

IMF Working Paper

Inequalities and Growth in the Southern African Customs Union (SACU) Region

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African Department and Research Department

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Abstract

This paper applies the work of Berg and Ostry (2011) to the SACU region, to identify how inequalities have played a role in growth in each of these countries, and elaborates policy options to mitigate the effects of inequalities and foster growth. Lower income inequalities could lead to significant gains, as SACU countries could almost double the duration of their growth periods, with much lower inequalities. While reducing inequalities may be desirable, the design of policies to achieve such objective is not trivial. Policies targeting income inequalities at the sources are expected to be the most effective to reduce inequalities and promote growth. However, direct redistribution, if carefully crafted can also be very effective in reducing inequalities while limiting its potentially negative impact on growth.

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Contents	Page
I. Introduction	4
II. Challenges with Sustained Growth Periods	6
III. Analyzing Growth and Inequalities Within SACU	7
IV. Lowering Inequalities to Increase Growth Performances?.....	10
A. Potential Gains From Lower Inequalities	11
B. Reducing Inequalities to Strengthen Growth Performances	12
V. Conclusion	15
 Tables	
1. Effect of Increase of Different Factors on Growth Spell Duration.....	7
2. Average GDP per Capita Growth Rate, 2000–10.....	8
3. Comparing Gini Coefficients Between SACU countries.....	11
 Figures	
1. Contributing Factors to the End of Growth Spells in the SACU Region	9
2. Comparative Impact of Income Inequalities on Growth Spell Duration	12
3. Highest HIV/AIDS Prevalence Rates in the World, 2009	13
 References.....	 16
 Appendix I	 19
Appendix II	22

I. INTRODUCTION

The debate on the causal relationship between inequalities and growth has led to a vast stream of literature, since the work of Kuznets (1955). Recent studies (Berg and Ostry, 2011, Berg, Ostry and Zettelmeyer, 2012) have renewed the approach, by investigating how income inequalities¹ affect not only growth itself, but its duration. Their findings underscore how countries with lower income inequalities experience longer periods of continuous growth.

There are fundamentally three main channels through which inequalities can affect growth.

- Market imperfections favor a sub-optimal investment in human capital, which later on explain low growth performances. The poor face typically two constraints for their personal investment: their resources are so limited that they simply can't invest (Galor and Zeira, 1993, Piketty, 1997), or the return of human capital investment is too low, largely because of externalities² (e.g., Glomm and Ravikumar, 1992, Bénabou, 1993, 1996, 2002).
- Inequalities have strong implications on socio-political systems, and can thus either lead to redistribution demands that can discourage investment (Alesina and Rodrik, 1994, Person and Tabellini, 1994), or can even pave the way for financial (Kumhof and Rancière, 2010) or political (Saint Paul et Verdier, 1996, Engerman and Sokoloff, 2000, Bénabou, 2002) crises.
- Inequalities in the distribution of human capital, by making low-skilled labor relatively more abundant, can favor comparative advantages in low-skill intensive activities, thus reducing the return of human capital investment. It explains for example why many poor countries have not benefited from technological transfers from advanced countries and saw their development gap widening (Vila-Artadi and Sala-i-Martin, 2003). Others, on the contrary, managed to catch up, largely by benefiting from technological transfers (Coe, Helpman, and Hoffmaister, 1997). These transfers facilitated investment in more skill-intensive activities, eventually favoring convergence of income per capita.

The issue of inequality-growth relationship is particularly relevant for SACU countries, which face high income inequalities. These inequalities, partly rooted in historical factors,

¹ Measured by the Gini coefficient, which can vary from 0 (perfect equality: all agents have the same income) to 100 (the extreme case of perfect inequality, where only one agent receives all the income generated by the nation, and all the others receive nothing).

² Externalities are generated because the individual profitability of human investment is actually dependent on decisions made by other individuals. It would typically result in richer people congregating to generate – and benefit from – higher level of externalities for themselves, but leaving lower opportunities for the vast majority of the population.

also explain relatively weak growth performances, at least compared to the fast-growing emerging Asian countries.

This paper applies the work of Berg and Ostry (2011) to the SACU region, to identify how inequalities have played a role on growth in each of these countries, and to elaborate on policy options to medicate inequalities and foster growth. The main findings are as follows.

- Reducing income inequalities could lead to significant gains. In particular, SACU countries could almost double the duration of growth periods if they each had inequalities similar to select countries with same level of development.
- While reducing inequalities may be desirable, the design of policies to achieve such an objective is not trivial. Policies targeting income inequalities at the source are expected to be the most effective to reduce inequalities and promote growth. However direct redistribution, if carefully crafted can also be very effective in reducing inequalities while limiting its potentially negative impact on growth.

The rest of the paper is organized as follows. Section II presents inequalities and growth challenges in SACU countries, and applies the framework of Berg and Ostry (2001) to identify how reducing inequalities could potentially benefit growth. Then, section III discusses policy options, and section IV offers some conclusions.

II. CHALLENGES WITH SUSTAINED GROWTH PERIODS

One critical challenge for many emerging or developing economies relates to the capacity to sustain a “growth spell”³ over a prolonged period of time (Berg, Ostry, and Zettelmeyer, 2012). Indeed, based on panel data analysis, the authors find that Sub-Saharan African countries would typically encounter growth periods that tend to end with prolonged periods of negative growth (about between -3 and -6 percent, on average). It has resulted in overall weaker growth performances. Against this background, they also point out that most countries in that situation have nonetheless demonstrated, episodically, a capacity to generate a growth spell. Thus, the question at stake is to identify what forces would prevent some countries to sustain high growth rates over a prolonged period of time.

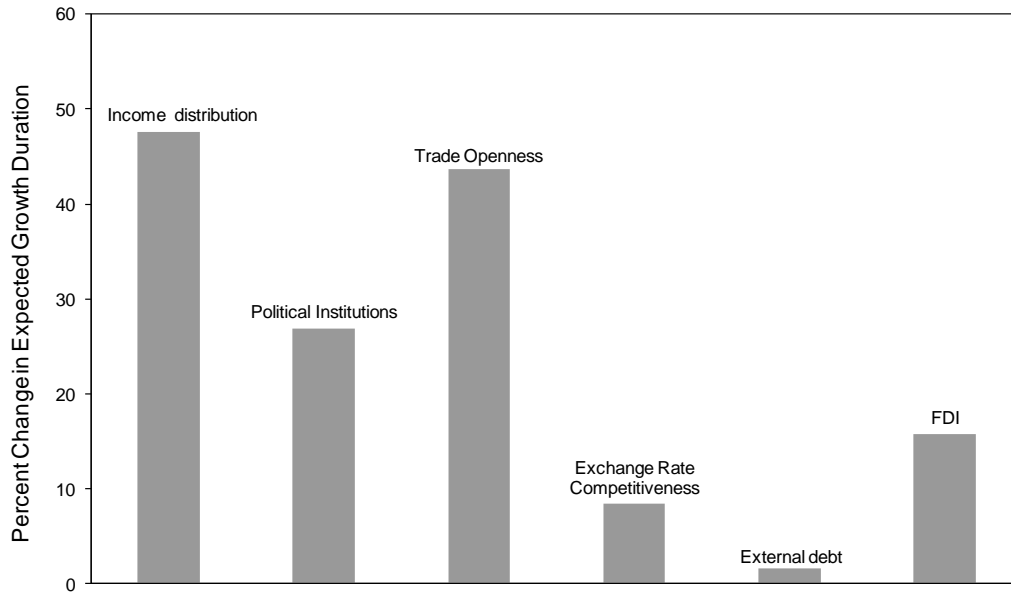
Higher income inequalities are, in general, not only associated with shorter growth durations but also appear to be a major contributing factor (Figure 1). Improvements in income distribution, namely a reduction in the Gini coefficient from the 50th to the 60th percentile, would typically be associated with 50 percent longer growth period. In other words, controlling for other factors such as terms of trade, FDI received, price competitiveness, it would appear that income inequality, as measured by the Gini coefficient, has a significant impact on the duration of growth spells. With smaller magnitudes, other factors are also found to be statistically significant in explaining the duration of growth spells, but to a lower degree, such as (i) investment in infrastructure, (ii) external shocks (e.g. changes in terms of trade or nominal US interest rate), (iii) quality of public institutions, notably as measures by the autocratic degree of political regimes, and (iv) financial sector development. In contrast ethnic, linguistic and religious heterogeneity do not seem to have a significant association with the length of growth spells. Similarly, human capital measures (education,⁴ health⁵) are associated with improved predicted duration of growth spells.

³ Berg, Ostry and Zettelmeyer (2012) define growth spells as periods of real GDP per capita growth of at least 5 years, identified as beginning with an upbreak of per capita growth in excess of a minimum of 2 percent and ending with a downbreak followed by a period of an average growth of less than 2 percent, or simply the end of the sample.

⁴ Improvement in primary education enrolment rate.

⁵ Child mortality rate level and change.

Figure 1: Effect of Increase of Different Factors on Growth Spell Duration



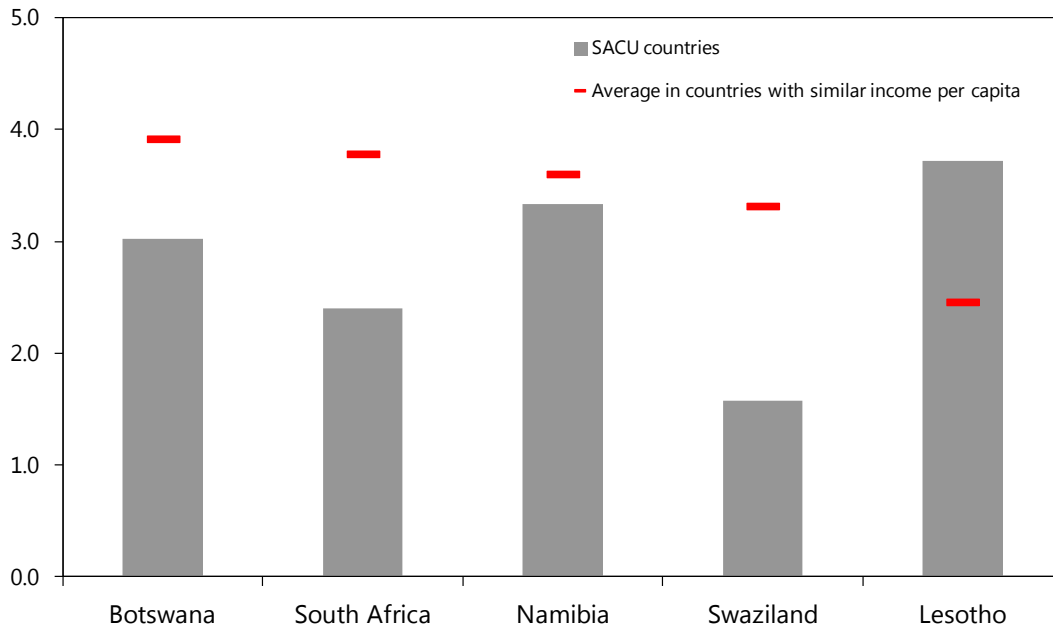
For each variable, the height of the figure shows the percentage increase in spell duration resulting from an increase in that variable from the 50th to the 60th percentile, with other variables at the 50th percentile, except autocracy, which is not a continuous variable. For autocracy, the figure shows the effects of a move from a rating of 1 (the 50th percentile) to 0 (the 73rd percentile.)

Source: Berg, Ostry, and Zettelmeyer (2008) and authors' calculations.

III. ANALYZING GROWTH AND INEQUALITIES WITHIN SACU

The overall growth performances in the SACU region over the past decade have been mixed, when comparing each country to an average of countries with similar level of income per capita (Figure 2). With the exception of Lesotho, the poorest country in the region, all exhibit weaker growth performance, in terms of GDP per capita growth. Despite the proximity to a large emerging economy (South Africa), as well as significant natural resources (Botswana, Namibia, South Africa), translating growth potential into improved GDP per capita growth remains difficult. The finding highlights the need for additional investigation of growth sources, with a specific focus on the interaction between growth and inequalities.

Figure 2. Average GDP per Capita Growth Rate, 2000–10
(percent, data based on real GDP per capita)¹



Source: WEO; and IMF Staff computations.

¹ Comparisons are based on real GDP per capita averaged over the period 2008–10. Each of the SACU country is then compared to the countries having the next three higher income, and the next three lower income.

Cross-country comparisons underscore growth spells vulnerabilities for most SACU countries, except Botswana, and to some extent, South Africa (see Appendix I, and Table 1). In the case of Lesotho and Swaziland, the finding is particularly acute, as the past few years also indicate a low growth rate, particularly compared to the other countries. South Africa growth path is contrasted, with a continued growth spell that started in 1998, i.e. after the democratic reforms of 1994 (Table 1). Similarly, Namibia, since its independence in 1990, has also shown a capacity to generate high growth rates of income per capita, with a growth spell that started in 1995. However, even if both countries have experienced a growth spell, performances during that spell have been relatively weak, with the average growth of GDP per capita of 2¼ percent (Namibia) and 3 percent (South Africa). Additionally, all countries, with the exception of South Africa, exhibit higher growth spell vulnerability compared to the sample average. This relative vulnerability is measured by the hazard ratio, reported in (Table 1). The hazard ratio predicts the probability that a spell would end during the five years prior to its actual end, as a ratio to the predicted probability of a spell ending for the average observation in the entire sample. Thus the hazard ratios reported are specific to each growth spell, and are computed at the end of each available spell. A ratio above 1 indicates a higher, and country-specific, risk of growth spells ending, compared to the sample average. All countries have a hazard ratio significantly above 1, except Botswana, with a hazard ratio of 0.7. It indicates Botswana's stronger resilience during the spell ending in 1988, compared to the average growth spell in the sample.

Table 1. Contributing Factors to the End of Growth Spells in the SACU Region ¹

	Spell Dates		GDP per capita growth		Hazard Ratio	Contributing factors (Percent of total hazard)					
	Start	End	During Spell	Next decade		Inequality	Low FDI Inflow	Increased External Debt	More Autocracy	Over-valuation	Trade openness ⁴
Botswana	1968	1988	8.3	1.9	0.7	67.5	0.0	0.0	0.0	5.8	14.1
Lesotho ²	1972	1978	4.9	2.6	7.5	48.0	0.0	0.0	24.5	0.0	20.2
Lesotho	1992	1998	5.6	1.4	3.5	71.5	0.0	0.0	0.0	0.0	28.1
Namibia ³	1995	...	2.2	...	2.6	72.5	0.0	0.0	0.0	0.0	24.6
South Africa ³	1998	...	3.0	...	2.6	73.0	9.9	0.0	0.0	0.0	0.0
Swaziland ²	1971	1979	7.2	-0.2	7.4	45.2	3.2	0.0	26.4	0.0	17.2
Swaziland	1985	1990	4.6	2.2	6.3	42.8	0.0	0.0	35.6	0.0	18.1

Source: IMF Staff estimates and computations.

¹ Growth spells, hazard ratios, and contributing factors, are based on a minimum duration of 5 years, with a p-value of 25 (see Berg, Ostry, and Zettelmeyer, 2012). The contributions are rescaled so that they would sum to 1 if all factors were included. Shown here are only the main factors for these particular observations.

² In the case of Lesotho and Swaziland, two separate growth spells have been identified.

³ In the case of Namibia and South Africa, the growth spell periods are ongoing, while statistical procedure was able to detect the upbreak. In these two cases the hazard of spell ending was estimated as hypothetical in the end of the sample, i.e. 2006.

⁴ Trade openness is measured 0 when high trade barriers exist, and 1 when economy is fully integrated to the world trade and has no restrictions. The results suggest the contribution of trade restrictiveness on the probability of spell ending. For example, South Africa, which has trade fully liberalized, had seen no impact from trade restrictiveness.

While inequalities clearly play a crucial role, other factors are also at play, and may have strong impact on policy options. As shown in Table 1, deteriorating trade openness and increasing degree of autocracy have also played a significant role in some countries. As such, improving growth spell duration should not be viewed as a simple question of the growth/inequalities nexus, but a broader challenge of institutional set-ups.

- Smaller SACU members, insufficient trade liberalization contributed from 14 percent up to 28 percent to the end of growth spells. A relatively low degree of trade liberalization in smaller SACU members is also shown as contributing to the hazard ratio of growth spells. However, the indicator⁶, developed by Wacziarg and Welch (2008), considers these countries to have been relatively closed, until the revision of the SACU agreement of 2002, largely because external tariffs, common to each member, were set by South Africa (WTO, 2003). SACU countries are currently highly integrated with the world economy, with various trade agreements, including non-reciprocal preferential treatment with the EU and the US that benefit smaller SACU members.
- Similarly, the status of political institutions matter greatly⁷. According to the measure of the degree of autocracy of political regimes given by Polity IV, two countries stand out: Lesotho during the pre-democracy period (which started in the 1990s), and Swaziland which is an absolute monarchy. During

⁶ This indicator equals 1 if current year is greater than the year of trade liberalization and no reversal of the trade policy reforms have occurred and 0 otherwise.

⁷ In the estimated model political institutions were measured by Polity IV variable on autocracy (<http://www.systemicpeace.org/polity/polity4.htm>), scaled from 0 to 10 (most autocratic society).

Lesotho's first growth spell period, autocracy was responsible for 24 percent of the end of the growth period. Whereas in Swaziland autocracy contributed 26 percent and 36 percent to the end of the two spells, respectively. These findings can also be understood in the context of the general literature on inequalities, growth and political systems. A key risk for growth and its sustainability is the concentration of political powers, which can not only increase inequalities, but also increase the risks of political crises (Saint Paul et Verdier, 1996, Engerman and Sokoloff, 2000, Bénabou, 2002). Even if an actual political crisis does not occur, the risk of social unrest can be sufficient to lower investment and growth. However, it should also be stressed that democracies are not exempt from risks, where, for example, pressures for redistribution can also lead to higher taxation and lower growth (Alesina and Rodrik, 1994, Person and Tabellini, 1994). More generally crises can be generated when the poorer segments of the population compensate income disparities with access to financing (Kumhof and Ranci re, 2010). An overabundance of such financing can precipitate financial and/or political crises.

While high income inequalities are associated with the growth spell vulnerabilities, the causal relation remains a complex one. For almost all countries, income inequalities have remained high throughout the sample.⁸ Thus, changing the level of income inequalities cannot systematically be associated with a prolonged growth spell. Crafting an active policy to jointly reduce inequalities and foster growth is further discussed in the next section. Additionally, other factors not included in the model, and specific to SACU countries, can affect both income inequalities and growth performances. For example, Botswana economy is heavily dependent on mineral extraction (mostly diamonds). Mining activities are not labor intensive, and are thus less prone to reduce income inequalities.

IV. LOWERING INEQUALITIES TO INCREASE GROWTH PERFORMANCES?

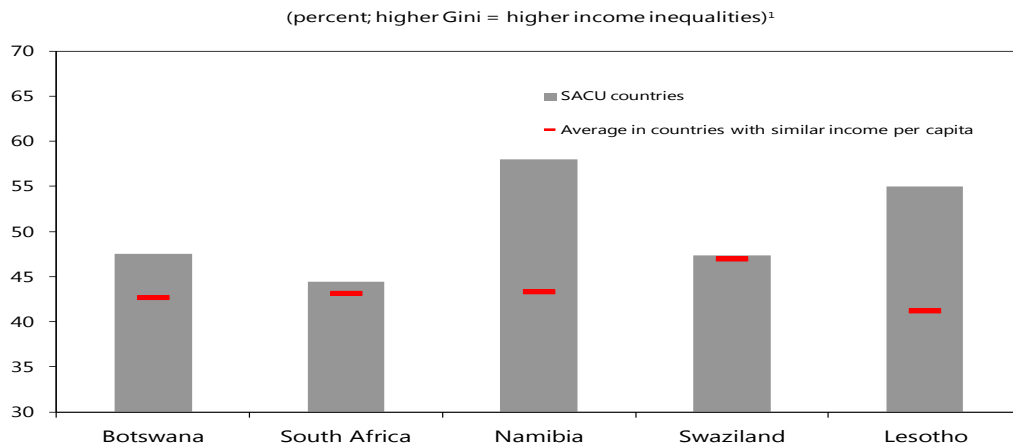
Having assessed the degree of inequalities and their relationship with growth, the issue is to define policies that would improve growth performances by reducing inequalities. As discussed in the introduction, human capital is a major factor behind the growth-inequalities nexus. It is particularly relevant for SACU countries. Some (South Africa, Namibia) have inherited from the past large inequalities in the access to education. Others are facing challenges with significant natural resources (Botswana, Namibia, South Africa, and to some extent Lesotho and Swaziland), which are typically strong contributor to the wealth of nations, but at the same time do not provide wide opportunities for job creations and inequalities reductions. This section discusses how to craft inequality-reducing policies, first by quantifying the potential gains, and then by detailing the content of these policies. Promoting human capital investment for all, together with policies aimed at continued improvements in business climate are of utmost importance in this process.

⁸ Income inequality, measured by Gini coefficient here, has low variation across time.

A. Potential Gains From Lower Inequalities

Reducing income inequality could potentially lead to significantly improved growth performances (Table 1). SACU countries exhibit higher income inequalities than countries with similar level of GDP per capita (Figure 3). In particular, Botswana, Lesotho, Namibia, and Swaziland (BLNS) all exhibit much higher Gini coefficients than their respective peers.⁹ In contrast, South Africa has a Gini coefficient only slightly higher than the average country at similar income level. However even in the post-apartheid period (i.e. since 1994), South Africa Gini has shown signs of slight worsening (+1 percent). While redistribution among ethnic groups took place, the overall impact on income inequalities has remained, at best, marginal.¹⁰ Applying the methodology of Berg and Ostry (2011)¹¹ to SACU countries help quantify the potential gains of lower income inequalities. Two experiments are then considered: one where, for each SACU country, income inequalities are set to their lowest historical level, and another, where inequalities are set to the average level encountered in countries of similar level of developments. Table 2 summarizes the results: for all countries, the gains from this hypothetical improvement in inequality could be quite significant. For most spells, the average duration could have been increased from about 5–8 years, up to 15 years and above (Namibia, Botswana). The result for Namibia is largely driven by the high degree of income inequalities encountered during its growth spell. In Botswana, the unusual potential gain is largely driven by the length of the estimated growth spell. Thus, even marginal improvements in income distribution could result in a more prolonged growth spell.

Figure 3: Comparing Gini Coefficients Between SACU countries



Source: UN-WIDER (<http://www.wider.unu.edu>); UTIP (<http://utip.gov.utexas.edu/>); and IMF Staff computations.
¹ Comparisons are based on GDP per capita, in constant US\$, averaged over the period 2008–10. Each of the SACU country is then compared to the countries having the next three higher income, and the next three lower income.

⁹ The result for Namibia has to be taken with cautious, as there are only two data points for its Gini coefficient.

¹⁰ The Gini coefficient, as most measures of inequalities, complies with the “anonymity axiom” (see Cowell, 2000) that is, the measure does not depend on who has which income level.

¹¹ See Appendix for a short description.

Table 2. Comparative Impact of Income Inequalities on Growth Spell Duration

	Gini coefficients			Average duration (years)	Increased duration resulting from a lower Gini	
	Average ¹	Historical ²	Cross-country ³		Historical ⁴	Cross-country ⁵
Botswana	52.2	48.5	42.7	23	+5 years	+32 years
South Africa	52.7	41.7	43.2	8	+6 years	+7 years
Namibia	73.9	42.1	43.3	5	+17 years	+3 years
Swaziland	61.7	43.6	47.0	4	+6 years	+3 years
Lesotho	61.0	50.3	41.2	5	+4 years	+10 years

Source: IMF Staff estimates and computations.

¹ Average during growth spell periods.

² Minimum value observed over the past twenty years.

³ Average Gini level over the past twenty years among the group of countries of similar GDP per capita, as defined in Figure 2.

⁴ Additional growth period resulting from the Gini coefficient being at its lowest historical value.

⁵ Additional growth period resulting from the Gini coefficient being at the average of countries.

B. Reducing Inequalities to Strengthen Growth Performances

Despite negative impact of inequalities on growth, redistributive policies need to be carefully crafted in order to avoid a negative impact on work and investment incentives. There are three main considerations to bear in mind when implementing redistributive policies.

- Reducing inequalities in human capital should be at the core of policies intervention aimed at reducing income inequalities and promoting growth.
- In parallel to promoting human capital investment, policies could also help private sector development, so that eventually new skills available are matched with corresponding vacancies. Otherwise the economy could well be trapped in structural imbalances between labor supply and demand.
- Carefully crafted direct redistribution of income is also desirable, especially to alleviate extreme poverty.

Promoting human capital investment for all

Income inequalities are primarily related to disparities in human capital (health, education). On the health side, the HIV/AIDS epidemic is a major contributor, as SACU countries share the highest prevalence rates in the world (Table 3). Groups relatively more affected by HIV/AIDS complete fewer years of education (Fortson, 2011). Eventually it contributes to increasing inequalities, as the less educated and therefore less-paid individuals are also more vulnerable to the disease (Chicoine, 2012). This inequality is also passed-on future generations, as affected people are more likely to leave behind orphans, who, in turn, are less likely to attend school (Case and Ardington, 2006, Evans and Miguel 2007). On the education side, the individual return of education is negatively affected by health issues (HIV/AIDS).

Table 3. Highest HIV/AIDS Prevalence Rates¹ in the World, 2009

	Rank	Rate	Pop. Growth ²
Swaziland	1	25.9	1.5
Botswana	2	24.8	1.3
Lesotho	3	23.6	1.0
South Africa	4	17.8	0.8
Zimbabwe	5	14.3	0.8
Zambia	6	13.5	2.9
Namibia	7	13.1	1.8
Mozambique	8	11.5	2.3
Malawi	9	11.0	3.2
Uganda	10	6.5	3.3
World average	...	1.9	...
World median	...	0.4	...
World st. dev.	...	4.4	...

Source: UNAIDS; IMF staff computations. Data available on the internet:

<http://www.aidsinfoonline.org/>

¹ Prevalence rates computed among the 15-49 age group.

² Annual growth rate of the population, latest data available.

Policies geared towards the provision of health and education services can be effective to reduce inequalities (Bourguignon, Ferreira, and Menéndez, 2007) and increase growth. Market failures can explain why a sub-optimal investment in human capital can occur and be detrimental to both inequalities and growth. The poor typically face credit constraints that limit their human investment: their resources are so limited that they simply can't invest (Galor and Zeira, 1993, Piketty, 1997), or the return of human capital investment is too low, largely because of externalities¹² (e.g., Glomm and Ravikumar, 1992, Bénabou, 1993, 1996, 2002). Facilitating the investment in human capital by the poor, would typically involved the public provision of education and health services, which in turn would imply taxing relatively richer individuals to finance it. Thus, an arbitrage takes place between disincentives created by higher taxation, vs. higher income generated by the provision of those services. However, by fostering human capital investment for all, the economy can generate more benefits for all, primarily because it can correct market failures and externalities, thus achieving – at the level of the economy as a whole – a higher level of investment, and higher growth, despite the negative impact of the added fiscal pressure.

The cost of public intervention would nonetheless need to be carefully assessed. Public systems can be very costly (e.g., programs of education for all), in terms of buildings, teachers trainings, and overall cost for the budget. Donors assistance, including financial, could be desirable to mitigate fiscal risks and facilitate quality goals. Additionally, the

¹² Externalities are generated because the individual profitability of human investment is actually dependent on decisions made by other individuals. It would typically result in richer people congregating to generate – and benefit from – higher level of externalities for themselves, but leaving lower opportunities for the vast majority of the population.

quality of the education system is not a simple function of funding allocated to it. For instance, the pupils-to-teachers ratio plays an important factor, and so do the skills of teachers. It could thus be very well the case where growth and inequality reduction gains would be maximized with targeted improvements in the quality of the education system.

SACU countries have made significant efforts to improve the access to education. For example, Lloyd and Hewett (2009) show, using data from Demographic and Health Surveys (DHS),¹³ as well as UNICEF's Multiple Indicator Cluster Surveys (MICS)¹⁴ how SACU countries as a whole have among the best scores in primary school completion rates in Sub-Saharan Africa. Although active policies have helped improve the access to education and therefore reduced inequalities in terms of "quantitative parameters" (years of education), qualitative differences in education contribute to explain income disparities (van der Berg, 2009, Keswel, 2009). These qualitative differentials also contribute to explain why overall income inequalities have not been reduced yet in South Africa.

Increasing employment opportunities

The very large unemployment rate in SACU, ranging from about 35 to 55 percent (Leigh and Flores, 2011), underscores the need to increase employment opportunities in parallel to human capital development. Overall, there is need for broad development policies where human capital investment would be coupled with strategies to develop the private sector.

Promoting employment opportunities in rural areas would be essential to provide long-term answers to inequalities and poverty. A vast fraction of the populations (e.g., about $\frac{3}{4}$ of the population in Namibia and Swaziland, $\frac{1}{2}$ in Botswana) live out of subsistence agriculture. Their productivity is low and low investment, which in turns limit the individual profitability of human capital investment (World Bank, 2006). The poor in rural areas are also typically affected by two self-reinforcing factors: lack of access to financial services, and land ownership.¹⁵ The persistence of inequalities underscores the need for continued improvements in access to land asset inequalities inherited from the apartheid area. Successful land reforms would notably provide fair, transparent, and long-lasting rights, so as to foster the use of land for collateral (World Bank, 2006).

Private sector development would be essential to strengthen existing – or develop new – comparative advantages. Not surprisingly, human capital alone is rarely found as having a significant impact on growth (Mankiw, Romer, Weil, 1992, Pritchett, 2001, 2006). It's positive impact on growth comes when it complement technological efforts, notably by

¹³ <http://www.measuredhs.com/>.

¹⁴ http://www.unicef.org/statistics/index_24302.html.

¹⁵ Unequal access to land ownership can lead to lower education investment, as a result of pressures for preserving a low-skilled labor force in the agricultural sector. On the contrary, economies with a more equal access to land ownership have led to more incentives for higher investment in education, eventually leading to the emergence of skilled-labor intensive industrial activities (Galor and others, 2009, Rajan, 2009).

favoring technological transfers to emerging and developing economies. From this perspective human capital investment complement private sector development to generate, jointly, a positive impact on growth (Benhabib and Spiegel, 1994, del Barrio, Lopez, and Serrano, 2002, Engelbrecht, 2002, Frantzen, 2002).¹⁶ Similarly, without demand for educated labor, the marginal return on education would also decrease rapidly (Pritchett, 2001).

Fighting poverty

Redistributive policies (cash and in-kind transfers, progressive taxation) have clear benefits in terms of addressing poverty – and thus inequalities –, and are appropriate given the large pockets of poverty within SACU. Cash and in-kind transfers have been increasingly used by SACU countries, as by other Sub-Saharan African countries (Garcia and Moore, 2012). They are also an essential part of social protection for vulnerable groups, including elderly people and orphans who are trapped in poverty. They can also mitigate market failures, by bringing resources to the poor to undertake investments, which otherwise could not be financed. Cash transfers can also be conditioned to reduce child labor and promote schooling (e.g. Bolsa Família program in Brazil,¹⁷ see also World Bank, 2006). It is also noteworthy that the South African Child Support Grant, introduced in 1998 as an unconditional cash transfer to eligible caregivers of children has had some positive impact on overall health and education attainment by children (Coetzee 2011).

Thus, measures could also be considered such as improving labor market flexibility and developing in-work tax credits, so as to preserve work incentive and an effective labor matching process. Such measures would typically imply a trade-off between reducing inequalities and increasing employment.

V. CONCLUSION

SACU region exhibits high degree of income and non-income inequality. Reducing these inequalities is a major challenge, but evidence suggests they can extend the length of growth spells and offer durable solutions to poverty and long run growth. As shown in this paper, the design of policies to achieve these goals is non-trivial. Policies have to carefully balance the effects of added fiscal pressures on businesses and individuals, with benefits stemming from greater investment in human capital and reduced poverty. While there is a clear role for public intervention, the overall fiscal impact would have to preserve the soundness of public finances. Timing would therefore be of essence: gains expected from step up investment in human capital would typically imply trade-off between short-term fiscal costs, with more long-term benefits. While desirable, these benefits would need to be carefully assessed and complemented by policies geared towards private sector development, so that fiscal sustainability remains preserved.

¹⁶ The findings should nonetheless be taken with caution, as De la Fuente, and Domenech, (2006) show that the results are sensitive to the quality of measurement of human capital.

¹⁷ Details can be found on the World Bank website, <http://go.worldbank.org/M4EQDZNX0>.

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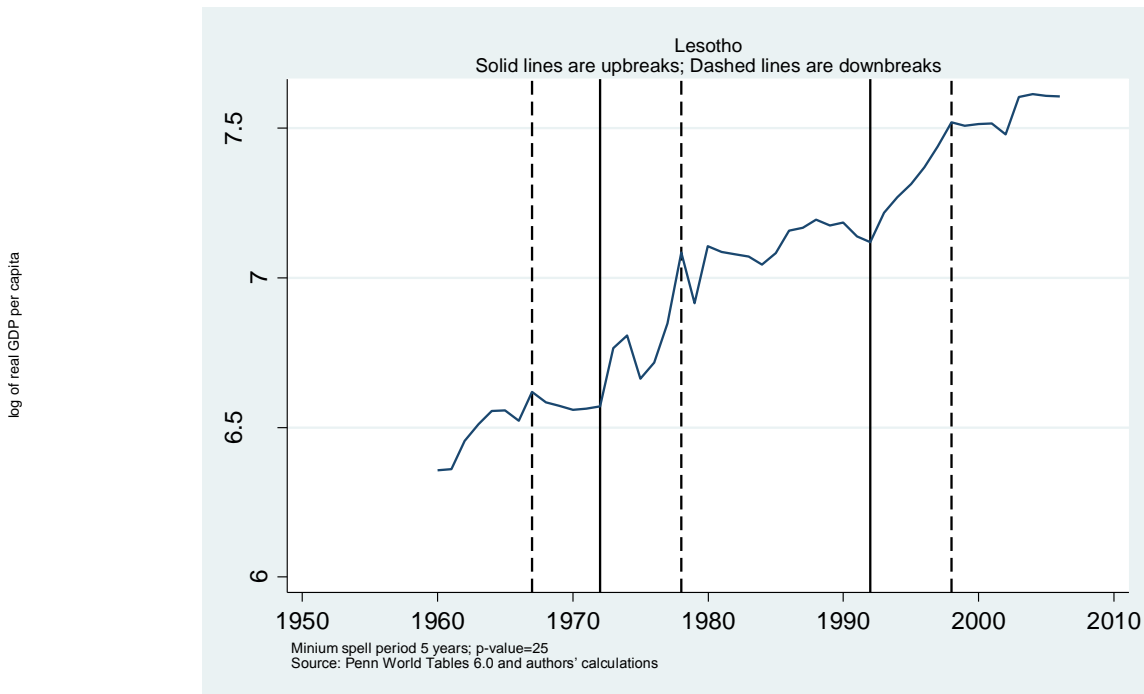
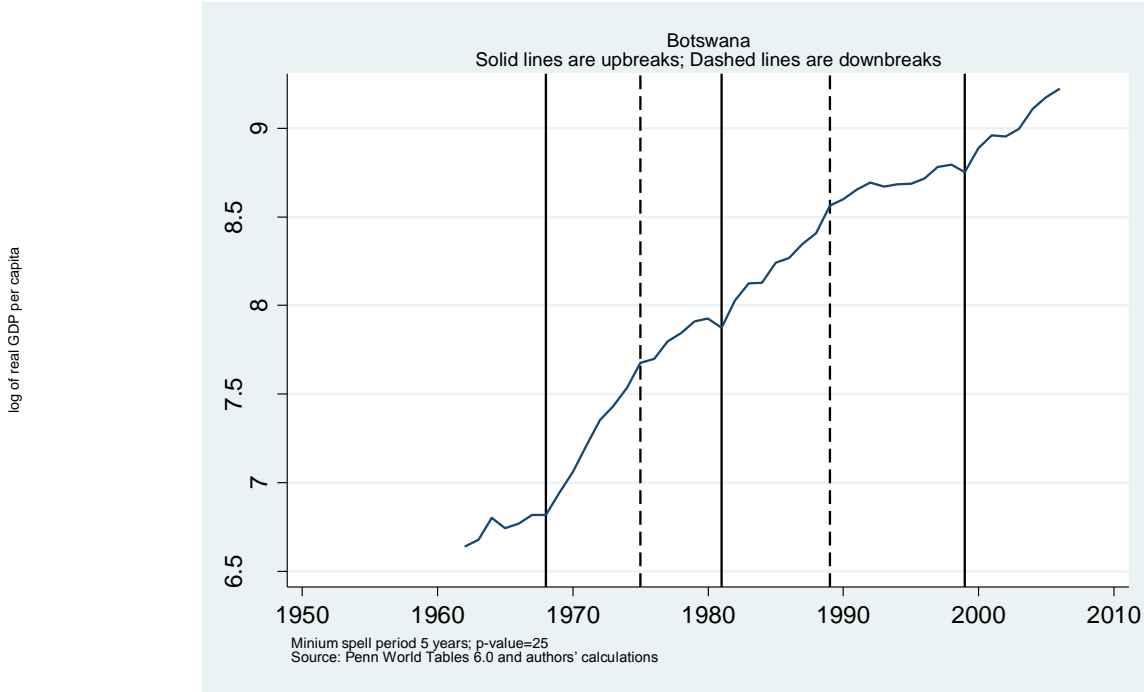
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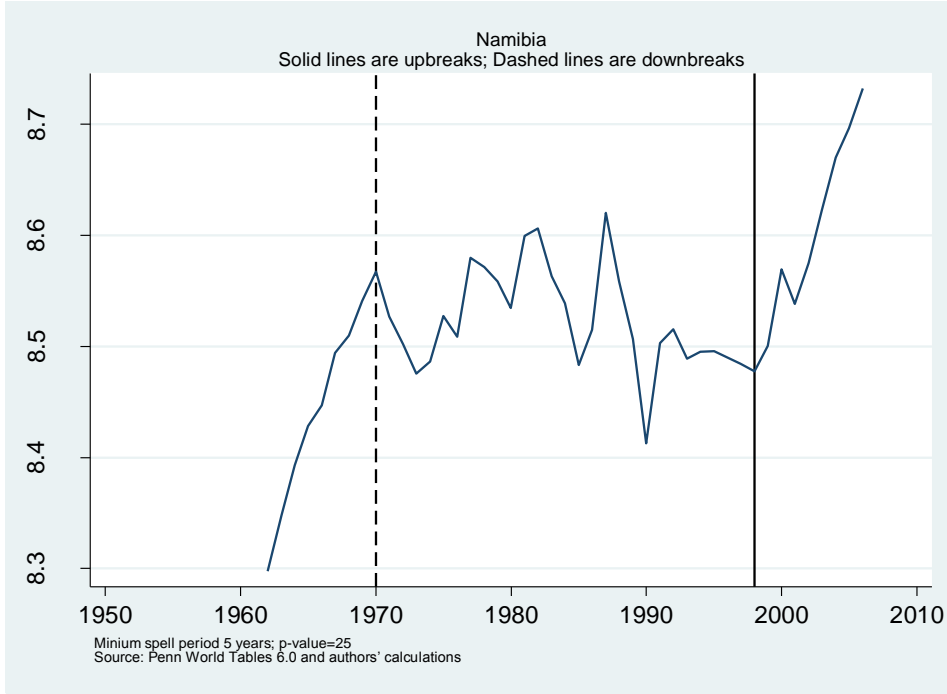
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APPENDIX I

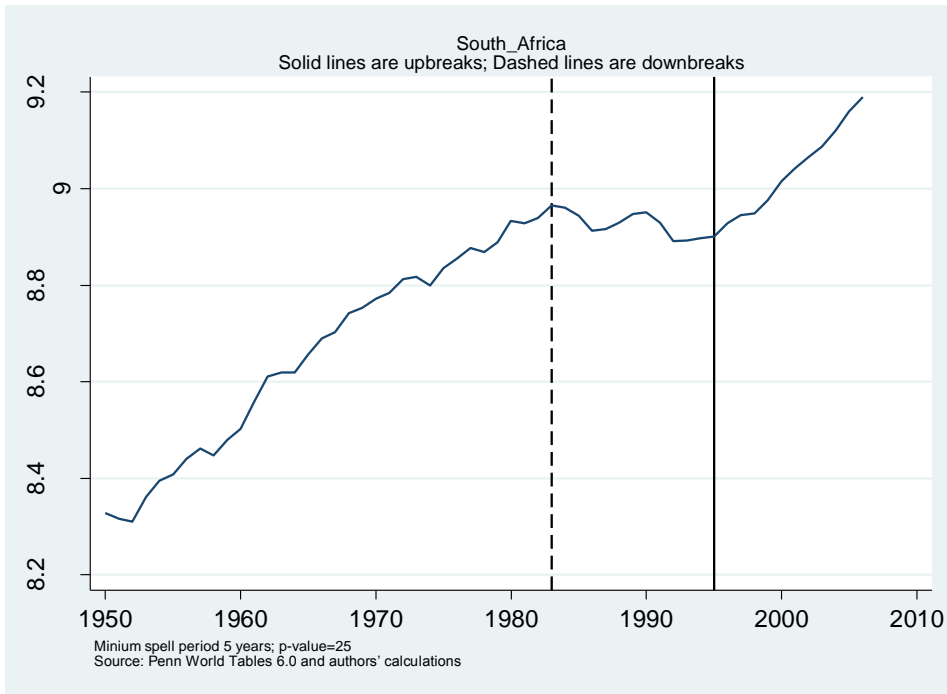
The following charts summarize the estimated growth spells in the SACU Region during the period 1950–2010. Minimum spell period set at 5 years, with a p-value of 25 percent.

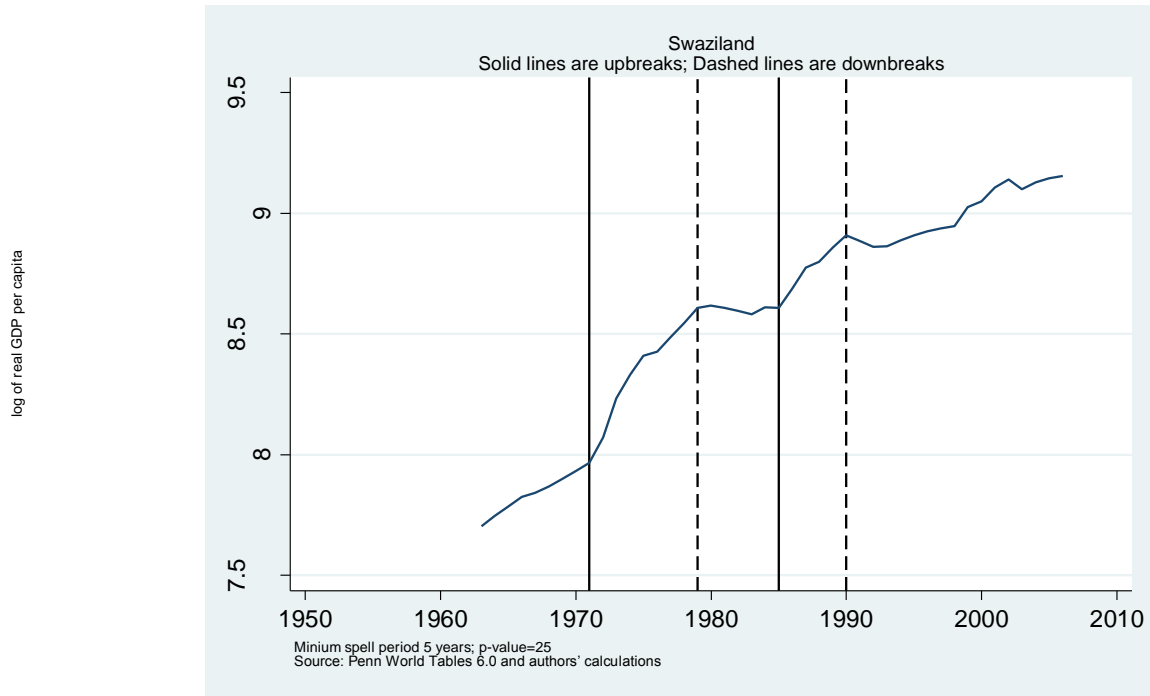


log of real GDP per capita



log of real GDP per capita





APPENDIX II

The duration of a growth spell is estimated with a duration model, where the time since growth accelerated, t , has a probability Γ_t of seeing the end of the growth period at the next period.

This probability, Γ_t depends on a set of variables, some time-dependent, X_t , and some time-independent, z , according to the following functional form:

$$\Gamma_t = \lambda_t e^{\beta[X_t z]}$$

Where β is a vector of coefficients to be estimated. Γ_t also depends on an autonomous factor, $\lambda_t = pt^{p-1}$, which quantifies a “natural” duration of the growth spell, i.e. the extent to which a growth spell is bound to end regardless of explanatory variables.

The time-dependence of the growth spell duration is positive when $p > 1$, in which case spells become more sustainable over time; or negative when $p < 1$, in which case spells become less sustainable. The parameter p is also estimated and found negative.

One potential estimation issue is the potential dependence of the vector X_t on whether or not the spell is ongoing. Assuming that the hazard at time t , conditional on the covariance at times t , then the model can be estimated.

Summary of Regressions Coefficients

	Coeff.	St. Dev.
Inequality (GINI)	-0.05	(0.012)
Income per capita at the beginning of the growth spell	-0.11	(0.003)
Debt liabilities	0.00	(0.155)
FDI liabilities	0.02	(0.112)
Change of inflation within spell	-0.01	(0.070)
First lag of US interest rate change	-0.24	(0.031)
Overvaluation of exchange rate	0.00	(0.557)
Polity IV autocracy measure	-0.13	(0.027)
Trade liberalization	0.66	(0.108)
Terms of trade growth	0.01	(0.547)
Constant	5.20	(0.000)

Source: Berg and Ostry (2011).