

BANK OF UGANDA



Remarks by

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The Link Between Higher Education and Development: Myth or Reality?

1. Introduction

The theme of my remarks today is that Uganda's economic development requires workers with higher education, but that our higher education system serves those needs poorly. Too many people receive higher education given the demands of the labour market, both currently and in terms of how it might plausibly develop in the future. In addition, owing to the enrolment numbers in our institutions of higher learning relative to their capacity, the average quality of graduates of higher education is sub-optimal. I will later come back to this point in my presentation.

There is no doubt that human capital development plays a very important role in economic development. In essence, economic development entails shifts in the way in which people earn their living, away from self-employment in agriculture, artisanal manufacturing and services to wage labour in modern, formal sector businesses. These shifts in the composition of employment enable increases in labour productivity which allows incomes per capita to rise. Unlike the traditional informal sectors, modern formal sector industries require a labour force which is both much better educated and which has specialist vocational skills; it also requires a relatively small cadre, compared to the overall

workforce, of very highly educated and trained workers to perform professional and managerial functions.

The key contribution which the education system can make to economic development is to provide young people who are entering the labour market with the education and vocational skills which the economy will need in the years in which they will participate in the workforce. A shortage of relevant skills will hold back the development of the economy; if the supply of labour with particular skills cannot meet demand for that labour, firms which require these skills will be deterred from investing to expand or even maintain production levels. However, that does not mean that simply boosting the supply of skills in a particular field will, by itself, generate the economic development that will create demand for these skills. For example, for a country with a growing software industry, a shortage of workers with IT skills would hold back the development of that industry. But training people in IT will not, by itself, create a software industry to employ these workers, because many other factors besides the appropriate labour supply affect the viability of investment in each particular industry.

The viability of the financing of education depends on the contribution which educated people will make to the economy once they enter the labour force. Education should enable the people who receive it to increase their productivity,

relative to what would be the case if they had not been educated. Higher productivity will result in higher economic output which will generate the resources to enable the cost of the education to be recouped. This is applicable whether the education is paid for entirely by the student or paid for in full, or in part, by the taxpayer. However, if the costs of higher education exceed its discounted benefits, no system of financing will be sustainable without subsidy from some other sectors of the economy.

2. How well does the Ugandan higher education system meet the country's developmental needs?

Unfortunately, there are grounds to believe that higher education in Uganda is ill suited to supporting the developmental needs of the country. Uganda educates far more people at tertiary level than can be productively absorbed by the economy, given its current level of development. This is both a waste of resources which impedes economic development and is financially unsustainable. Furthermore, the excessive numbers of students in higher education, and the very low entry standards, have degraded its quality. The result is that the quantity of university graduates is too large for the needs of the economy but the quality of these graduates is too low. It is also possible to argue that the education system fails to provide a sufficient supply of entrants to the job market with vocational skills, or with vocational skills of only poor

quality, although that is not the fault of the education system alone, as these types of skills are often best learnt through on the job training, such as apprenticeships, yet there is dearth of employers who can provide this type of training in Uganda.

In 2014 there were 180,000 students enrolled in Ugandan universities and a further 69,000 students enrolled in other institutions of higher education (colleges of business and commerce, teacher training colleges, etc); hence there was a total of 249,000 students enrolled in higher education (see table 1). If we assume that students pursue a three year course, this implies that, for each single year cohort of university age students, there are 60,000 students enrolled in universities and about 83,000 students in all types of higher educational institutions. The 2014 Population and Housing Census revealed that there was 3.18 million people in the 20-24 age cohort (the relevant age cohort for participating in higher education), an average of 638,000 people for each single year in that age cohort (table 1).

These data imply that, of the total population in the age cohorts relevant for participating in higher education, 9.4 percent attend university and 13 percent attend a university or some other type of higher educational institution (table 1).

The numbers enrolled in higher education have risen very rapidly, by almost 10 percent per annum between 2002 and 2014, compared to annual growth of 3.3

percent in the 20-24 age cohort during this period. As a share of the relevant age cohort, those enrolled in higher education more than doubled between 2002 and 2014, from 6 percent to 13 percent.

Table 1 Numbers, and percentage of relevant age cohorts, enrolled in higher education: 2002 and 2014

	2002	2014
Number of students enrolled in higher education	79,862	249,049
o/w enrolled in universities	57,144	180,560
Population age 20-24 (millions)	2.15	3.18
Percentage of applicable age cohort participating in higher education (percent)	6.2	13.0
o/w in universities (percent)	4.4	9.4

Notes: students are assumed to be enrolled on three year courses

Sources: Student enrolment numbers are from the Ministry of Education Management Information System; Population data are from the 2002 and 2014 Population Census

What job market opportunities are available for graduates of higher education in Uganda? The 2014 Population and Housing Census give a breakdown of the working population by age cohort and by type of occupation. The type of occupation to which most graduates aspire falls into two categories covered by the census: i) professionals and ii) technicians and associate professionals. None of the other categories of occupation require workers with higher education.

In the age cohort most relevant for graduates beginning their careers – 25-29 years of age – professionals account for 0.5 percent of the working population

while technicians and associate professionals account for 2.6 percent. Hence the two categories combined account for only 3.1 percent of the working population in the age cohort to which most graduates will belong to in the early years of their working lives. Given that approximately 13 percent of the relevant age cohort receives higher education, this implies that less than one in four graduates of higher education will be able to find work in a professional, associate professional or technical occupation.¹ Furthermore, the time series data available do not indicate that the share of professional, associate professionals and technicians in the workforce is increasing over time, which suggests that demand in the labour market for these categories of occupation is unlikely to rise substantially in the foreseeable future.

Table2: Working population age 25-30 in professional, technical and associate professional occupations, 2014

	2014
Working population age 25-29	2,167,000
ow in professional occupations	10,800
ow in technical and associate professional occupations	67,200
Percent share of professional occupations in working population age 25-30	0.5
Percent share of technical and associate professional occupations in working population age 25-30	3.1

Source: National Population and Housing Census 2014 Main Report, tables 2.1, 4.9 and 4.11

¹ This conclusion is based on two assumptions. First, that all, or virtually, all graduates enter the labour market, which appears a reasonable assumption to make. Second, that no more than a negligible share of workers in the professional, associate professional and technical occupations are not graduates of higher education. If a non negligible share of technicians are non graduates of higher education, the employment prospects of higher education graduates are even bleaker.

The stark implication of these numbers is that Uganda educates too many people – by a factor of about 4 - in higher education than is needed by the economy, given its current state of development. Why is demand for graduate level occupations low in Uganda? The main reason pertains to the structure of the economy. Outside of the public sector, workers with higher education are employed by medium and large scale private sector firms, which need managers, accountants, engineers, IT specialists, etc. But these firms make up a small share of the economy and an even smaller share of employment. The 2010 Census of Business Establishments found that formal sector enterprises (enterprises employing 5 or more workers) employed only 3.3 percent of the entire workforce (this includes all categories of employment of which professionals are only a small share).

The Ugandan economy still predominantly comprises household and micro-enterprises, mainly engaged in agriculture, artisanal manufacturing and informal services; these enterprises do not require professional workers. Until there is radical change in the structure of the Ugandan economy, with employment in formal sector private enterprises replacing employment in household and micro-enterprises, the demand for graduate level employment as a share of total employment is unlikely to rise. Structural change of this nature will eventually occur in Uganda, but it will be a slow process, probably taking several decades, not least because of the very rapid growth of the population.

3. What are the implications for the financing of higher education?

To evaluate the sustainability of the financing higher education we need to compare the true costs of education with the projected benefits, properly discounted.

The true costs of higher education comprise the full cost of tuition and examinations (cost of teaching staff, teaching materials, facilities and utilities, administrative support, etc) plus the foregone earnings of the student during his or her period of study.²

Unfortunately I only have a very rough estimate of tuition costs, and I would welcome more accurate estimates if these are available. There were some estimates of the unit costs of university education made for the Auditor General in 2010 which indicated that the costs of arts degrees were between Shs 2 and Shs 3 million, with degrees such as medicine being much more expensive. The National Council for Higher Education made separate estimates which were higher, by a factor of around 50 percent, for the period 2008/09.³ Obviously costs must have risen over the last 7 years. Given the fees charged by Makerere University for an arts degree, unit costs are probably now in the region of Shs

² The costs of accommodation, food etc should not be included because non students also have to eat and sleep.

³ Both sets of estimates are reported in The State of Higher Education in Uganda, 2010, p34.

7.5 million per degree. This is very low by international standards when compared to costs in comparable countries including those in Africa such as South Africa. Further, this amount of money spent per student seems rather too low to deliver university education of an international standard.

The foregone earnings during the years a student spends in higher education can be proxied by the earnings of a worker with secondary education. The 2012/13 Uganda National Household Survey (UNHS) provides data on median monthly earnings by level of education. Workers with secondary education had median monthly earnings of Shs 160,000 (table 3). If we allow for wages to rise at the same rate as headline inflation, their earnings would be approximately Shs 210,000 in 2017, which over three years amounts to just over Shs 7.5 million. Allowing for other expenses, such as books, etc the total cost of a three year university arts degree should be (very roughly) in the region of Shs 17 million.

From the standpoint of the economy, the cost of university education should be fully covered by the increased lifetime earnings of graduates, appropriately discounted, if that education is to generate positive gains to the economy (assuming that a worker's earnings equal his or her marginal productivity). Furthermore, if higher education generates positive returns to the economy, it ought to be financeable in principle, because either the state or the student should be able to borrow against future taxes or earnings. In practise, it may be

difficult for a student to borrow against his or her future earnings because of financial market imperfections but that could be rectified through policy measures such as student loan guarantees.

Let us assume that the discount rate for the economy is 15 percent, which is approximately equal to the Government's average borrowing costs. This implies that, if the cost of higher education is spread over the working life of the graduate, graduates of higher education must earn approximately Shs 3 million more per annum than workers with only secondary education.

Table 3 Median Monthly Salaries by level of Education of Worker, 2012/13

Education level	Median Monthly Salary (Shillings)
Secondary	160,000
Post-secondary specialisation	310,000
Degree and above	610,000

Source: Uganda National Household Survey 2012/13 table 4.7

The 2012/13 UNHS revealed that workers with a degree had median monthly earnings of Shs 610,000 which adjusting for inflation is equivalent to Shs 800,000 in 2017 prices (table 3). Comparing this with the median monthly earnings of Shs 210,000 (in 2017 prices) of a worker with only secondary education indicates that a graduate earns Shs 590,000 extra by virtue of having a higher education degree. The annual increment to income of higher education per worker is, therefore, Shs 7 million. Hence the annual gain in productivity and income arising from higher education is more than double its costs,

discounted over a working life. This means that, in principle, it should be possible to finance the costs of higher education by borrowing against future earnings provided that all of the graduates of higher education can find employment in graduate level jobs.

Unfortunately, as I have already discussed, less than a quarter of higher education graduates are likely to be employed in graduate level occupations. This reverses the cost benefit ratio for higher education. If three quarters of graduates cannot find graduate level employment, the discounted benefits of higher education, in terms of increased productivity and incomes, are likely to be only about half of the total costs of providing higher education. In these circumstances, it is impossible to finance in full the costs of higher education from the future productivity and income gains to the economy of those who receive higher education. As such, the cost of higher education must be subsidised from other sectors: i.e. from people other than the graduates themselves or from sectors of the economy other than those in which graduates work. That is neither efficient nor equitable, and will impede development.

4. What are the solutions for the future of higher education?

There is no rationale for providing higher education to 13 percent of the relevant age cohort when the economy can provide graduate level employment

for only a quarter of these students, upon graduation. It is a waste of scarce resources, which could be used more optimally on other areas of the education system. It is damaging for the higher education system, which does not have the staff or teaching facilities to cope with the huge numbers of students which now attend higher educational institutions. Furthermore, given the very low admission standards, with students able to enter university with only two principal passes at UACE level, it must be doubtful whether many of the students have the academic aptitude to pursue a university degree. They would be better off pursuing a less academically demanding form of training.

A more rational approach to higher education would involve raising steeply the academic requirements for students to enter higher education, so that only the most academically able gain entry. This would reduce the numbers of university students and ensure a better match between graduates and the demands of the labour market. It would also ensure that the average quality of graduates would rise, both because of the higher entry requirements and because smaller classes will allow teaching to be more effective. Higher quality graduates will benefit employers; the graduates themselves will be more productive and so employers will have greater incentives to employ them in graduate level jobs.

As an alternative to higher education, secondary school leavers who have not achieved very good UACE grades should be encouraged to undertake post-

secondary vocational training. Boosting the supply of job market entrants with vocational skills will be much more useful for potential employers than oversupplying the market with graduates for two reasons. First, the operations of most enterprises require far more workers with vocational skills than professional staff. Second, the quality of vocational skills is poor in Uganda, which impedes the productivity and thus the competitiveness of Ugandan enterprises. As can be seen from table 3, workers with a post-secondary specialisation earn almost 50 percent more than workers with only secondary education.

To conclude, the title of this public dialogue is: “the link between higher education and development: myth or reality?”. There is a real link between higher education and development; but the number of higher education students must be consistent with the demands of the economy given its level of development and the likely trajectory of its development over the medium to long term. Higher education would make a stronger contribution to economic development if it produced fewer, but better quality graduates. A smaller number of students in higher education would allow a larger share of the costs to be borne by the taxpayer, thus allowing larger numbers of intelligent students from poor backgrounds to attend university. This is on assumption that the quality of primary and secondary education is greatly improved evenly across

the country to allow students from poor economic backgrounds to fairly compete.