

Diversification in Sources of Financing Higher Education and its Economic Impact in the Changing Global Market: the Arab Challenge

Hoda Abd El Hamid Ali,

Abstract

The paper examines the implications of the emerging GATS regime and other forces behind the internationalisation of high education. The paper suggests that in the immediate future, as in the recent past and present, universities in different parts of the world will be unequally integrated in to the new global system of transnational higher education. The challenge for Arab region is to stem current and forestall future international educational inequalities and hierarchies by revitalising its own universities and building regional centres of excellence and systems of intra-regional and international academic mobility, exchange, collaboration, connectivity, and regulation that generate and sustain empowering knowledge networks. Facing these challenges and in era of tightening budgets, universities and other institutions have often respond by conducting economic impact studies to justify governments expenditures on an economic basis. The paper is divided into seven parts. The first part gives introduction to the study; second, it discusses the state of higher education in the region. The third part, interrogates the implications of the changing world environment on the higher education market. Fourth part shows the Arab countries response in this challenged environment, and the recent educational reforms in the region. The fifth section deals with the conceptual link between higher education and economic growth. The sixth, section measures the economic impact of public expenditure on higher education in the Egyptian economy. The last section shows summary and conclusions.

Introduction

It has become a cliché of our times that we live in globalising indeed a globalised world marked by the rapid flows of commodities and capital, ideas and institutions, practices and people, visions and viruses, a world of unprecedented transnational connectedness and competitiveness. The old certainties and conventions are crumbling, yet the content of the new remain fuzzy, whether we are talking about life in general or specific sectors including higher education. Knowledge-based competition within a globalising economy is prompting a fresh consideration of the role of higher education in development and growth. Previously it was often viewed as expensive and inefficient public service that largely benefited the wealthy and privileged. Now it is understood to make necessary contribution, in concert with other factors, to the success of national efforts to boost productivity, competitiveness and economic growth. Viewed from this perspective, higher education ceases to contend with primary and secondary education for policy attention. Instead, it becomes an essential complement to educational efforts at other levels as well as to national initiatives to boost innovation and performance across economic sectors.

This changing world market of Higher education is driven internally by the growing complexity of knowledge and extremely by the increasing commercialisation of knowledge. It is quite evident that Arab universities, and universities all over the world are becoming more interconnected internationally mainly because trade in educational services is expanding rapidly and becoming subject to global trade rules and negotiations under the General Agreement of Trade in Services (GATS) of the World Trade Organisation (WTO). The implications of emerging GATS regime and other forces behind internationalisation of higher education vary not only for different institutions within countries but also among different countries, universities in different parts of the world will be unequally integrated in to the new global system of higher education. The challenge is to stem current and forestall future educational inequalities by fostering systems of international academic mobility, exchange, collaboration, connectivity, and regulation that generate and sustain empowering knowledge networks.

This study focuses on the role of Arab governments in this challenging environment in regulating, funding, and monitoring the provision of high education. When forces for increased liberalisation of trade are added to this scenario, and in an era of tightening budgets there is an expectation and a great fear about increasing privatisation in higher education. Institutions of higher educations and policy makers give some recommendations to their governments by giving economic justification based on conducting economic impact analysis.. The economic impact analysis will be applied in this paper mainly to achieve two main purposes. The first is to link higher education to economic growth. The second to give some policy recommendations to Arab governments in general and to the Egyptian government in particular. The author has identified an agenda for future work on measuring the economic impact of high education that are central for policy development. My hope is that the publication of this study will spur additional work to enrich the ongoing policy debate and assist Arab countries to develop sound polices in their quest for faster growth, deeper poverty reduction and lasting improvements in the daily lives of their citizens.

Purpose of Paper

This study commissioned to review what is known about the conceptual underpinning for higher education's role in development in this competitive global environment, and to assess empirical evidence that might lead to better understanding of how these interactions function in practice. The analysis relies on an economic impact approach which inevitably obscure specific lessons about diversification of sources and the role of privatisation in financing higher education in Egypt that may make a difference, and identify some key policy issues which needed to be addressed For Arab Countries in general and Egypt in particular. The purpose of this paper is threefold: 1) Give a global sight to the higher education market, and elaborate on its implications, 2) begin to situate Arab countries in this scenario, and give answer to the question of "where are we", 3) Linking higher education to economic growth by applying an economic impact analysis .

Methodology

This study examines the implications globalisation on the changing sources of financing for higher education on and its impact on economic growth by utilising the following methods:

The Theoretical Analytical Framework:

- This method is used also in dealing with the recent trends on GATS and what is known by internationalisation of higher education, and its implications for Arab higher education.
- This method is used in reviewing the conceptual links from higher education to Economic Growth and the supporting evidence.

The Economic Impact Analytical Framework

In most countries, even where education is supposed free, new or supplementary charges are being introduced that shift an additional share of costs to students and their parents and a decline in public financing. Some of these charges have been quite substantial.

The economic impact analysis has become a standard tool used by universities to persuade state legislatures of the importance of expenditures on higher education.

The study will apply this analysis measuring the economic impact of public expenditure on high education in Egypt according to the availability of data.

The study will adapt the traditional economic – base approach followed by Bluestone (1993). He points out that to assess the economic impact of investment in high education in a specific country, state or region can be applied following these steps based on Input-Output data for a specific institution or for the whole country.

1. Identify region of analysis
2. Assess Student Expenditures
3. Assess University Grants
4. Sum Figures from steps 2+3
5. Apply Multipliers
6. Determine the final economic impact and estimate new tax revenue

Others (Stevens, 1994; Peddle, Kise, and Lewis, 1995) argued that the scope of an economic impact analysis should be expanded to include additions to the skill base of the region or country; through higher education, a university produces skilled workers, who earn higher incomes than they would without that education and, thus, pay more money to the state in taxes. The skill – base approach, yields substantially higher estimates than the economic –base approach.

The State of Higher Education in Arab State Region (MENA countries):

In spite of economic weakness, the region continued to expand its higher education facilities. Gross enrolment ratio (enrolment as a percentage of the 20-24 age-group population) increased from 13.7 percent in 1985 to 14.5 percent in 1994. Although the relative growth was less than that for the whole developing world, its higher base called for a strong effort in increasing the ratio (see Table 1).

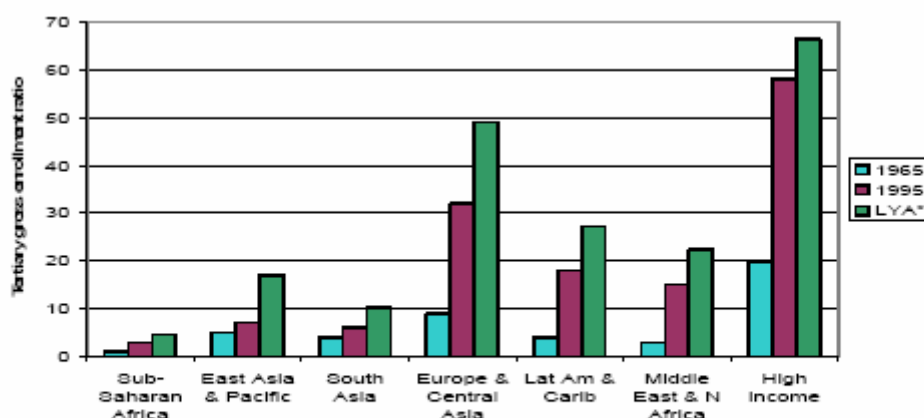
Table (1): Enrolment ratio and public expenditure:
Comparison between the Arab States and all the developing countries

Category	1985	1990	1995	2000
Gross enrolment ratio				
Arab States	10.7	11.4	14.5	22
Developing countries	6.6	7.1	8.9	14
World Total	12.9	13.8	16.2	22
Public expenditure on education as % of GDP				
Arab States	5.8	5.2	5.2 ⁽¹⁾	5.3
Developing countries	4.0	4.0	3.9	4.1
World Total	4.8	4.8	4.9	4.4
Public Expenditure on Education per capita (US \$)				
Arab States	122	110	110 ⁽¹⁾	--- (2)
Developing countries	28	40	48	---
World Total	124	202	252	---

Source: UNESCO: UNESCO Statistical Yearbook, 1997 and 2003, Tables 2.10 and 2.11.

The following figure also shows that the region has achieved rapid gains compared to other developing regions such as Sub-Saharan Africa, East Asia & Pacific, and South Asia, but compared to other high income countries; gender disparities have traditionally been wide and remain so.

Figure (1) Tertiary Gross Enrolment Ratio in MENA Countries Compared to Other Regions



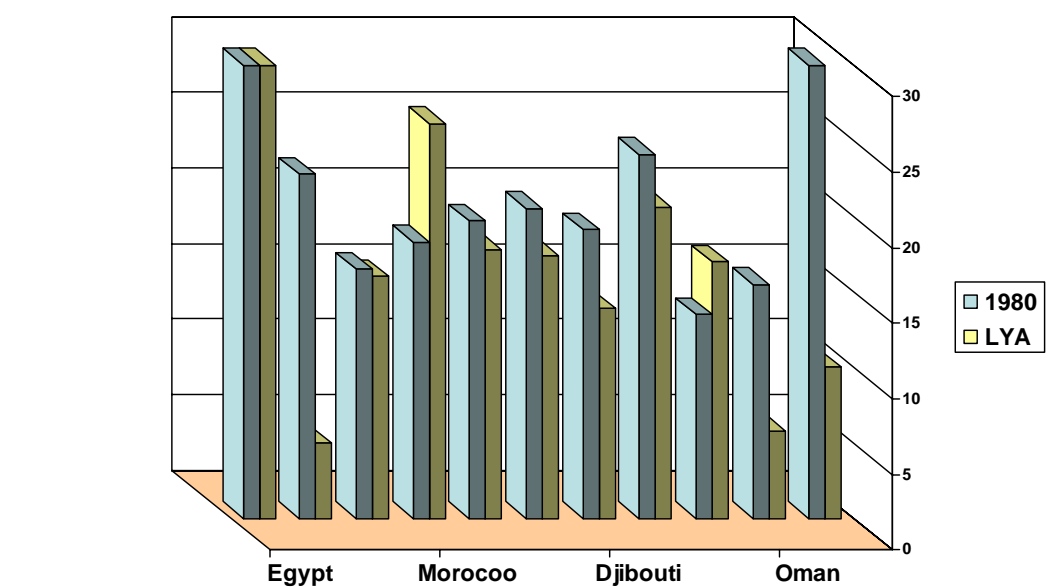
* LYA (latest year available) means that for each country, the most recent data available are used, and those data are then aggregated by region. For most countries LYA is 2002/2003. The range is 1998/1999 to 2003/2004.
Source: UNESCO and World Bank. See explanatory footnote in previous paragraph.

Since the 1960s, Arab countries began reconstructing their education systems and other cultural aspects of their societies. They have “invested heavily in education, transforming it from a privilege into a right. As a result, most Middle East and North Africa (MENA) countries are now approaching universal primary school enrolment; the major exceptions are Morocco, Saudi Arabia, and Yemen, where access to primary schools remains problematic, especially for girls” (Egghen, 2000). The substantial commitment to education of national governments in this region is reflected in their levels of spending on education. What is striking is the fact that this increase in enrolment ratio occurred in spite of a decrease in the share of public expenditure for

education in the Gross National Product (GNP) from 5.8 percent in 1985 to 5.5 percent in 1994 which now average 4% of the gross domestic product (GDP) and 15% of total government spending. These levels of spending are somewhat above those of comparable developing countries and are on a par with those of high-performing Asian economies. In some important respect, this investment has paid off (Eeghen, 2000).

Most striking is the decrease in the share of allocation to higher education in the total allocation for education. As with other aspects of education, the assessment of these efforts depends entirely on the availability of data on the financing of education in general and higher education in particular and on their reliability. However, it is difficult to obtain statistics on education finance which are reliable, complete and suitable for international comparison. Data from private sources such as households, businesses or non governmental organisations are not, in general, available. Moreover, data on spending by ministers other than the national education Ministry, or local government or independent bodies (universities), are not always fully recorded, nor are the available data always conveniently broken down by the type of expenditure (current or capital). Consequently the higher education expenditure data analysed in this study only concern spending from public funds. Out of eleven countries of the region for UNESCO could provide statistics for two comparable periods of time, eight had lost their share over time see figure 2. Morocco devotes the greatest proportion of its government budget (approximately 27%) to higher education. This shows a further loss for the higher education sector in respect of its financial situation.

Figure (2) Public expenditure on Education as a % of Total Government Expenditure



- * LYA (latest year available) means that for each country, the most recent data available. For most countries LYA is 2000. See the previous explanatory footnote.
- **Source: UNESCO: UNESCO Statistical Year book, 1997 and 2003, Table 4.2.**

In addition to general economic reasons, the higher education system faced financial shortfalls due to several other reasons, given below. Priorities for lower levels of education were increasing, especially for primary education, which was being recognised as a basic human right for the people. Since the 1970s, educational reform was directed to combat the high illiteracy rate in the region by concentrating on the primary and lower secondary levels and by implementing compulsory attendance of these levels. This educational reform is known as the implementation of the basic education system. Only during the 1990s, education reform policies in most of the Arab states have focused on the quality of and equity in education.

Demand for higher education was increasing at a faster rate than the government could cope with financially. Demand for higher education was becoming more differentiated (customised) because of changing labour market needs from one side, and diversified clientele from the other, requiring additional resources. The explosion of knowledge and the acceleration of technological development result in rapid obsolescence of skills which also called for more financial resources. Priority to improve quality of teaching and research was

becoming more important, and emphasis on scientific and technological research and development called for more funds.

Yet, the broad-based economic recovery of recent years has not fully met the major challenges facing the MENA region. The core problem in the MENA region is that economic growth and educational reforms have been geared toward quantitative goals. These goals were implemented successfully in the economic sector, where higher rates reflected economic progress, but the education sector is different. Despite the higher rate of enrolments and the growing number of graduates, the educational system did not improve the quality and performance of its graduates. In addition, the education system failed to match the skills of its graduates to job market requirements. Accordingly, the need for educational reform in the region during the 1990s has grown urgent. These reforms should focus primarily on the relevance and quality of education.

The quality and coverage of education can not improve without adequate and dependable financial resources. To enable the higher education system to educate as many students as possible, several policies could be adopted by the region:

- Improving efficient utilisation of resources
- Encouraging income generation
- Encouraging privatisation

The Global Market for Higher Education

Total estimated student enrolment in global higher education in the year 2000 was around 90 million. By 2003, more than 100 million students were enrolled in higher education worldwide, with China alone accounting for approximately 4 million of the increase. In China in 2004, more than 30 % of higher education students were in the first year of study, with a total of 26 million senior secondary school students about to enter the higher education system. This number translates in to roughly 15 million Chinese students who hope to enrol in tertiary education programs over the next four years.

India faces daunting demand for both secondary and higher education. It is not unheard of for some higher education programs to receive 6,000 applicants per place. With over 60 percent of India, population falling in the 0-to-25 year age group. The United Kingdom has more than 330 universities for a population of around 60 million people. If the same university – to- population ratio were applied to India , the country would require more than 5,500 additional universities to put it on an equal footing with the United Kingdom. Since the early 1990s, both public and private higher education institutions in most countries have struggled to keep up with growing enrolment demand. Particularly in developing countries, governments have been forced to balance education system needs against fiscal realities. As a result, they have begun to seek alternative ways to fund the development of high education through more innovative models that can more readily satisfy the changing demands of market-led economies and knowledge societies.

The promotion of trade in education service is directly linked to significant trends in higher education. Higher Education Systems in both developed and developing countries are being forced to navigate their way through "a perfect storm" of seven converging forces of change:

- An increasing world population, with a large cohort of potential higher education students; the increasing importance of Knowledge as the major driver of economic development, which has increased the importance of education, training and lifelong learning;
- The impact of globalisation on both higher education and local markets, which has created a global market for higher education and training, and the continuing impact of internationalisation on higher education, including international student enrolment and faculty and student exchanges. Internationalisation has also increased the number of institutional relationships and alliances, with many affiliations leading to commercial initiatives by both public and private sector players. It has also contributed to greater transferability of qualifications both within and across borders;
- The impact of increased competition , both within and across borders, in a globalised economy and the consequent emergence of new , borderless providers of tertiary education;
- The global decline in public financing, especially for higher education.

- The continuing ICT revolution and use of the Internet, which are impacting the way education is organised and delivered at all levels of education system

In short, these trends contributing to, as well as responding to, the expanding business of cross order delivery of higher education services. The GATS aims to capitalise on this market potential and promote further international trade in education services by establishing rules and procedures to eliminate barriers to trade. We can summarise the previous forces of change in to four main trends:

Changing Student Profiles.

The changing landscape global higher education is reflected in changed student profiles in most countries. According to the US department of Education, over 5.9 million, or 39 percent, of all students enrolled in higher education programs in the USA in 2004 were over the age of 24. This number is projected to reach 6.6 million in 2007 and 6.9 million in 2012. In OECD member countries, the proportion of adults with tertiary education qualifications has almost doubled over the past 25 years, rising from 22 percent in 1980 to around 41 percent today.

The lifelong learning agenda is also taking hold in developing countries. They applied more flexible age participation policies attracting new kinds of learners to higher education programs. Countries as Chile, China and Malaysia are beginning to place increasing importance on accommodating these new learners, as they recognise the potential contribution that a more highly skilled workforce can make to economic development

Decline in Public Finance.

In most countries, even where education is supposedly free, new or supplementary charges are being introduced that shift an additional share of costs to students and their parents. Some of these charges are substantial. For example, contributions from non-state sources recently increased from 2 to 23 percent of educational spending in Hungary. In Canada, average undergraduate tuition fees increased by 135 percent between 1991 and 2001. Australia introduced tuition fees of roughly US\$750 per year in 2001. In Great Britain, parliament recently approved a plan to allow university tuition fees for British students to rise up to US\$5,450 a year as of September 2006. In China, Public universities currently derive more than 40% of their income from non-state sources; household spending on education in the country is estimated at 10% and is expected to climb to 14 percent by 2010. And in Cambodia, one of the world's least developed countries, it is estimated that less than 40 percent of total higher education funding comes from the state.

Use of New Technologies.

Many countries have been forced to adapt the use of mass education models to cater to changes in local markets, demographics, employer demands and student profiles. Such models are intended to advance higher education and training through non-state financing. Today, sound online programs appeal to students who prefer to learn independently. For some, the use of ICTs and the Internet facilitates greater student engagement and participation than do traditional one-way lectures. Improved online pedagogies are providing greater opportunities for active learning by project groups, with the benefit of more regular personalised feedback and formative assessment.

E-Learning.

Electronic learning can be defined as instructional content or learning experience delivered or enabled by electronic technology. The term covers a wide range of applications and processes, such as web-based learning, computer based learning, virtual classrooms and digital collaboration. It can be used to describe the delivery of content via the Internet, intranets or extranet, audio-and videotape, satellite broadcast, interactive TV, CD-ROM and other electronic means. E-learning is more appropriate for knowledge based applications compared to conventional mass media technologies. Where as the later have become the preferred medium for skills training.

The Region Response in Changing Patterns of Financing Higher Education

The above proposals show the beginning of a shift in the international policy community's attitude towards higher education. In recent years key organisations as the World Bank and major donor governments have begun to appreciate the importance of higher education for economic development. Along with UNESCO, the World Bank have come to accept that in a multi-pronged development strategy, applied by developing nations, all levels of education are important. Arab countries of different levels of development also have different sources of funding for education. These economic differences among Arab countries reflect the

funding of educational reforms in the region. In Qatar and Saudi Arabia, educational reforms are nationally and regionally financed; that is, they rely on the national governments' MOEs or on the Arab Bureau of Education for the Gulf States (ABEGS). In the non-Gulf countries, such as Egypt, Lebanon, Algeria, Morocco, Yemen, and Jordan, the national governments' MOEs and the World Bank support the funding of educational reforms.

While MENA countries invest a higher proportion of their gross domestic product in education than other regions in the world, the region continues to face challenges in developing a high-quality education system at all levels, and in promoting life-long learning and training that responds to the needs of the labor market. Improving the education system, therefore, is an important component of the World Bank's strategy to promote knowledge-based economic development, which thrives on quality education and people's creativity, and to facilitate the economic transition of countries in MENA. In particular, the World Bank works with MENA countries to ensure equitable school access and retention; improve the quality and relevance of primary, secondary and tertiary education; build capacity in education governance in both the public sector and in local communities; increase the efficiency with which education services are delivered; and guarantee the fiscal sustainability of public investment in the education sector. Furthermore, the World Bank has been paying increasing attention to the specific issue of those who have been excluded from educational opportunities (dropouts, working children, the disabled, and other disadvantaged youth), encouraging MENA countries to develop cross-sectoral responses to ensure that this population too participates in the education experience.

The Bank has responded to diverse and changing needs through knowledge transfer and lending, ranging from supporting Yemen's Fast Track Initiative to meet Education for All objectives, to improving the capacity of Jordanian, Tunisian and Moroccan educational systems to adapt to the global knowledge economy. Projects in Jordan, Tunisia and Morocco have focused on improvements in educational quality and experimentation with IT. Sector work in Tunisia and Morocco has provided insight into the costs and financing options for higher education. Furthermore, the Bank has supported working groups consisting of representatives from Yemen, Egypt, Jordan and Morocco to develop strategies for vulnerable children. Finally, projects and sector work in Jordan and Egypt have supported the development of early childhood development interventions.

The governments of MENA countries have traditionally acted as key players in their economies, investing directly in their industrial capacity and financial institutions. Between 1970 and 1990, petroleum revenues permitted many governments (especially those of Gulf countries) in the region to maintain very high levels of public expenditures in education relative to other low- and middle-income countries. In the 1990s, however, fiscal constraints, changes in the economic philosophy of governments, and increasing globalisation and GATS caused a shift in the MENA region toward a relatively greater reliance on the private sector to promote growth, generate employment, and improve standards of living. As the private sector expands, the role of the state is changing from that of a key player towards a more indirect role that of facilitating the development of competitive private markets (World Bank Group, 2000).

One of the privatisation movement's goals has been to open new job opportunities for the youth. However, in the mid-1990s, moves toward privatisation could not solve the unemployment problem in the MENA region. Such moves failed to improve the quality of education, especially with respect to secondary vocational and technical education. Therefore, during the 1990s, the educational reforms in Egypt, Lebanon, Jordan, and Yemen have been directed towards creating a strong institutional framework for this type of schooling. Privatisation in education is becoming a major economic and political trend around the world today, and despite its advantages in absorbing excess demand, and the less costly product mix, one has to be certain about its disadvantages.

Privatisation faces financial problems because in most cases laws usually do not allow incentives for private contributions. There is a lack of donors in developing countries and business sector is too weak to support higher education. Fees being the major source, institutions are equipped with low quality inputs, resulting in low quality outputs, as indicated before, especially in excess-demand driven privatisation. In excess-demand driven privatisation, cheap and low quality higher education in soft subjects, offered to a large clientele, reduce the overall quality of graduates, contributes to unemployment and sometimes to negative returns on investment. Some of the benefits of high education accrue to the society as a whole; higher education should pursue national policy priorities that might have less importance for the private sector. Privatisation may

encourage corruption. Profit – motive and competition for resources of private institutions look for opportunities to get away with rules and regulations to keep their institutions economically viable. Facing these challenges the economic impact analysis has become a standard tool used by universities to persuade state legislatures of the importance of public expenditures on higher education. The study will apply this analysis as an attempt to assess the economic impact of public expenditure on higher education in the Egyptian economy.

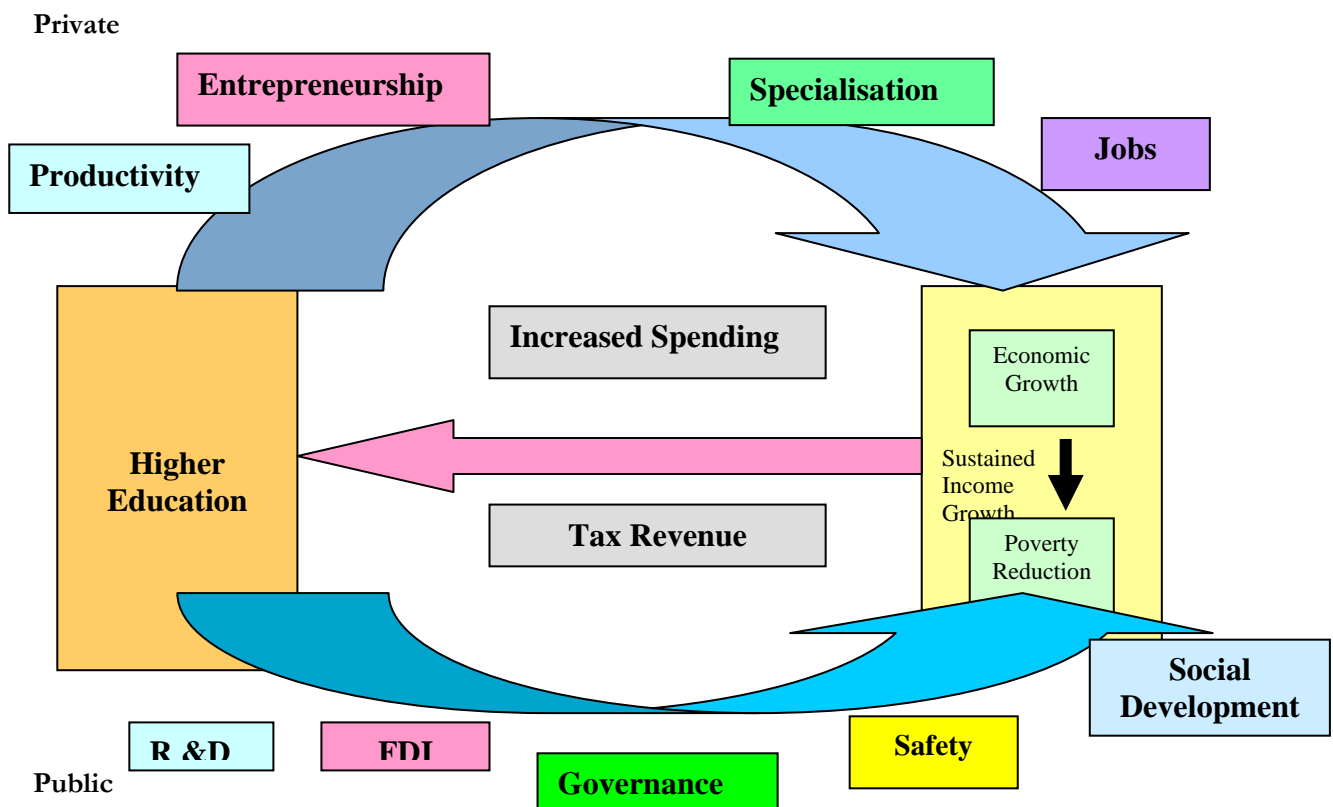
The Conceptual Links from Higher Education to Economic Growth

Ideally, we would seek to measure the economic impact of higher education based on private and public expenditure, but the paucity of data forces a narrower focus. Our formal analysis deals with interrogating the implications of the role played by the government in financing high education and its economic impact. As mentioned above that GATS in High Education will increase the need for public institution to seek alternate sources of funding which sometimes means engaging in for- profit activities or seeking private sector sources of financial support which may cause negative effects as mentioned above.

As Figure (3) shows, higher education can lead to economic growth through both private and public channels. The private benefits for individuals are well established and include better employment prospects, higher salaries, and a greater ability to save and invest. These benefits may result in better health and improved quality of life, thus setting off a virtuous spiral in which life expectancy improvements enable individuals to work more productively over a longer time further boosting lifetime earnings. Public benefits are less widely recognised, which explains many governments' neglect of higher education as a vehicle for public investment. But individual gains can also benefit society as a whole. Higher earnings for well –educated individuals raise tax revenues for governments and ease demands on state finances. They also translate in to greater consumption, which benefits producers from all educational backgrounds.

Before one adopts privatisation of higher education, one has to be certain about its merits and disadvantages as mentioned above. The framework presented in figure 3 does suggest many possible routes through which higher education can benefit economies. In the next section, we assess the evidence that supports these links, and finally present new evidence of our own.

Figure (3) the Conceptual Link Framework



Source: Bloom.D, Canning.D, and Chan.K, Higher Education and Economic development in Africa (2005), P.16.

The traditional method for estimating macroeconomic impacts uses a regression approach to determine the rate of growth of income per capita measured against an initial level of education (such as total years of schooling), with controls for initial levels of income and other factors that may influence steady-state income levels (such as openness to trade, institutional quality, and geographic characteristics as indicated above, other recent researches apply economic base approach to estimate the impact of expenditure on higher education and income growth. The study will revise the traditional economic – base approach followed by Bluestone(1993). He argued that the scope of an economic impact analysis should be expanded to include additions to the skill base of the region or country; through higher education, a university produces skilled workers, who earn higher incomes than they would without that education and, thus, pay more money to the state in taxes.

In an era of tightening state budgets, institutions of higher education are being asked by state governments to justify their expenditures on an economic basis. Legislatures recognise that expenditures on higher education usually substitute for expenditures in other areas that are also important to the state. Therefore, the question naturally arises as to whether monies would be better spent on some other programme. Institutions of higher education have often responded to legislative requests for economic justification by conducting economic impact studies. This approach was popularised with the development of a formal method by Caffry and Isaacs (1971). Since then, a myriad of institution-based studies has been produced on the subject (e.g., Afari, 1995; Altman, 1985; Ashton and Huff, 1982; Backhaus and Whiteman, 1994; Bluestone, 1993; Breslin, 1979; Brown, 1995; Butler, 1980; Elliott and Meisel, 1987; Gana, 1994; Lewis, Rise, and Peddle, 1995; Peddle, Kise, and Lewis, 1995; Pursell and Deichert, 1984; Seybert, 1991; Stevens, 1994; University Planning, 1990).

We argue that the skill-base approach substantially overestimates the economic impact of a university. The overestimation arises from an incomplete consideration of the potential effects migration has on human resource location. This note argues that the ultimate source of economic impact is expansion of the economic base from the creation of new and higher-paying jobs. Attempts to depart from this approach generate questionable methodologies.

Two Approaches to Economic Impact Analysis:

A comprehensive review of the current state of knowledge on the economic-base approach was given by Elliot, Levin, and Meisel (1988) in an earlier volume of this journal. This approach accounts for the increase in the total economic base of a region resulting from new federal grants, tuition from out-of-state students, and other exogenous influences; the injection of this new money into the economy is an impetus for economic growth in the form of new jobs and higher incomes for area residents. Elliott, Levin, and Meisel (1988, p. 17) noted that "the basic objective of an economic impact study is relatively straightforward—to measure the increase in a region's economic activity attributable to the presence of a college or university." The task of the researcher is to ask the hypothetical questions: What would happen if the university did not exist. How many fewer jobs and how much less income would be present in the region.

Elliott and colleagues outlined a six-step procedure to answer such questions and calculate the economic impact of a university. First, carefully identify the region of analysis, which may consist of a metropolitan area, country, state, or multistate area. Second, randomly survey students, faculty, and staff to obtain accurate information on expenditure patterns and identify students who would attend school outside the region if the university did not exist. Third, identify funds received by the university from sources outside the region. Fourth, sum the expenditures estimated in steps two and three. Fifth, properly select and apply input-output multipliers to the sum in step four to determine the final economic impact. Sixth, estimate tax revenue generated from the university's economic impact (estimated in step five). The figure generated in step six measures the extent to which the state receives a monetary return on its investment in a university. If this procedure is followed properly, a reliable estimate of economic impact (in terms of expansion of the economic base) can be obtained.

The newer skill-base approach does not disregard the economic-base approach, but adds to it. The skill base consists of the technical know-how of workers within a region. Through providing education, a university expands the skills and, thus, the productivity and income of workers. Bluestone argued that economic impact should be conceptualised as the increase in the economic base plus the income generated from increases in the skill base. Thus, Bluestone added three additional steps to the process of estimating economic impact. First, estimate the net income received by all graduates of the university (who remain in the state after

graduation) in excess of what they would have earned without a university education. This figure was computed by taking the difference between the earnings of college and non college graduates.

Second, compute the discounted present value of the sum computed in the previous step. Bluestone argues that this amount is an economic impact on the state uniquely attributable to the university. Third, estimate the tax revenue generated from the increase and subtract the state subsidy on education. This amount is considered a return on the state's investment in a university. Bluestone noted that the skill-base approach is particularly useful in the case of the University of Massachusetts at Boston (UMB), since 89% of undergraduates and 82% of graduates remain in Massachusetts after graduation. Bluestone estimated a yearly income flow to the state government of \$664.3 million (economic base plus skill base). This estimate is about 19 times higher than estimates produced using the economic-base approach alone (\$34.3 million). Using the economic-base approach alone, the state's direct return through tax revenues to expenditures on UMB is \$0.08 cents on each dollar invested. Whereas, using the skill-base approach, the state's return through tax revenues is \$1.57 for every dollar invested (Bluestone, 1993, pp. 1-2).

Other studies that implemented the skill-base approach were Stevens (1994), which assessed the impact the University of Maryland System (UMS), and Peddle, Kise, and Lewis (1995), which assessed Northern Illinois University (NIU). The Stevens (1994) report estimated a \$4.6 billion economic impact (economic base plus skill base), which is \$1.3 billion higher than would be obtained by using the economic-base approach alone. The increase in estimates from the skill-base approach makes the difference from UMS being a "breakeven" system (in terms of state tax revenue) to "an exceptional 28% return on investment!" (Stevens, 1994, p. iii).

Peddle, Kise, and Lewis (1995) estimate an economic impact for NIU of \$477.5 million using the economic-base approach only, but increase their estimate approximately five times (to \$2.6 billion) by using the skill-base approach (implying an increase of \$44.4 million in state tax revenues). From the results of the three studies cited above it is clear that the skill-base approach generates a significantly higher impact figure than the economic-base approach. In addition, each study presents investment in a university as a huge windfall to a state in tax revenue. The use of skill-base methodology converts a university from being a drain on the state treasury into a profitable investment for the state. The political implications of this result are clear: state governments should reverse present trends that cut expenditures to higher education in order to take advantage of high financial returns.

Economic Impact of Government Expenditure on High Education in Egypt

As mentioned before the globalisation on both higher education and local markets, has created a global market for higher education and training. Both public and private higher education institutions in most countries have struggled to keep up with growing enrolment demand. Particularly in developing countries, governments have been forced to balance education system needs against fiscal realities. As a result, they have begun to seek alternative ways to fund the development of high education through more innovative models that can more readily satisfy the changing demands of market-led economies and knowledge societies. One of the privatisation movement's goals has been to open new job opportunities for the youth. However, in the mid-1990s, moves toward privatisation could not solve the unemployment problem in the MENA region. Such moves failed to improve the quality of education, especially with respect to secondary vocational and technical education. The study will measure the economic impact of governmental expenditure on high education in Egypt, so government should reverse present trends that cut expenditures to higher education in order to take advantage of high financial returns.

High Education Data in Egypt: Limitations, and Origins of the problem:

This section outlines education data and especially in high education available in Egypt, highlighting information limitations that hinder evaluation of the impact of high education on economic activity. It then briefly reviews origins of the problem and outlines possible solutions to overcome these limitations.

Limitations:

According to national account data, the education service is included in social and personal services, and there isn't any separate data for the education activity. The same limitation is found in input-output table (2002-2003), which might lead to an inaccurate measure to the contribution of high education to economic activity. Assessing economic impact of higher education as mentioned earlier depends entirely on the availability of data on the financing of higher education and on their reliability.

However, it is difficult to obtain statistics on education finance which are reliable, complete and suitable for international comparison. Data from private sources such as households, businesses or non governmental organisations are not, in general, available. Moreover, data on spending by ministers other than the national education Ministry, or local government or independent bodies (universities), are not always fully recorded, nor are the available data always conveniently broken down by the type of expenditure (current or capital). Consequently the higher education expenditure data analysed in this study only concern spending from public funds.

Ideally, we should apply an economic impact analysis of government expenditure on a specific university or any other higher educational institutions as mentioned above, but because of limitations of data, the study will measure the economic impact of government expenditure on the economic activity depending on Egypt 's2002-2003 Input-Output table.

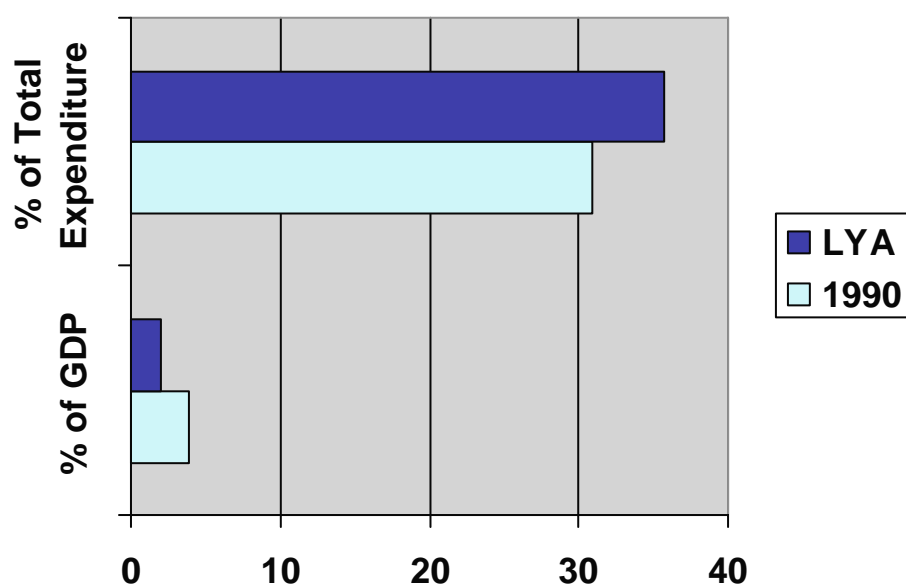
Public expenditure on higher education as a percentage of GDP and as a percentage of total government expenditure:

Public expenditure on higher education expressed as a percentage of GDP measures the share of a country's resources devoted to higher education.

Total public expenditure on higher education as a percentage of total government expenditure is the share of the government budget that does to higher education. It is, in theory, a better indicator than the previous one in making comparisons with other sectors in the economy (health, defense, etc.).

It should be noted that the coverage and quality of data on education financing in general and in higher education in particular in the Arab region in general and not specific in Egypt allow us to make very general observations.

Figure (6): Public Expenditure on Higher Education as a % of GDP and as a % of Total Public Educational Expenditure.



* For the % of Total Education Spending, the Comparison was between data in 1980 and the LYA (Latest Year available) was 1994. For The % GDP the LYA was year 2000.

Source: UNESCO Statistical Yearbook (Section 4).

Economic Impact Measurement

In order to conduct economic impact analysis of public spending on higher education, we used the following data sets: public spending on higher education, and input-output model (2002-2003), and different sets of multipliers as shown in figure (4) (The Economic Base approach).⁽²⁵⁾

Economic impact of public expenditure on higher education= Public spending on higher education * Multiplier

We Calculated the Size of public expenditure on higher education as a % of GDP to be equal nearly 4.9 million L.E in year 2000.

This estimated spending (which includes both capital & current expenditure and expenditures as staff salaries, benefits, books, teaching materials, welfare services, rents , telecommunications and travel) can be converted to various measures of economic impacts using economic ratios and multipliers for education-related industries.

Therefore, the economic impact of public spending on higher education produces the following indicators:

- Direct effects, which are production changes associated with the immediate effects of changes in public expenditure.
- Indirect effects, which are the production changes resulting from various rounds of re-spending of public expenditure in industries supplying products and services to the education sector,
- Induced effects, which are the changes in economic activity resulting from household spending of income earned directly or indirectly as a result of public educational spending. Indirect and Induced effects are both sometimes referred to as secondary effects.

To capture secondary effects , this study relies on Egypt's 2002/2003 input-output table, showing the effect of how spending in different sectors creates cycles of demand for intermediate goods produced by other sectors, and cycles of demand for consumption goods by workers in various sectors of the economy. Starting with our information about public spending on higher education in 2000, the study traces these cycles of demand in to their respective sectors creating estimates of total effects of this expenditure on output and sales in the whole economy.

Furthermore, public expenditure on higher education and demand for different goods and services translate into demand for workers to produce these goods and services, as well as to income of wages, salaries, which individuals utilise in their household expenditures. Thus, labour income and employment multipliers were calculated for public higher education expenditure in 2000. (I/O Multipliers Used are shown in Appendix 2). Finally potential contribution to taxation from public expenditure on higher education is estimated and spread across all affected sectors.

Summary and Conclusion

The study mainly traces the effect of the changing world market of higher education on sources of financing. The study shows that Currently Arab universities and indeed universities every where , are undergoing unprecedented change and confronting multiple challenges brought about by the vast and complex process of globalisation , technological change, and the emergence of new knowledge economies and economies of knowledge. The universities' constituencies and competitors are more plural than ever as expectations of access and accountability expand at the same time as the universities lose their monopoly of knowledge production and public fiscal support diminishes.

The import of the pressures facing universities, the challenge of internationalisation is very large. In most, if not all countries of the world, the government in this challenging environment plays a critical role in regulating, funding, and monitoring the provision of high education. When forces for increased liberalisation of trade are added to this scenario, there is an expectation and a great fear among many education leaders is that while private investment in education rises, the public support will fall even more steeply. In an era of tightening budgets, institutions of higher educations are being asked by governments to justify their

expenditure. Institutions at the global level responded to legislative requests for economic justification by conducting economic impact analysis. The study follows this trend by applying an economic impact analysis of public expenditure on higher education in Egypt mainly to give policy recommendations to government and a way to link higher education to economic growth.

Despite of limitations of data which might lead to overestimation of economic impact, the study findings are clear. At a minimum, the study should enhance the government to not to decrease its support to higher education, and it should be given a higher government policy priorities. A concerted effort to develop higher education in Egypt will allow the country to capitalise on its considerable education potential in general and higher education in particular, and the growing importance of the role played by higher education in achieving economic development.

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