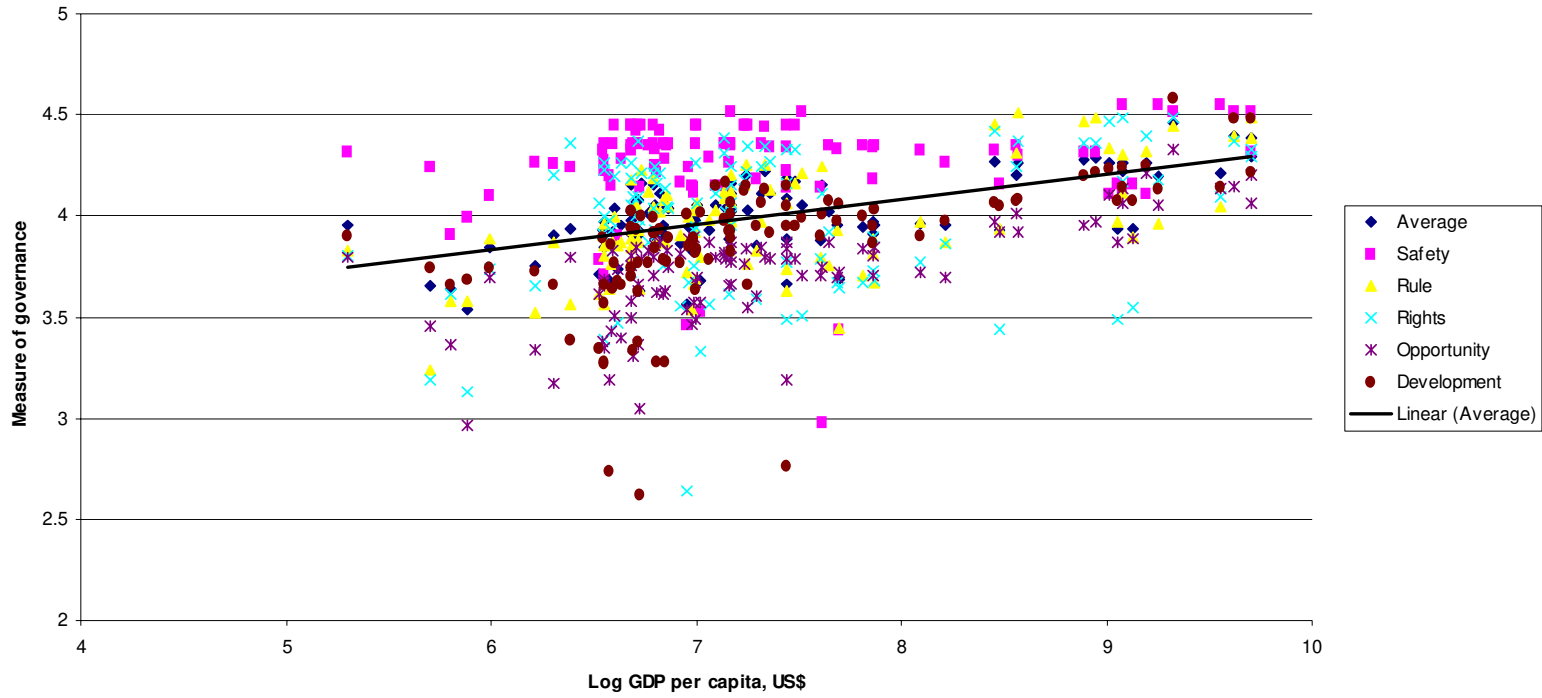
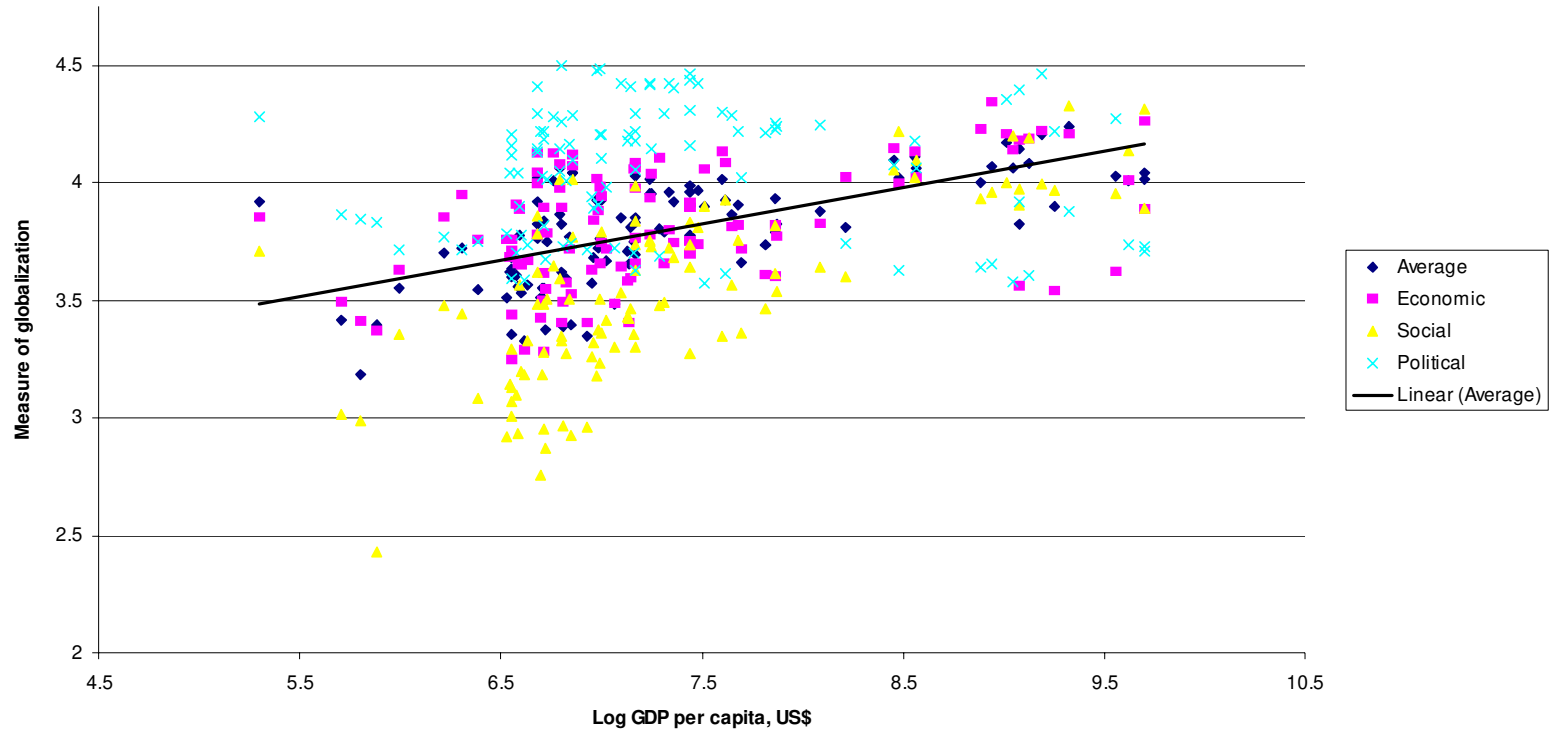


Figure 4 - KOF globalization and real GDP per capita of African countries, 2000, 2002, 2007



1. WGI_{cor} = control of corruption
2. WGI_{reg} = regulatory quality
3. WGI_{voice} = voice and accountability
4. WGI_{stab} = political stability and absence of violence
5. WGI_{eff} = government effectiveness
6. WGI_{rule} = rule of law
7. WGI_{ave} = average WGI

There is considerable variation across indices and countries. Even so, the average quality of institutions (WGI_{ave}) is positively related to GDPPC as Figure 3a indicates.

MIGI stands for the Mo Ibrahim African Governance index (<http://www.moibrahimfoundation.org/index/>). The index ranges from zero to 100%. Its dimensions in the worksheet are:

- MIGI_{ave} = average MIGI
- MIGI_{safe} = safety and security
- MIGI_{rule} = rule of law, transparency, and corruption
- MIGI_{irit} = participation and human rights
- MIGI_{op} = sustainable economic opportunity
- MIGI_{dev} = human (economic) development^b

Like WGI, MIGI also varies a lot across countries; however, Figure 3b shows average MIGI (MIGI_{ave}) increasing.

Globalization (Z1) data are Dreher-KOF data available and explained at <http://globalization.kof.ethz.ch/> and in Axel Dreher (2003). They come in one aggregate and three disaggregates. The aggregate is called the ‘Index of Globalization’ (aGlobe). The three disaggregates are the ‘Index of Economic Globalization’ (eGlobe), ‘Index of Social Globalization’ (sGlobe), and the ‘Index of Political Globalization’ (pGlobe).^c Figure 4 portrays the data.

4. Results

Estimation results are in Tables 1 - 4. For instance, Estimation 1.1 shows that the health dimension of human capital (H) has a statistically insignificant positive effect on the economic performance of SSACs. However, the largest influence on performance comes from the average measure of globalization (aGlobe) and from WGI_{ave} (the average measure of WGI governance). Thus, per capita GDP is highly elastic with respect to globalization and governance. A unit improvement in globalization and governance increases per capita GDP by two-fifth of one percent.

^b Documentation of this index sometimes uses human development and economic development interchangeably. I take that for granted.

^cIn previous studies I included regional dummies in (6), but the results were not informative enough to warrant doing so here.

Table 1 - Resources, globalization, and WGI governance, and the economic performance of Sub-Saharan Africa, 2000 - 2007

Parentheses are t-values at 5% significance level

Variable	Estimation 1.1	Estimation 1.2	Estimation 1.3	Estimation 1.4
Constant	1.102(1.137)	0.755(0.645)	2.517(2.383)	1.915(1.554)
Controls				
• Capital	0.129 (1.850)	0.143(2.042)	0.266(2.969)	0.268(2.619)
• Education	0.052 (1.351)	0.177(4.046)	-0.018(-0.539)	0.097(2.093)
• Health	0.038 (0.196)	0.256(1.054)	0.444(2.384)	0.065(2.852)
Globalization				
• Average	1.528(11.342)	1.401(8.857)		
• Economic			0.013(0.076)	0.108(0.566)
• Social			1.302(8.928)	1.151(7.091)
• Political			-0.509(-4.659)	-0.537(-4.423)
Governance (WGI)				
• Average	0.433(6.677)		0.207(2.328)	
• Regulatory		0.104(0.999)		0.219(2.297)
• Voice		-0.302(-4.1190)		-0.136(-1.648)
• Stability		-0.027(-0.547)		-0.039(-0.758)
• Effectiveness		0.675(5.246)		0.627(5.317)
• Rule of Law		0.215(1.661)		-0.160(-1.256)
Summary Statistics				
• Buse R-square [Raw]	0.6471[0.9974]	0.7887[0.9056]	0.7973[0.9999]	0.7553[0.9976]
• DW [ρ]	1.204[-0.012]	1.256[-0.029]	1.129[0.052]	1.344[-0.021]

Table 2 - Resources, globalization, and MIGI governance, and the economic performance of Sub-Saharan Africa, 2000 - 2007

Parentheses are t-values at 5% significance level

Variable	Estimation 2.1	Estimation 2.2	Estimation 2.3	Estimation 2.4
Constant	-4.577(-3.027)	-4.120(-3.994)	-1.071(-0.757)	-2.992(-2.489)
Controls				
• Capital	0.312(4.519)	0.274(4.428)	0.289(3.572)	0.385(4.519)
• Education	0.021(0.505)	-0.089(-2.847)	-0.014(-0.434)	-0.066(-1.8385)
• Health	0.384(1.674)	0.291(1.779)	0.752(3.659)	0.383(1.735)
Globalization				
• Average	1.356(9.774)	1.172(7.450)		
• Economic			-0.071(-0.504)	-0.021(-0.129)
• Social			1.156(6.610)	0.452(2.502)
• Political			-0.655(-7.869)	-0.263(-2.662)
Governance (MIGI)				
• Average	1.077(3.519)		0.891(2.650)	
• Safety		-0.434(-3.689)		-0.286(-3.201)
• Rule of Law		0.875(4.717)		0.999(6.212)
• Rights		-0.165(-1.576)		-0.154(-1.659)
• Opportunities		1.312(9.563)		1.593(8.606)
• Development		-0.173(-0.996)		-0.163(-0.902)
Summary Statistics				
• Buse R-square [Raw]	0.6333[0.9987]	0.7317[0.9982]	0.7515[0.9991]	0.7939[0.9968]
• DW [p]	1.047[0.063]	1.318[-0.036]	1.158[0.024]	1.389[-0.059]

Table 3 - Resources, and globalization *or* WGI governance, and the economic performance of Sub-Saharan Africa, 2000 - 2007

Parentheses are t-values at 5% significance level

Variable	Estimation 3.1	Estimation 3.2	Estimation 3.3	Estimation 3.4
Constant	7.299(7.633)	7.317(6.493)	-2.892(-3.571)	1.728(1.728)
Controls				
• Capital	0.252(2.424)	0.131(1.115)	0.331(4.356)	0.282(2.804)
• Education	0.181(3.989)	0.251(6.037)	-0.006(-0.258)	-0.026(-0.744)
• Health	-0.161(-0.716)	-0.098(-0.352)	0.744(3.917)	0.456(2.206)
Globalization				
• Average			1.654(11.718)	
• Economic				-0.026(-0.169)
• Social				1.308(9.178)
• Political				-0.365(-4.043)
Governance (WGI)				
• Average	0.689(7.56)			
• Regulatory		0.339(3.105)		
• Voice		-0.239(-2.609)		
• Stability		-0.008(-0.139)		
• Effectiveness		0.717(4.738)		
• Rule of Law		0.021(0.0136)		
Summary Statistics				
• Buse R-square [Raw]	0.5170[0.9988]	0.6187[0.9981]	0.6801[0.9992]	0.5156[0.9992]
• DW [ρ]	1.139[0.046]	1.177[0.029]	1.221[0.027]	1.264[-0.012]

Table 4 - Resources, and globalization *or* MIGI governance, and the economic performance of Sub-Saharan Africa, 2000 - 2007

Parentheses are t-values at 5% significance level

Variable	Estimation 4.1	Estimation 4.2	Estimation 4.3	Estimation 4.4
Constant	-2.691(-1.862)	-3.300(-3.016)	-2.892(-3.571)	1.748(1.728)
Controls				
• Capital	0.313(3.222)	0.460(6.876)	0.331(4.355)	0.282(2.804)
• Education	0.018(0.420)	-0.054(-1.742)	-0.006(-0.258)	-0.026(-0.744)
• Health	0.404(1.734)	0.225(1.137)	0.744(3.917)	0.456(2.206)
Globalization				
• Average			1.654(11.718)	
• Economic				-0.026(-0.169)
• Social				1.308(9.178)
• Political				-0.365(-4.043)
Governance (MIGI)				
• Average	1.843(5.192)			
• Safety		-0.349(-2.872)		
• Rule of Law		0.973(6.821)		
• Rights		-0.043(-0.515)		
• Opportunities		1.659(14.790)		
• Development		0.032(0.214)		
Summary Statistics				
• Buse R-square [Raw]	0.4465[0.9978]	0.7607[0.9985]	0.6801[0.9982]	0.5156[0.9992]
• DW [ρ]	1.053[0.065]	1.376[-0.061]	1.221[0.027]	1.264[-0.012]

At the disaggregate level the positive effect of WGIave breaks down into the positive effects of the rule of law, government effectiveness, and the quality of the regulatory regime, as well as negative effects of stability and freedom of expression. Ignoring the constant term, human and physical capital are important to economic performance. Moreover, when I disaggregate globalization and WGI governance (Estimation 1.3), it becomes clear that political globalization, voice, stability, and the rule of law undermine the economic performance of SSACs.

Across Table 1 the effects of capital investment on economic performance range from 13% to 27% - a range that includes the 19% average for SSACs. Aggregate H has a positive net effect on performance, but as Estimation 1.3 shows, the effects of the education component of H are negative whenever one considers disaggregate globalization and the WGI measures of institutional quality, which are overwhelmingly strong. In the case of globalization, social globalization has the strongest effect; political globalization is in fact negative. The regulatory quality of institutions, freedom of expression, political stability and peace, and the rule of law have adverse impacts on the performance of this group of SSACs.

In Table 2 economic performance depends on conventional factors and forces, globalization, and MIGI measures of institutional quality. The impact of education on performance continues to be negative, but assuming $H1 + H2 = H$, the net effect of H on performance is positive, while that of capital investment at 28 - 39% is higher than it is in Table 1. Moreover, aGlobe, sGlobe, and average MIGI (MIGIave) maintain their dominance, while pGlobe, rule of law, participatory and human rights, as well as the level of economic development, are drags on economic performance. WGI and MIGI are not perfectly comparable, but they yield consistent estimates insofar as one is willing to read between the lines.

From Table 3 the health and education components of H keep switching depending on which other variables are included. Since when negative the effects of H1 and H2 are also statistically insignificant, the economic meaning of the results is unaltered. However, the explanatory power falls, in some cases dramatically, so that the constant term is nearly the same size as the mean of the dependent variable. The same goes for Table 4, only in this case the constant term is biased downward - way downward.

5. Tentative conclusion

Utilizing a simple production function approach in which economic activity depends on measures of globalization, governance, and some controls, this paper estimates and compares the effects of globalization and governance on the economic performance of 35 SSACs. The analysis finds that both physical and human capital, as well as unexplained (exogenous) technical residuals, affect economic performance, although human capital and technical change do not always have a statistically significant impact. The policy implication of these results calls for improvement in all three variables. Economic performance also varies with measures of globalization. For instance, aGlobe has a very strong effect.

However, disaggregating aGlobe reveals that sGlobe and eGlobe have positive effects on economic performance, while pGlobe has a negative effect. Globalization is good for economic performance, especially social globalization.

The quality of institutions are also important to economic performance. Both WGIave and MIGIave have positive impacts. However, disaggregated, different measures of institutional quality have different effects on performance. The effects of WGI governance regulatory quality and government effectiveness are always positive, while freedom of expression and political stability are negative. According to MIGI governance, the drags on the economic performance of SSACs are safety and security of property rights, human rights, and the low level of economic development. Overall, the results of this paper make sense and are credible. However, there remains a need for fine-tuning the model, increasing the sample, and deploying alternative models and estimation techniques.

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Endnotes

1. The terms “rules of inference” and “transformations” in the manner used here are from [Wayne A. Wickelgren](#)'s *How to Solve Mathematical Problems*, Dover Publications, Inc., 1995.

2. See Amavilah's (2006) comment on AJR at [www.http://papers.ssrn.com/sol3/papers.cfm?abstract_id=911324](http://papers.ssrn.com/sol3/papers.cfm?abstract_id=911324).

3. Developing countries essentially trade in land to the extent they export mainly raw materials.

4. E.G. Siba (2008) makes a good effort of examining the factors that influence institutional quality in Sub-Saharan Africa.

5. A. Navas-Ruis (2007) provides a theoretical links of trade openness and institutional change to economic growth.