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Gender and Growth in Sub-Saharan Africa

Issues and Evidence

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Abstract

The study suggests that gender inequality acts as a significant constraint to growth in sub-Saharan Africa, and that removing gender-based barriers to growth will make a substantial contribution to realizing Africa's economic potential. In particular we highlight gender gaps in education, related high fertility levels, gender gaps in formal sector employment, and gender gaps in access to assets and inputs in agricultural production as particular barriers reducing the ability of women to contribute to economic growth. By identifying some of the key factors that determine the ways in which men and women contribute to, and benefit (or lose) from, growth in Africa, we argue that looking at such issues through a gender lens is an essential step in identifying how policy can be shaped in a way that is explicitly gender-inclusive and …/

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beneficial to growth and the poor. We also argue that in some dimensions and channels of the gender-growth nexus, the evidence is only suggestive and needs further detailed research and analysis. Investigations of the linkage between gender inequality and growth should therefore be a priority for development economics research in coming years.

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1 Introduction

Since at least the mid 1970s, sub-Saharan Africa's growth performance has lagged behind all other developing regions, with large and rising income gaps compared with the rapidly growing economies in East and South Asia. This poor growth performance has translated into a similarly poor performance in terms of poverty reduction, with Africa having the highest poverty rates (incidence as well as depth using the international $1-a-day poverty line) and showing no progress in meeting MDG1 since the early 1980s (Chen and Ravallion 2004). Africa also suffers from a low poverty elasticity of growth, largely due to its high inequality, which by now is among the highest in the developing world (World Bank 2005a).

The presumed sources of slow growth in African economies have been analyzed by many authors,[1] and range from the institutional legacy of colonialism, geographic challenges, trade and debt-related issues, high ethnic diversity, high incidence of conflict, demographic issues, weak institutions, considerable inequality, as well as poor economic policy choices. While these factors are clearly important contributors to Africa's poor economic prospects, we show that there is by now considerable evidence that gender inequality in various dimensions also plays a significant role in accounting for the poor growth performance in Africa, and can help us further our understanding of growth determinants.[2] These issues range from inequalities in education and formal sector employment to gender gaps in access to and control over important economic assets and productive inputs, and issues of governance. As we show below, there is considerable evidence that these gaps not only disadvantage women and thus are inequitable, but reduce the growth potential in the region, and thus are partly responsible for the poor progress in poverty reduction in Africa.[3]

The study suggests that gender inequality plays a significant role in accounting for Africa's poor growth and poverty reduction performance.[4] It argues that removing these inequalities would be an important precondition for addressing Africa's growth

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1 See, for instance, Sachs and Warner (1997); Collier and Gunning (1999); Acemoglu et al. (2001); Easterly and Levine (1997); Mkandawire and Soludo (1999).

2 For example, Blackden and Bhanu (1999); World Bank (2001); Klasen (1999).

3 This study focuses on the growth effects of gender inequality. This is not to deny the importance of the equity implications and welfare implications of such inequalities. For a discussion, see Klasen (2004c; forthcoming).

4 While poverty reduction is not only affected by growth but also by distributional change, gender issues could affect poverty reduction also by affecting such distributional change. This is an issue discussed in more detail in Klasen (forthcoming) where it is shown that the impact of gender inequality on growth is much larger and more important for poverty reduction than the impact of gender inequality on distributional change.

problems. To do so, this study focuses on the theoretical insights relating to gender and growth linkages and complements this with some recent empirical evidence. The next section of the study discusses the theoretical insights on gender and growth, highlighting the particular difficulties associated with gender-based analysis in a situation where market and household productive activities are often intertwined at the household level, an interdependence that is not fully captured in standard economic analyses. Section 3 provides some current evidence on the main gender issues that are particularly important for growth, including gender gaps in education, formal sector employment, access to assets and resources (particularly in agriculture), and gender gaps in time use. We then conclude in section four with some policy-focused and research-oriented recommendations.

2 Theoretical linkages between gender and growth in sub-Saharan Africa

Growth theory suggests that economic growth depends on the accumulation of economic (including human) assets, and the return on these assets, which in turn depend on technological progress, the efficiency with which assets are being used, and the institutional frameworks of production. The different strands of the growth literature all agree on these factors but differ in the way these factors interact to generate sustainable growth. Gender issues will naturally come into play in the way all of these factors influence economic growth. As discussed below, there may be gender differences in the way human assets are being generated and accumulated, and gender issues may also play a role in the way physical assets (including land but also other physical capital) are being maintained and augmented. In addition, gender issues may play a role in influencing technological progress, as well as the efficiency with which assets are being used to produce incomes. Lastly, gender issues may influence institutions, both public and private, which can help or hinder the efficiency of resource use. The relevant literature in each of these factors will be discussed below.

2.1 Methodological constraints

It is important to highlight a few particular difficulties in analyzing these gender issues as they relate to economic growth. First, many gender differences relate to the way households decide on production and consumption matters.[5] As we discuss in the next section, the household plays a particularly important role as a producer of economic goods as well as human assets in Africa and thus a full understanding of the gender issues involved requires an analysis of household, and especially intra-household, issues. This is an area economics has historically shied away from, where our data are often quite patchy, and the evidence is circumstantial.

[5] In addition, economic options and incentives are different—that is, the choices people can make are going to be driven by non-economic control factors that are not uniform for men and women.

Second, the importance of gender issues may not be as directly visible as some other issues affecting growth, due to the fact that a considerable share of the economic contribution of women is not included in national income aggregates and income-based poverty measures.[6] This has two important implications. First, the economic contribution of women to wellbeing and poverty (in a wider multidimensional perspective) is understated in conventional national income and poverty statistics. Similarly, the economic constraints women face in their productive activities, and how they differ from those faced by men, often do not receive enough attention. Researchers interested in uncovering the gender dynamics of growth issues will have to move beyond direct influences of gender inequality on growth and include complex indirect influences. As shown below, indirect linkages might include issues such as the 'quantity' and 'quality' of children, the importance of time constraints for women's productive activities, and the impact of intra-household relations and resource control issues on women's willingness to invest in the improvement of land or in technical progress. Lastly, there are some issues that are traditionally viewed as non-economic but which can clearly have economic implications. Those include issues such as violence against women that affects their ability to produce, 'cultural' constraints on women's economic activities, and issues of control over resources within households that may heavily influence household decision making about the allocation of resources for the accumulation of assets and/or the efficiency of asset use. These questions make it more difficult to identify clearly the role of gender issues in growth. But they make them no less important.

2.2 Theoretical insights

By now, there is a considerable theoretical literature suggesting that gender differences in asset accumulation and use can have significant growth effects. In particular, a number of models find that gender inequality in education and employment reduce economic growth. The main arguments from the literature, which are discussed in more detail in Klasen (1999; 2002) are briefly summarized below.

With respect to gender inequality in education, the theoretical literature suggests that such gender inequality reduces the average amount of human capital in a society and thus harms economic performance. It does so by artificially restricting the pool of talent from which to draw for education, thereby excluding highly qualified girls (and taking less qualified boys instead). Moreover, if there are declining marginal returns to education (and imperfect substitutability between males and females), restricting the education of girls to lower levels while educating boys at higher levels means that the *marginal* return to educating girls is higher than that of boys and thus would boost overall economic performance.[7]

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[6] See UNDP (1995); Blackden and Bhanu (1999); Klasen (2005a; forthcoming).

[7] See Knowles et al. (2002); World Bank (2001); Schultz (1993)

A second argument relates to positive externalities of female education, that is positive effects that are not captured by the beneficiaries themselves (who, of course, also profit from higher education).[8] Promoting female education or earnings is known to reduce fertility levels, reduce child mortality levels, and promote the education of the next generation. Each factor in turn has a positive impact on economic growth. As shown in some models,[9] these effects can be large enough to ensure that some countries are trapped in a low-level equilibrium with large gender gaps in education or earnings, high fertility rates, low investment in each child, and consequently low levels of per capita incomes.[10] This would be particularly relevant for low-income countries that have not entered the demographic transition—as applies to a significant number of countries in sub-Saharan Africa (SSA)—and which might be stuck in such a low-level poverty equilibrium, partly due to high gender inequality.

Related to this argument, some authors have emphasized that reducing gender gaps in education will help initiate the demographic transition that will, with some time lag, lead to a favourable age distribution in a population, known as the 'demographic gift', in which the share of working age people is particularly high, compared to the declining cohorts of the young and not yet large cohorts of the elderly. This phase of the demographic gift can lead to higher savings and investment rates, and higher worker/capita ratios, all of which would boost per capita GDP (Bloom and Williamson 1998).

A third argument is that gender gaps in employment impose a similar distortion on the economy as do gender gaps in education. They artificially reduce the pool of talent from which employers can draw, thereby reducing the average ability of the workforce (Klasen and Lamanna 2003). In a related model by Esteve-Volart (2004), gender gaps in access to managerial positions and employment more generally distort the allocation of talent and the production and productivity of human capital, all of which serve to reduce economic growth.

Some authors have emphasized a fourth argument which also relates to education and employment inequalities.[11] They argue that low gender gaps in education and employment, combined with relatively large gender gaps in pay can be a source of competitive advantage in the promotion of export-oriented industries that draw heavily on female labour. These authors highlight the export-oriented growth strategies of East

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[8] Note that in this study we are primarily concerned with gender *gaps* in education, and thus do not focus on absolute education levels which would, as is well known, also contribute to pro-poor growth.

[9] See, for example, Lagerlöf (2003); Galor and Weil (1996); World Bank (2001).

[10] Lagerlöf emphasizes gender gaps in education, while Galor and Weil concentrate on earnings gaps.

[11] See, for example, Seguino (2000).

Asian economies where shrinking gender gaps in education and employment coincided with high gender pay gaps.[12]

A fifth argument relates to the importance of female employment for their bargaining power within families. There is a sizable literature that demonstrates female employment and earnings increase their bargaining power in the home.[13] This not only benefits the women concerned, but their greater bargaining power has been shown to lead to greater investments in the health and education of their children, thus promoting human capital of the next generation and therefore improving the potential for economic growth.[14]

A sixth argument relates to access to productive assets and inputs. In situations where women and men undertake different and/or separate productive activities (as is the case in agriculture in much of Africa but also in non-agricultural activities in many developing countries), differential access to productive assets and inputs constitutes a distortion in the sense that 'women's activities' are under resourced and under capitalized while 'male activities' are (comparatively) over resourced and over capitalized. Due to declining marginal returns and/or the loss associated with talented women being starved of economic resources, such a distortion reduces aggregate output.[15] Such gender gaps might not only lead to static inefficiency but also reduce efficient investments in new technologies[16] and the maintenance and improvement of assets, including particularly land.

A seventh argument relates to time constraints women face due particularly to high burdens associated with household tasks and large families. These constraints sharply reduce the ability of women to engage in market production, and thus their assets are not being used in ways that is captured by income growth and income poverty statistics.[17] This is partly a measurement issue where important wellbeing related production is taking place within households that is not being counted in national accounts and thus in GDP growth. It is also an issue of an indirect growth linkage, as the ability of households to produce output and maintain and enhance assets importantly depends on this invisible and uncounted labour. Lastly, it is an issue related to the efficiency of asset use. To the extent that this labour, due to poor technology and

[12] For a critical review of this argument and its empirical substantiation, see Klasen (1999; 2002; forthcoming). See also Seguino (2000).

[13] Klasen and Wink (2002); World Bank (2001); Sen (1990).

[14] Thomas (1997); World Bank (2001).

[15] World Bank (2001; 2005a); Udry (1996).

[16] Jones (1986); von Braun and Webb (1989).

[17] UNDP (1995); Blackden and Bhanu (1999); Bardhan and Klasen (1998); World Bank (2005b); UPPAP (2002); Blackden and Wodon (2006).

infrastructure, exhibits very poor productivity levels, it growth would be lower even if this labour were fully captured in income statistics. Thus, it is not only a measurement issue but also an issue directly related to the efficiency of asset use, particularly the human assets of women.

An eighth argument relates to governance. There is a small but growing literature that has suggested that women are less prone to corruption and nepotism than men (World Bank 2001). Improving access to women to the workforce and decision making bodies is therefore likely to improve governance in business and government. Similarly, there is a literature arguing that policies to achieve greater female political participation (such as quotas as in the case of India) can lead to the prioritization of investments of particular importance to women such as time-saving infrastructure and human capital which in turn can promote economic growth (Duflo and Chatthopadhyay 2003; World Bank 2001). Thus there are a large number of plausible theoretical arguments suggesting that gender gaps in education, employment, access to assets and inputs, and time use can have a negative impact on economic growth. The relevance and economic importance of these arguments, however, is largely an empirical matter to which we turn presently.

2.3 Empirical findings

On the empirical side, there is now a considerable body of cross-country evidence that has shown gender inequality in education to reduce economic growth substantially.[18] While the point estimates of the size of the effects differ somewhat between studies, the results seem quite robust, as the studies use very different econometric approaches, time periods, country samples, and model specifications. In particular, they all suggest that gender inequality in education accounts for a sizable portion of the empirically observed growth differences between countries and regions.

Based on these empirical findings it is possible to estimate growth effects for countries that will not meet the education target for the MDG for gender equality. As shown by Abu-Ghaida and Klasen (2004) the estimated growth effects are quite substantial. There is also some cross-country and cross-regional evidence (although less robust at this stage)[19] that gender inequality in employment, both in terms of access to employment as well as type of employment (position in hierarchy and sectors, for instance) similarly reduces economic growth (Klasen 1999; Klasen and Lamanna 2003; Besley et al. 2004). There is also a wealth of micro evidence that points out that gender inequalities in access to productive assets (such as land, fertilizer, seeds, credit, etc.) reduce the

[18] See, for example, Dollar and Gatti (1999); Forbes (2000); Knowles et al. (2002); Klasen (2002); Yamarik and Ghosh (2003).

[19] Investigations of the employment–growth nexus suffer from poor employment data that are often not comparable across countries, as well as potential endogeneity problems that are not easily addressed.

productivity of female producers and most often by more than the same inequality increases the productivity of male producers.[20]

In addition, there is overwhelming cross-country and micro evidence that gender inequality in education leads to higher fertility, higher child mortality, higher undernutrition, and lower educational investments[21] with the effects often being quite large. As shown by Abu-Ghaida and Klasen (2004), if countries were able to eliminate gender inequality in educational enrolments by 2005, they would reap considerable benefits in terms of these indicators. To the extent that these factors in turn influence economic growth, they are part of the reason why gender inequality in education reduces economic growth and thus increases poverty. Since these indicators are also development goals in their own right, promoting gender equality in education would reduce 'education poverty', 'health poverty', and 'nutrition poverty'. It would also be important to investigate to what extent the effects of gender inequality in education on these development outcomes are larger (or smaller) among the poor. But given the empirical findings that gender gaps in education are larger among the poor than the non-poor and that some of the effects of gender gaps in education (e.g. on fertility) are also larger among the poor than the non-poor, it is clear that policies to boost enrolments would particularly help poor women and thus make a direct contribution to poverty reduction in income and non-income dimensions.

Furthermore, there is a lot of evidence showing that women's bargaining power has a significantly positive impact on investments in children's education, health, and nutrition.[22] Women's bargaining power is, in turn, heavily influenced by their employment status, their education, and their access to unearned incomes; for instance, inheritances, remittances, state transfers.[23] Improving the bargaining power of poor women would therefore lead not only to beneficial effects on the women themselves, but one would be able to reap considerable externalities in terms of improved outcomes for their families, with positive repercussions for economic growth.

Finally, there is some evidence that women's empowerment is associated with improved governance and reduced corruption, as women tend to have a lower propensity to engage in such behaviours (World Bank 2001; Swamy et al. 2001). This may be one of the reasons why gender gaps in education and employment are associated with lower

[20] For surveys of this literature, see Blackden and Bhanu (1999); World Bank (2001); Bamberger et al. (2001); World Bank (2002).

[21] Schultz (1997); Klasen (1999); Smith and Haddad (1999); World Bank (2001); Abu-Ghaida and Klasen (2004).

[22] Thomas (1997); World Bank (2001); Lundberg et al. (1997); Murthi et al. (1995).

[23] World Bank (2001); Sen (1990); Murthi et al. (1995); Klasen and Wink (2002; 2003).

growth.[24] There is also some evidence that greater female participation in political decision making at local levels can improve investments in priorities of women policymakers, which in turn are likely to improve the contribution of women to economic growth (Duflo and Chattophadyay 2003).

Thus, the theoretical and empirical literature strongly suggests that improving gender equality in education, employment, access to productive assets, and in greater female bargaining power improves growth and other valuable development outcomes. In the education dimension, the findings are quite conclusive while in other dimensions (including employment, access to asset and inputs) the evidence is more sparse and certainly merits much closer attention in further research. We now assess the relevance of, and evidence for, these linkages for growth and poverty reduction in Africa, through an analysis of the most important gender gaps in Africa.

3 Gender gaps in education, employment, access to productive resources and agriculture in Africa

Both the general literature on gender and development (World Bank 2001) as well as specific works on Africa (World Bank 2000) have argued that reducing gender inequalities can be a powerful force for growth and poverty reduction in Africa. To assess how important the various gender issues are in the African context, it is useful to briefly review the evidence and most important gender gaps as they relate to education, employment, and other issues such as agriculture and access to resources.

3.1 Gender and education

Table 1 shows that SSA is, along with South Asia, a region with the largest gender gap in education, both at the level of enrolment as well as at the level of attainment. The initial gaps are an inheritance from the colonial period where overall levels of education were low and gender gaps were considerable, although smaller than in South Asia (Klasen 2002). More worryingly, the absolute growth in education has been slower than in other regions so that the absolute levels of female attainment (or enrolments) in SSA are now below those of South Asia, which had not been the case previously. Thus, we are faced with a generalized education crisis in Africa. As women have had the most to gain from an expansion of education, the failure to accelerate the expansion of schooling has led to the low female attainments as well as large persistent gaps (see Abu-Ghaida and Klasen 2004). Important exceptions to this generally bleak picture include many countries of southern Africa (with the exception of Zimbabwe) as well as Uganda, where education has expanded considerably and gender gaps have fallen rapidly. Such expansion of education was typically accompanied by specific measures to reduce the costs of schooling (including, for example, free primary education in

[24] See, for example, Klasen and Lamanna (2003); Sauer (2001).

Uganda, Lesotho, and Tanzania) and significant investments in the expansion of schooling infrastructure and teachers.

Combining the insights from the cross-country literature about the effects of gender gaps in education with the evidence on gender gaps in Africa, it is possible to estimate the amount of growth 'loss' associated with both the large initial gender gaps in education and the slow pace of reduction in these gaps.[25] Comparing Africa with East Asia and the Pacific, Klasen (2002) finds that some 0.6 percentage points in annual growth differences (of a total of 3.5 percentage points) between the two regions in 1960-92 can be accounted for by the higher *gender* gaps in Africa and the slower pace of reducing them. This is quite apart from the additional growth differences that arise from differences in initial overall education levels and the much slower growth in overall educational attainments.

Within Africa, growth differences can partly be attributed to considerable differences in levels and changes of gender gaps in education. We focus on Uganda here as a case study.[26] Table 2 shows that fully 1.3 percentage points of the growth differences between Uganda and Botswana can be accounted for by the much larger initial gender gaps in education in Uganda as well as the much slower pace of closing these gaps.

Since the mid 1980s, Uganda has been able to expand its education much faster than previously and has also reduced the gender gaps considerably. The female-male ratio of the expansion of schooling in the 1990s stood at 1.03, meaning that females expanded their schooling slightly faster than males. We also show how gender inequality since 1990 has affected growth based on the same growth regressions. Predictably, the effect is much smaller now, accounting for about 0.65 percentage points in the growth difference with Botswana, and 0.34 percentage points in the growth difference with East Asia. Interestingly, the effect of the female-male ratio of the growth of education is now negative suggesting that, compared with Botswana and East Asia, Uganda was closing its gender gap in education more quickly. But since Uganda had a much larger initial gender gap in 1990, the overall effect of gender inequality on growth held down growth, certainly compared with Botswana and East Asia.

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[25] One should caution that these are point estimates that represent average effects of gender gaps in education. For an individual country (or region) the actual effect might be larger or smaller and, in any case, is sensitive to any measurement and specification errors in the underlying regressions.

[26] See World Bank (2003a) for a related estimation in the context of Kenya. See also Klasen (2004a; 2004b).

Table 1: Enrolment rates and attainment by gender

	Primary Gross Enrolment Rate				Secondary Gross Enrolment Rate				Average Years of Attainment [b]			
	1975		1999		1975		1999		1970		1995	
Region	Females	Males	Females	Males	Females	Males	Females	Males	Females	Males	Females	Males
East Asia & Pacific	108	121	106	105	35	49	60	65	3.06	4.54	5.85	6.84
Europe & Central Asia	..	..	93	95	..	..	80	81	8.09	8.93	9.67	9.20
Latin America & Caribbean	97	100	130	133	34	35	87	80	3.52	4.14	5.58	5.91
Middle East & North Africa	64	99	91	99	24	44	67	72	1.39	2.75	4.21	5.74
South Asia	58	91	91	110	15	33	41	57	1.08	2.95	2.94	5.31
Sub-Saharan Africa[a]	45	66	73	85	6	13	23	28	1.56	2.60	2.82	3.98

Note: [a]Latest available data on primary GERs are from 1998 and on secondary GERs from 1996. [b]Attainment data include schooling beyond secondary. Since data are from Barro and Lee (2000), the regional classification includes some countries with per capita incomes too high to be included in the World Bank's database (the one used for the GERs).

Source: World Development Indicators central database and Barro and Lee (2000).

Table 2: Estimating the effect of gender inequality in education on growth differences between Uganda and Botswana or East Asia

	1960-2000		1990-2000	
	Direct	Total	Direct	Total
Uganda versus Botswana				
Effect of gender inequality in 1960	0.45	1.14	0.29	0.73
Ratio of gender inequality in growth of education	0.13	0.18	-0.06	-0.08
Total	058	1.32	0.23	0.65
Uganda versus East Asia				
Effect of gender inequality in 1960	0.18	0.46	0.14	0.36
Ratio of gender inequality in growth of education	0.28	0.37	-0.02	-0.02
Total	0.46	0.84	0.12	0.34

Source: Authors calculations based on Klasen and Lamanna (2003).

Since Uganda's introduction of universal primary education (UPE) in 1997, educational enrolments have risen and gender gaps have closed, both at increasing rates. However, Uganda was still expected to miss the 2005 MDG on gender equity in education (due to remaining gaps at secondary level). Using results from Klasen (2002) and Knowles et al. (2002) and comparing the projected path of educational enrolments with a path that would allow Uganda to meet the MDG, Abu-Ghaida and Klasen (2004) estimated that failing to meet the MDG would lead to lower growth of 0.1-0.2 percentage points per year between 1995 and 2005, and less than 0.1 percentage points after 2005. This shows that sizeable growth costs can result from persistent gender gaps in education.[27]

As shown by Abu-Ghaida and Klasen (2004) and Klasen (2005b), many other African countries have not been nearly as successful in reducing gender gaps in enrolments as stipulated in the education-focused target of MDG3. In fact, of the 36 or so countries (with at least a population of 500,000) which have probabaly missed this MDG3 target (gender equality in primary and secondary enrolment rates in 2005), the majority (24) are from SSA.[28] As estimated by Abu-Ghaida and Klasen, the growth costs of missing this MDG3 target are considerable. For example, countries such as Togo are projected to suffer from 0.3 per cent lower growth between 1995 and 2005, and 0.5 per cent per

[27] The 2002/3 Ugandan National Household Survey (UNHS) suggests that Uganda is also closing the gender gap in secondary education, faster than anticipated, although gaps still remain and the second generation economic reforms need this higher skilled labour.

[28] As the data for enrolments in 2005 will only be available later in 2006 or early 2007, the exact numbers of countries that have failed to meet the target is still not known and the information presented here is based on the most up-to-date projections.

year slower growth between 2005 and 2015 as a result of failing to reach the MDG3 target. Thus, failing to reach this target entails significant growth costs, but also delays progress in attaining other important MDGs. For example, as a result of failing to reach the target, Mozambique is projected to have 0.3 children per women more and Mali is projected to suffer from a 26/1000 higher under-five mortality rate in 2015.

3.2 Gender and employment

In contrast to some other regions, a distinguishing characteristic of SSA economies is that women have particularly high labour force participation rates, largely related to their high activity rates in agriculture. Female activity rates (percentage of women aged 15-64 that are economically active) as measured by the ILO are estimated to be around 67 per cent in Africa, far higher than in most other regions (except Eastern Europe and Central Asia). In contrast to other regions, however, these activity rates have fallen slightly over the past 40 years while they have risen strongly elsewhere (Klasen and Lamanna 2003).

One method of capturing the dynamics associated with the different economic contributions of men and women is through the 'gender intensity of production' in different sectors. [29] Adopting this methodology, and using ILO labour force data**,** Gueye has estimated the gender intensity of production for each country in SSA (Appendix Table A1).[30] Although highly aggregated, and based on 1990 data comparable across countries, the estimates provide some indication of the respective contributions of men and women in African economies, and suggest a high degree of variability across countries and sectors. For example, men contribute 2/3, and women 1/3, to African GDP, with women's contribution ranging from a low of 26 per cent to a high of 52 per cent.[31] Bearing in mind that these estimates are based on national income accounting, and thus are likely not to fully capture (due to measurement issues) women's non-market production, these shares are very large, certainly when compared with other regions.

Issues relating to gender gaps in African employment are quite different from most other developing regions. The large contribution of women (see Appendix Table A1) to measured GDP in Africa is largely driven by the substantial and often preponderant role they play in the agricultural sector. In some parts of agricultural production, women

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[29] The gender intensity of production relates the sex-specific employment shares with the overall structure of the economy to provide an assessment of what share of output is produced by males and females respectively. For details, see Elson and Evers (1997).

[30] Aissatou Gueye, economist at UNECA, while on secondment at the World Bank in 2002.

[31] It is probable that these estimates understate women's contribution to their economies, although they also do not take account of gender differences in productivity.

perform most of the tasks.[32] This important role of female labour in agricultural production implies that access to assets and inputs for their productive activities can have significant growth effects. This is particularly the case when women and men work on separate plots or separate tasks, where gender differences in access to inputs, technology, and assets will affect the overall productivity of agriculture (see below).

In the industrial sector, women tend to play a much smaller role with some notable exceptions such as the textile and garment industries in a few African states (for example Lesotho, Mauritius, and Madagascar). In the service sector, the shares vary greatly and represent a rather heterogeneous mix of public services, community and health services, as well as tourism and other services reflecting the diverse nature of services in African economies.

This important distinction between formal and informal sectors cannot be deduced from the data and other studies have to be considered, which show that the informal sector is particularly large in Africa, and uses a great deal of female labour (ILO 2002; Blunch et al. 2001). Excluding South Africa, the share of informal employment in non-agricultural employment is 78 per cent, rising to 83 per cent if agriculture is included. Self employment represents 70 per cent of informal employment in SSA and 53 per cent of total non-agricultural employment. Outside agriculture, more than 60 per cent of women are in informal employment. In SSA, more than 84 per cent of women non-agricultural workers are informally employed compared with 63 per cent of men. Although women's participation rates are lower compared with men, they are important in street vending (90 per cent), home-based workers (80 per cent) and as home workers (80 per cent).[33]

Considering the overall economic contribution of the informal sector, we estimate the share of the informal sector in non-agricultural GDP in SSA to be 41 per cent. This compares with 29 per cent in LAC, and 41 per cent in Asia. Country data suggest that the informal sector contributes 58 per cent to GDP in Ghana and 13 per cent in Mexico. In Tanzania, the informal sector contribution is estimated at 43 per cent. In Burkina Faso, of a 36 per cent overall GDP contribution, 29 per cent comes from women while 7 per cent is from men. In Kenya, out of the total 25 per cent, 11 per cent comes from women and 14 per cent from men, and in Mali 26 per cent from women and 14 per cent

[32] Data compiled by IFPRI indicate that African women perform about 90 percent of the work of processing food crops, hoeing and weeding, 80 percent of the work of food storage and transport from farm to village, and 60 percent of the work of harvesting and marketing (Quisumbing et al. 1995). Time allocation data throughout SSA confirm women's predominant role in agricultural activities. In Zambia, for example, the preponderance of women's labour in agriculture is illustrated by time allocation studies which show women's greater labour contribution to crop production including, significantly, export crop production.

[33] Home-based workers refers to those who carry out market work at home or adjacent premises, while home work refers to those who carry out work on a piece rate basis for businesses from home.

from men (Charmes 1998). Given the overall figures, the high participation of females in informal activities suggests that their representation in formal sector employment is, conversely, low. Data from the ILO suggest that formal sector employment rates in SSA are not any higher than in South Asia or the Middle East, and are much lower than in East Asia, Latin America, or ECA (Klasen and Lamanna 2003).

With respect to the economic impacts of this crowding of women in informal activities and their associated low share in formal sector employment, Klasen and Lamanna (2003) estimate the simultaneous impact of gender gaps in education and formal sector employment on economic growth in a panel framework. They find that both gender gaps in education and formal sector employment reduce economic growth. In fact, the (still preliminary) estimates suggest even larger growth costs for gender gaps in formal sector employment than in education. This is also corroborated by findings from South Asia where gender gaps in employment are also particularly large (Esteve-Volart 2004).

To illustrate one example, based on the cross-country regressions mentioned above and 1992 census data on employment for Uganda from 1992, the growth difference accounted for by gender inequality in education and employment between East Asia and Uganda could amount to 0.6-0.7 per cent per year in the 1990s. If gender inequalities in non-agricultural and particularly formal sector employment persist, the costs of these gaps could mount considerably in future as the country will have to rely increasingly on non-agricultural employment.[34] Related to this is evidence on the impact of the under-utilized potential of women in non-farm employment more generally. Using household data for both Ghana and Uganda, Canagarajah et al. (2001) showed non-farm employment to be an important area of growth in SSA. In particular, they found that women's labour force participation had increased substantially within a period of 5-6 years in the 1990s, leading to lower poverty rates. Using poverty decompositions for both countries, they show that the contribution of growth to poverty reduction from this increased female employment in the non-farm sector is larger than the contribution from redistribution, findings consistent with many other countries.[35] Related analyses from Uganda show that women entrepreneurs face significant gender-based obstacles to establishing and operating their businesses, including access to finance, land and non-land assets, justice services, and information. These in turn limit Uganda's capacity to expand such non-farm enterprises (Ellis et al. 2006).

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[34] This receives further confirmation by estimates of returns to education. As shown by Mpuga (2003), employed women have higher returns to education than employed men Female returns to education appear to have been rising more than male returns in recent years suggesting great demand for higher female employment (Klasen 2004a).

[35] Given that non-agricultural employment does not play such a quantitatively large role in Uganda at present (as a share of GDP or the labour force), the impact of gender inequalities in access to such employment is likely to be smaller than in regions with larger shares of non-agricultural employment (such as the Middle East and North Africa; see Klasen and Lamanna 2003). See also Barret et al. (2001); Cleaver and Donovan (1995).

It therefore appears that women are an under-utilized resource in non-farm formal sector employment. This is also related to the type of growth strategies that have been adopted by African countries. Evidence from East Asia as well as selected African countries (including Tunisia, Morocco, Lesotho, and Mauritius) show that growth strategies that are based on export-oriented and labour-intensive light manufacturing is highly dependent on using female labour. In the countries that have adopted such a strategy, gender gaps in formal sector employment have become smaller and overall growth has been higher.[36] The potential to combine greater female employment in manufacturing with such an export-oriented growth strategy appears sizeable and merits must closer investigation.

3.3 Gender inequalities in agriculture

Given women's important role as agricultural producers, the conditions of production are of particular importance for both growth and poverty reduction in Africa. It is quite difficult to generate quantitative evidence on the efficiency effects of gender inequalities in access to land, inputs, and control over resources. This is due to the fact that in many African countries (particularly in eastern and southern Africa) women and men collaborate on agricultural production by each providing certain inputs and, thus, it is very difficult to determine the efficiency of these inputs quantitatively. Or they produce different products where once again it is not easy to estimate the efficiency of production and thus the growth effects of existing gender gaps, although there is some evidence of the consequences of such gaps. For example, comparative evidence from Kenya suggests that men's gross value of output per hectare is 8 per cent higher than women's. However, if women had the same human capital endowments and used the same quantities of factor inputs as men, the value of their output would increase by 22 percent. Hence, women's productivity appears well below its potential. Capturing this potential productivity gain by improving the circumstances of women farmers would substantially increase food production in SSA, thereby significantly reducing the level of food insecurity in the region. If these results from Kenya were to hold in SSA as a whole, simply raising the productivity of women to the same level as men could increase total production by 10 to 15 per cent.[37]

In places where women and men produced the same products on different plots, it is easier to see whether gender gaps affect efficiency. There is some evidence that gender gaps in input use significantly reduce overall efficiency of agricultural production. For example, studies by Udry (1996) and Udry et al. (1997) from Burkina Faso show that

[36] Given the importance of trade for Africa's growth and poverty reduction prospects the different economic roles of men and women in SSA are especially significant in the area of trade expansion. See Seguino (2000); World Bank (2003b); Klasen (forthcoming).

[37] See Saito et al. (1994). See also World Bank (2003a) and World Bank (1989); Horenstein (1989) on further evidence about consequences of gender gaps in Kenya on aggregate performance.

plots operated by women receive much less fertilizer and other inputs than those of men and if these inputs were equalized, aggregate output would rise by 10-15 per cent. Similar findings have been reported for other countries such as Zambia and Ghana (Blackden and Bhanu 1999; Goldstein and Udry 2002).

In addition to these static inefficiencies, there is considerable evidence about gender gaps in the adoption of new technologies. Such gender gaps have been visible for some time and it was usually assumed that they relate to gender gaps in education, as well as gender bias in agricultural extension services. For example, Blumberg (1992) has demonstrated that where women are targeted for extension services they produce higher yields. However, while such factors are important, more recent evidence suggest that additional constraints relate particularly to women's time burdens and competing responsibilities as well as the critical question of who controls the proceeds of such investments in new technologies, including export-oriented cash crop production.[38]

3.4 Linkages with non-market work and the time burden

The different structural roles of men and women in the market economy (notably agriculture and the informal sector) are coupled with their equally different, and unbalanced, roles in the household economy. A further distinguishing characteristic of African economies is that the boundary between economic and household activity is less well drawn in Africa than in other regions (Gelb 2001). Women bear the brunt of domestic tasks—processing food crops, providing water and firewood, and caring for the elderly and the sick (especially important in the context of HIV/AIDS). In particular, the impact of HIV/AIDS is not limited to the 'visible' market economy, but has an equally, if not more, significant impact on the 'invisible' economy, yet this productive work is unrecorded and not included in the System of National Accounts (SNA). It is estimated that 66 per cent of female activities in developing countries are not captured by the SNA, compared with only 24 per cent of male activities (Elson and Evers 1997).

Considering African examples of time allocation statistics, for Cameroon, in the Centre province, men's total weekly labour averages 32 hours, whilst for women it is more than 64 hours. Even though much of this disparity results from differences in domestic labour hours (31 hours a week for women and 4 for men) a significant difference was also observed in agricultural labour hours: 26 a week for women and 12 for men (Henn 1988). Village transport surveys in Tanzania and Zambia also show that women spend nearly three times as much time in transport activities compared with men, and they

[38] For example, Demery et al. (1993) show that time constraints reduce women's ability to invest in tea growing in Kenya. Jones (1986) shows that women in Senegal are reluctant to invest in rice as they do not control the proceeds from this production and are insufficiently compensated for their inputs (see also von Braun and Webb 1989). Lastly, Kasente et al (2000) and Booth et al. (2003) suggest that women are reluctant to invest in export-oriented cash crop production as they would not control the proceeds and such investments would generate a particularly large and unaffordable time burden for them.

transport about four times as much in volume (Malmberg-Calvo 1994; Barwell 1996). Moreover, fertility rates in Africa continue to be extremely high and have been reduced quite slowly in recent years, even in countries that have had considerable growth such as Uganda. Gender differences in time use are therefore exacerbated by very high fertility rates that continue to pose a disproportionate burden on women and prevent their greater participation in productive activities outside of the home. These unequal time burdens are not only an issue of equity, but also one of productivity. The high overall time burden, especially time spent on low-productivity household tasks (transport tasks associated with fuel and water collection, and food product processing and transformation) reduces the productivity of female labour and thus constrains their ability to contribute to growth and poverty reduction.[39]

Overall, therefore, the African situation appears to be large gender gaps in education and low overall female educational achievements, considerable gender gaps in formal sector employment, and a predominance of women in the informal and agricultural sectors, where they face considerable gender-based differences in access to and control of land, modern inputs, time, and other productive assets and resources.

4 Conclusions and policy implications

Notwithstanding extensive analysis and research, many of the conventionally accepted factors which determine growth and poverty reduction outcomes do not fully explain Africa's poor growth and poverty reduction performance. In this study, we outline the emerging findings about the importance of gender inequality and its relationship to growth in Africa. We have found that there is considerable evidence that gender gaps in education and formal sector employment reduce growth, that inequalities in access to land and productive inputs reduce agricultural productivity, investment, and modernization, and that inequalities in time burdens, alongside the high demographic burden, all contribute to reducing women's ability to participate effectively in, and benefit equally from, growth and poverty reduction in Africa.

Some of the policy implications have been well recognized. There are efforts underway to improve female education and reduce gender gaps in many African countries, with some recent notable successes in some countries. Key to overcoming the education stagnation and the gender gaps have been significant investments in education sector, lifting of user fees for primary education, and special programmes to target female education. Africa's high population growth and the disproportionate burden it places on women is also generally recognized, although there is much scope for improvement in

[39] A more extensive analysis of 'time poverty' and its relationship to growth and consumption poverty can be found in Blackden and Wodon (2006).

ensuring better access to reproductive health and family planning services, and more could be done to promote smaller family sizes.

Unfortunately, there is much less progress on efforts to improve women's access to formal sector employment. As Africa will need to shift slowly its workforce from agriculture to the non-agricultural sector, improving employment opportunities for women will be critical. Indeed, women could play a key role in developing and implementing export-oriented growth strategies. Similarly, much remains to be done to improve equity in resource access and control in agriculture. In this area, there has been little progress and a gender-informed growth agenda would have to address improving women's greater land ownership and security of tenure and more equal access to modern inputs. Some of these changes might be supported by legislation and changes in agricultural policies. Others will depend on changes in intra-household relations, which are less amenable to government intervention although targeted support to female producers could play an important role here.

Lastly, it is critical that there be concurrent investment in areas which reduce women's excessive time burden. Here, time- and labour-saving infrastructure could play a role, especially in rural areas, including giving greater priority to water supply and sanitation, energy for household needs, access to appropriate means of transport commensurate with men's and women's different transport burdens, and investment in labour-saving technology in the area of food product transformation and processing. In addition, an acceleration of demographic change, would contribute markedly to alleviating women's time burdens, as well as making MDG targets more attainable.

Apart from summarizing the main findings and its policy implications, it is important to lay out a forward looking research agenda. While the evidence on the effects of gender gaps in education on growth is now quite substantial and robust, the impact of gender gaps in employment should receive much greater attention. Moreover, estimation of the efficiency costs of gender gaps in agriculture still relies on small-scale micro studies in specific settings, including often just purely qualitative results. It is necessary to investigate thoroughly the impact of gender gaps in access to land, modern inputs, and technologies using advanced quantitative and econometric techniques to better understand these processes and design appropriate solutions.

We hope to have shown that gender is a critical economic issue for Africa, directly linked to growth and poverty reduction outcomes, and not a marginal social or women's issue concerned with equity. While much more remains to be done to show the particular ways gender gaps undermine Africa's growth potential, as well as policy measures needed to address them, what is already clear is that the linkages between gender inequality and growth in SSA deserve considerably more analysis and more policy attention.

Appendix

Table A1: Estimates of the gender intensity of production by country and sector

Country	2000	1990 GDP	1990 Structure of economy (%)			Agriculture (shares M/F)		Industry (shares M/F)		Services (shares M/F)		Shares of GDP (%)	
	Pop.(m)	US$m	Agr.	Ind.	Ser.	M	F	M	F	M	F	M	F
ANGOLA	12.7	10,260.3	18	41	41	46.3	53.7	88.8	11.2	64.6	35.4	71.2	28.8
BENIN	6.3	1,845.0	36	13	51	50.8	49.2	76.5	23.5	49.4	50.6	53.4	46.6
BOTSWANA	1.6	3,765.8	5	56	39	69.3	30.7	73.3	26.7	43.9	56.1	61.7	38.3
BURKINA FASO	11.3	2,764.6	33	22	45	52.2	47.8	53.0	47.0	61.2	38.8	56.4	43.6
BURUNDI	6.8	1,132.1	56	19	25	47.7	52.3	80.6	19.4	91.2	8.8	64.9	35.1
CAMEROON	15.1	11,151.7	25	29	46	56.0	44.0	87.2	12.8	76.0	24.0	74.2	25.8
CAPE VERDE	0.4	338.7	14	21	65	58.7	41.3	78.8	21.2	50.3	49.7	57.5	42.5
C.A.R	3.6	1,487.5	48	20	33	..	..	..	..	..	..	..	..
CHAD	7.7	1,738.6	29	18	53	51.9	48.2	89.9	10.1	71.8	28.2	69.3	30.7
COMOROS	0.6	250.0	41	9	50	50.0	50.0	77.5	22.5	84.1	15.9	69.6	30.4
CONGO, D.R.	51.4	9,347.7	30	28	42	47.7	52.3	83.6	16.4	67.7	32.4	66.1	33.9
CONGO, REP.	2.9	2,798.7	13	41	46	38.8	61.2	88.4	11.6	68.4	31.6	72.7	27.3
COTE D'IVOIRE	16.0	10,796.0	33	23	44	61.5	38.6	81.0	19.1	76.7	23.3	72.6	27.4
EQUAT. GUINEA	0.5	132.1	61	11	28	56.3	43.7	86.2	13.9	85.7	14.3	67.8	32.2
ERITREA	4.1	..	..	..	..	49.5	50.5	81.3	18.8	57.1	42.9	..	..
ETHIOPIA	64.3	6,841.7	49	13	38	59.0	41.0	59.0	41.0	56.9	43.1	58.2	41.8
GABON	1.2	5,952.3	7	43	50	49.8	50.2	72.8	27.2	56.8	43.2	63.2	36.8
GAMBIA, THE	1.3	316.9	29	13	58	49.6	50.4	88.0	12.0	74.0	26.0	68.8	31.2
GHANA	19.2	5,886.0	45	17	38	52.8	47.2	45.2	54.8	43.7	56.3	48.0	52.0
GUINEA	7.4	2,818.0	24	33	43	49.4	50.6	76.5	23.5	69.9	30.1	67.2	32.8
GUINEA-BISSAU	1.2	244.0	61	18	21	54.9	45.1	81.8	18.2	90.5	9.5	67.2	32.8
KENYA	30.1	8,533.2	29	19	52	51.5	48.5	73.0	27.0	49.7	50.3	54.6	45.4
LESOTHO	2.2	622.2	23	34	43	45.6	54.4	93.3	6.7	58.7	41.3	67.4	32.6
LIBERIA	3.1	..	..	..	..	54.8	45.2	93.4	6.6	71.8	28.2	..	..
MADAGASCAR	15.5	3,081.3	33	14	53	49.3	50.7	80.3	19.7	73.1	26.9	66.2	33.8
MALAWI	11.0	1,802.9	45	29	26	44.8	55.2	90.0	10.0	81.3	18.8	67.4	32.6
MALI	10.8	2,421.2	46	16	38	51.3	48.7	53.0	47.0	65.3	34.7	56.9	43.1
MAURITANIA	2.7	1,019.6	30	29	41	49.8	50.3	83.6	16.4	56.7	43.3	62.4	37.6
MAURITIUS	1.2	2,642.5	12	32	56	77.8	22.2	53.9	46.2	82.4	17.7	72.7	27.3
MOZAMBIQUE	17.6	2,512.1	37	18	45	44.1	55.9	94.2	5.8	84.4	15.6	71.3	28.7
NAMIBIA	1.7	2,529.6	11	35	54	50.7	49.3	72.4	27.6	70.2	29.8	68.8	31.2
NIGER	10.8	2,480.7	35	16	49	51.6	48.4	78.1	21.9	58.1	41.9	59.0	41.0

table continues…

NIGERIA	126.9	28,472.5	33	41	26	64.5	35.5	84.8	15.2	63.2	36.8	72.5	27.5
RWANDA	8.5	2,584.4	33	25	42	47.7	52.3	86.2	13.8	80.6	19.4	71.2	28.8
SAO TOME, P.R.	0.1	57.6	28	18	55	..	..	..	..	..	..	..	..
SENEGAL	9.5	5,698.4	20	19	61	52.9	47.1	77.5	22.5	71.5	28.5	68.9	31.1
SEYCHELLES	0.1	368.6	5	16	79	..	..	..	..	..	..	..	..
SIERRA LEONE	5.0	896.8	47	20	33	56.8	43.2	90.7	9.3	66.7	33.3	66.9	33.1
SOMALIA	9.7	917.0	65	..	..	50.1	49.9	89.6	10.4	71.7	28.3	..	..
SOUTH AFRICA	42.8	111,997.0	5	40	55	73.2	26.9	82.7	17.3	48.5	51.5	63.4	36.6
SUDAN	29.7	1,316.7	..	..	..	67.3	32.7	24.4	15.6	82.5	13.5	..	..
SWAZILAND	1.0	859.9	14	43	43	..	..	..	..	..	..	..	..
TANZANIA	33.7	4,258.7	46	18	36	46.2	53.9	80.0	20.0	66.7	33.3	59.6	40.4
TOGO	4.7	1,628.4	34	23	43	60.4	39.6	72.0	28.0	53.2	46.8	60.0	40.0
UGANDA	22.1	4,304.5	57	11	32	49.9	50.1	79.1	20.9	56.5	43.5	55.3	44.7
ZAMBIA	10.1	3,288.4	21	49	30	49.0	51.0	83.6	16.4	61.4	38.6	69.7	30.3
ZIMBABWE	12.1	8,783.9	16	34	50	44.4	55.6	83.6	16.4	50.7	49.3	60.9	39.1
TOTAL/AVG	658.3	282,945.9	19.9	33.7	46.9	61.9	38.1	80.3	19.7	57.8	42.2	65.0	35.0

Source: Calculations made by Aissatou Gueye (UNECA), while on secondment with the World Bank, May 2002. The principal data source is GenderStats on the World Bank's website, accessible at http://genderstats.worldbank.org/.

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