Economic Benefits and Options for Financing Higher Education in Sri Lanka

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Abstract

Higher education can produce an array of economic benefits. This paper analyzes two dimensions of benefits. First, the relationship between education and earnings. Second, the relationship between education and household economic welfare. The results show that both individuals and households benefit considerably from investment in education, and especially higher education. The paper then examines public investment in education. Several different models of higher education financing in the world are presented. The paper concludes by discussing several options for expanding investment in higher education in Sri Lanka through the promotion of public-private partnerships, which is a topical concern in the country.

Keywords: Higher Education - Education Financing - Private - Public Partnerships

Introduction

Higher education has the capacity to produce an array of important and wide-ranging economic and social benefits. Individuals with higher education qualifications enjoy better employment prospects, higher earnings and greater economic welfare over their life-cycles. The economies of countries that have accumulated large stocks of highly educated human resources display superior performance than the economies of countries that have accumulated lower stocks of

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well-educated human resources (Hanushek & Woessmann, 2008; Patrinos & Psacharopoulos, 2011). Higher education promotes social mobility by creating opportunities for marginalized economic groups and disadvantaged social communities to raise their economic and social status. A socially sensitive higher education system can enhance social cohesion among different cultural, ethnic and religious groups by facilitating a positive climate for a multi-cultural, multi-ethnic and multi-religious social and cultural system. Better educated individuals make more intelligent and informed democratic political choices and decisions (OECD, 2012). Highly educated individuals also display more enlightened civic behavior.

Economic and Social Benefits of Higher Education in Sri Lanka

Investment in human capital has a positive and significant impact on earnings, at all levels of education, for both men and women in Sri Lanka. Table I presents an econometric analysis of the determinants of earnings. All the education coefficients shown in Table I, from primary education to postgraduate education, are positively signed and statistically significant.

The earnings functions for both men and women display a monotonically rising pattern in relation to education: as the education levels of individuals improve their earnings increase. The positive relationship between education earnings is consistent with economic theories of education such as the theory of human capital and theories of screening and signaling in markets with asymmetric information (Hanushek & Welch, 2006) . The impact of education on earnings is stronger for female workers than for male workers. This can be attributed to self - selection effects, as there is greater probability of more able women entering the labor market, while among males nearly all working aged men participate in the labor market. These findings are consistent with the notion that investment in human capital is an important determinant of the economic prospects and performance of individuals.

Table 1: Education and Earnings by Gender 2008 Least Squares Estimates of Augmented Mincerian Earnings Functions

Variable	Male		Female	
	Coefficient	T Statistic	Coefficient	T Statistic
Constant	8.443	225.640	8.050	173.240
Primary Incomplete	0.013	0.370	0.021	0.520
Primary Education	0.146	4.340	0.077	1.930
Basic Education	0.359	10.490	0.370	8.670
GCE O/L	0.624	17.600	0.781	17.450
GCE A/L	0.920	25.160	1.132	26.070
Graduate	1.347	29.050	1.551	29.990
Postgraduate	1.439	21.230	1.720	23.790
Experience	0.034	24.020	0.029	14.530
Experience Squared	-0.001	-22.380	-0.001	-13.760
Urban Sector	0.127	8.090	0.199	8.350
Estate Sector	-0.310	-15.500	0.036	1.400
Adjusted R Squared	0.319		0.453	
Sample Size	10,940		5,339	

Note: The Base Category for Education Levels is no Education. The Base Category for Sectors is the Rural Sector

Source: World Bank 2011

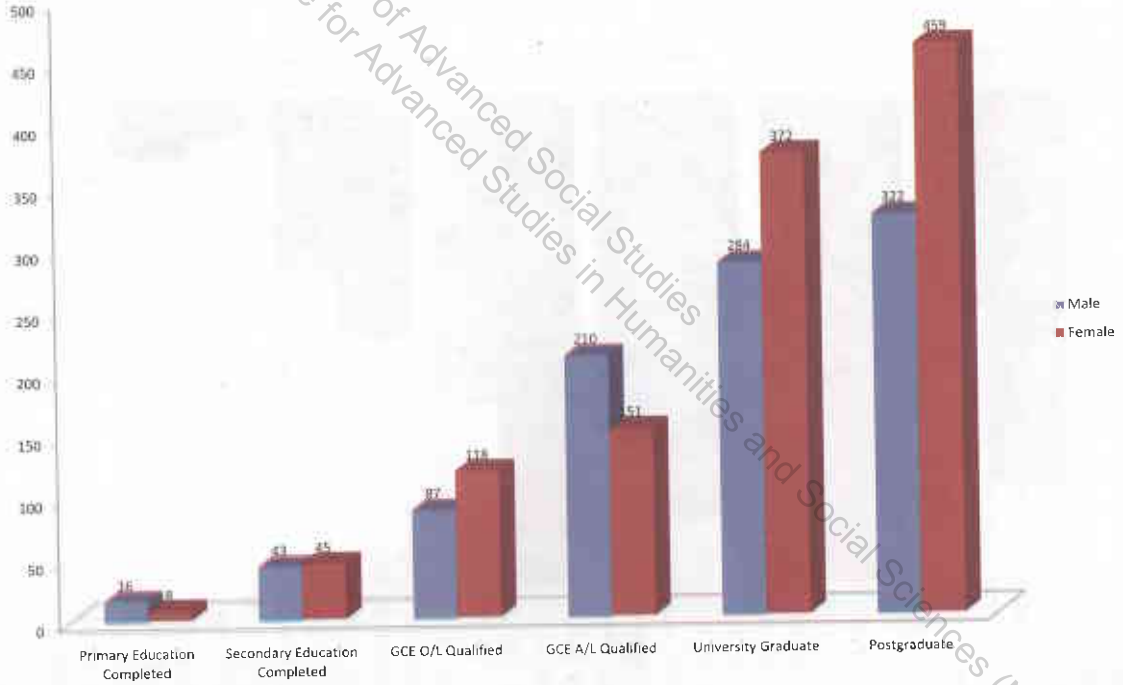
The incremental impact of education on earnings is shown in Figure 1. A male worker with primary education earns about 16 percent more per month than a man with no schooling, and a female worker with primary education earns around 8 percent per month more than a woman with no schooling. Among men and women who have completed basic education, a man earns 43 percent more than a male worker with no education, and a woman earns 45 percent more than a female worker who is not educated. Among men and women who have completed the General Certificate of Education Ordinary Level (GCE O/L) examination, male workers earn 87 percent more than men with no education, and female workers earn 118 percent more than women with no education. Among men and women who have completed the General Certificate of Education Advanced

Level (GCE A/L), male workers earn 151 percent more than uneducated men, and female workers earn 210 percent more than uneducated women. The earnings of both men and women rise further at each stage of education. The highest earnings benefits are recorded among men and women who have completed higher education. Male university graduates earn 284 percent more than uneducated men, while female university graduates earn 372 percent more than uneducated women. Postgraduate educated men earn 322 percent more than uneducated men, while postgraduate educated women earn 459 percent more than uneducated women. Overall, these findings clearly support the notion that men and women benefit from their investments in education, and especially from higher education.

The rates of return to education are shown in Figure 2. The returns to education are positive, and favorable at the secondary and higher education levels. Among primary educated workers the returns to education are positive but low, at 2 percent for men and 1 percent for women, respectively. Men and women who have completed basic education receive somewhat better returns: 7 percent for male workers and 10 percent for female workers. However, among workers who are secondary educated or higher, returns to education are substantially greater. GCE O/L qualified male workers earn returns of 13 percent, while female workers enjoy even higher returns at 21 percent. Among GCE A/L qualified individuals, men enjoy a return of 15 percent, while women receive a return of 18 percent. Among university graduates both men and women enjoy returns of 21 percent. At postgraduate level, the rates of return to education for men are 9 percent and for women 17 percent, respectively.

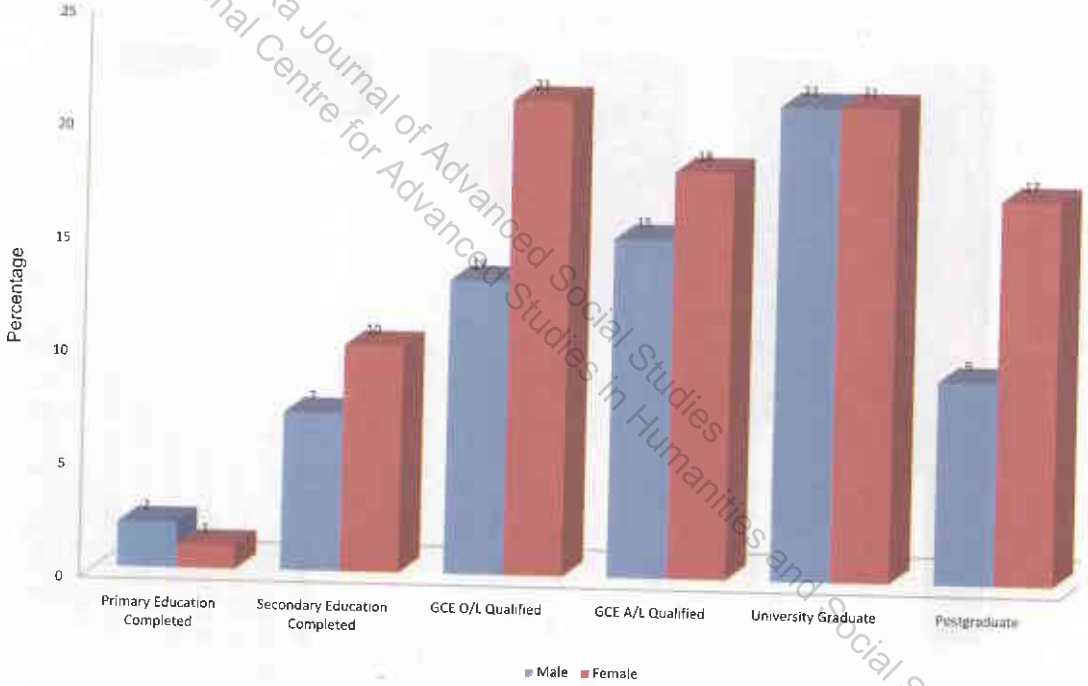
The observed pattern of rates of return to education is consistent with the fact that the supply of primary and basic educated human capital is relatively high in Sri Lanka, so that returns to education at these levels are small. At the levels of secondary education and higher education, however, the supply of educated labor is lower, and returns to education are greater. In addition, workers could be using their educational certificates at secondary education and higher education levels to signal their quality, while employers could be using these certificates to screen potential employees for capability.

Figure 1: Impact of Education on Earnings Male and Female Workers 2008



Source: World Bank 2011

Figure 2: Private Rates of Return to Education Male and Female Workers 2008

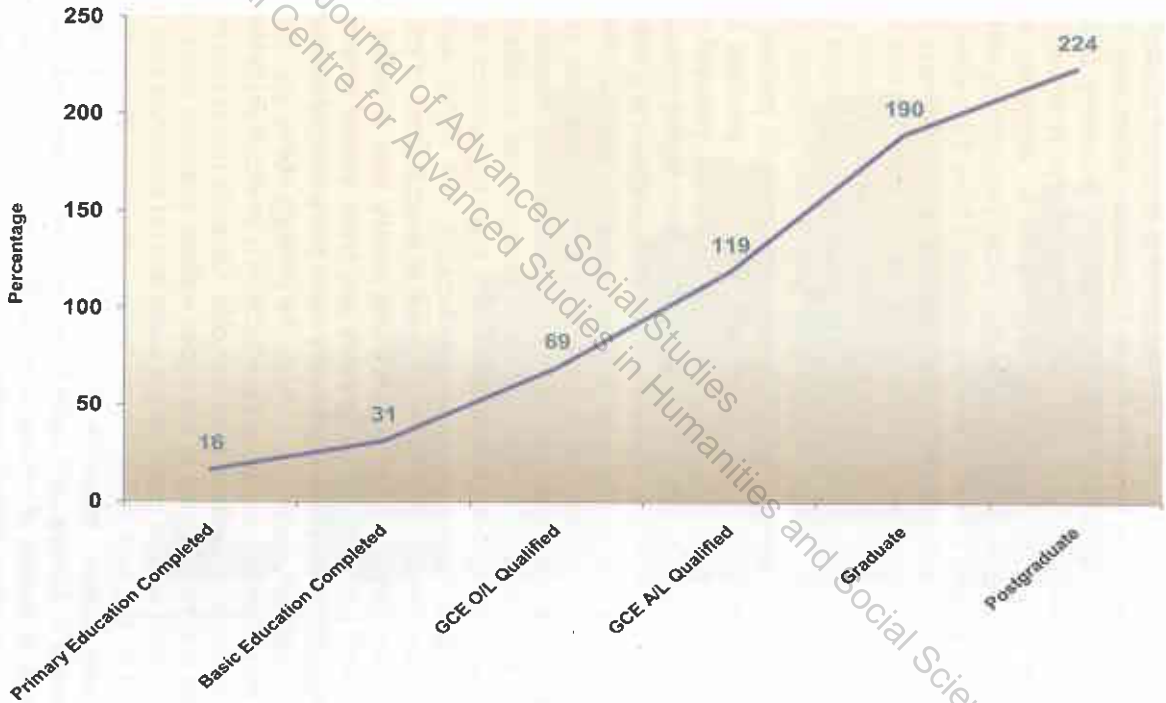


Source: World Bank 2011

Education and Economic Welfare

Education has a powerful impact on the economic welfare of households in Sri Lanka. The relationship between education and economic welfare is shown in Figure 3. Education attainment is clearly and positively associated with the economic prosperity of families and individuals. As the education levels of the principal income earners of households increase the impact on economic welfare, measured as consumption *per capita*, rises. Households where the principal income earner is primary educated have 16 percent higher consumption levels than households where the principal income earner is uneducated. Households in which the principal income earner has completed basic education enjoy 31 percent higher consumption levels than households in which the principal income earner is uneducated. Households where the principal income earner has completed GCE O/L education have 69 percent higher consumption levels than households where the principal income earner is not educated. Households in which the principal income earner is GCE A/L educated enjoy 119 percent higher consumption levels than households where the main income earner is uneducated. Households in which the principal income earner is a graduate enjoy 190 percent higher consumption levels than households in which the principal income earner is not educated. Finally, households in which the principal income earner is postgraduate qualified enjoy 224 percent higher consumption levels than households in which the principal income earner is uneducated. The higher welfare of more educated households is the result of several types of education outcomes. Better educated individuals usually work in better quality jobs, with higher earnings streams and more secure employment. Educated individuals also generally make more rational consumption and investment decisions. Overall, the findings above are consistent with the notion that investment in education is an important determinant of the economic welfare of households. Quantile regression analysis shows that households in the upper welfare quantiles enjoy greater incremental welfare gains, for the same level of education from middle school to the end of senior secondary education, than individuals in lower welfare quantiles (Himaz & Aturupane, 2011). Several countries in Europe and Latin America have similar findings in the context of studies of returns to education, with individuals at higher income quantiles benefiting more from investment in human capital than individuals in the lower income quantiles (World Bank, 2008). There are a variety of reasons for this type of finding. Individuals from

Figure 3: Economic Welfare by Education Level of the Principal Income Earner of a Household



Source: Himaz and Aturupane 2011

the upper welfare quantiles are likely to have attended better quality schools, so that they embody higher levels of cognitive and soft skills. They also often have greater capability and are more motivated, so that they are better able to utilize their human capital in the labor market.

The impact of education on economic welfare has also been increasing over time in Sri Lanka (Table 2). Between 1990/91 and 2006/7 the incremental effect of education on economic welfare has increased for all categories of education except primary completed. At grades 1-4 the additional effect of education has increased from 2.9 percent in 1990 to 3.6 percent in 2006/7. In grades 5-7 the incremental effect of education has fallen slightly from 1.7 percent in 1990 to 1.6 percent in 2006/7. At grades 8-10 the incremental effect of education has risen from 3.3 percent in 1990 to 4.0 percent in 2006/7. At the level of GCE O/L completed the incremental effect of education has increased from 11.5 percent in 1990 to 12.8 percent in 2006/7. At the level of GCE A/L completed the incremental effect of education has improved from 10.5 percent in 1990 to 13.0 percent in 2006/7. Among university graduates the incremental effect of education has risen from 10.8 percent in 1990 to 14.0 percent in 2006/7. This suggests that the importance of education for economic welfare has been increasing in importance over time, especially at the levels of GCE O/L, GCE A/L and university education. The pattern, with higher levels of education becoming more important than lower levels of education, supports the notion that economic activities are becoming more knowledge intensive over time, so that the return to knowledge-based skills is rising.

Table 2: Time Trend of the Incremental Impact of Education on Economic Welfare 1990 - 2007

Years of Education	1990 / 1991 (%)	2006 / 2007 (%)
Grades 1 - 4	2.9	3.6
Grades 5 - 7	1.7	1.6
Grades 8 - 10	3.3	4.0
Completed GCE O/L	11.5	12.8
Completed GCE A/L	10.5	13.0
Graduate	10.8	14.0

Source: Himaz and Aturupane 2011

Public Investment in Education in International Perspective

The considerable economic and social benefits of education suggest that education could be a priority area for public investment and development in Sri Lanka. However, public expenditures on education in the country are modest in relation to middle income countries and other comparable developing nations. Education expenditure as a percentage of GDP is 1.9 percent and as a proportion of the government budget is 7.3 percent (Table 3). This is the lowest share of public investment in education among a group of countries that are at a comparable level of development, or are exemplar countries, to Sri Lanka (Figure 4 & Figure 5). Public investment in education in Sri Lanka is below the level of East Asian countries such as South Korea, Singapore, Malaysia and Thailand; Latin American nations such as Argentina, Brazil, Bolivia, Colombia and Costa Rica; and of other South Asian countries such as India, Pakistan, Nepal and Bangladesh. It is also well below the level of investment among middle income countries as a whole. In fact, advanced middle-income countries normally invest about 4.6 percent of national income in education, which is more than double the share of national income invested by Sri Lanka. The small share of national income and government expenditure invested in education also leads to low recurrent expenditures per student. Sri Lanka spends, on a per student basis, considerably less than the comparator and exemplar countries: and particularly middle-income countries such as South Korea, Malaysia, Thailand, Argentina, Brazil, Russia, Colombia and Costa Rica. The low investment in education overall also results in low investment in higher education.

There are several reasons for the low level of public education investment in Sri Lanka: (a) relatively low teacher salaries, with Sri Lankan teachers and academic staff receiving salaries considerably less, as a proportion of national income per capita, than teachers and academics in other Asian countries such as South Korea, Malaysia, Thailand, India, Pakistan and Bangladesh, and also less than the comparator countries in Latin America; (b) the expansion of the capital stock of schools and higher education institutions during the 1950s-1970s, which reduced the need for major investment in the construction of new schools and universities; and (c) the competition for resources from a wide range of investments in public infrastructure, and social services including universal free health care and large-scale access to safety nets.

Table 3: Education Expenditure Ratios for Sri Lanka and Selected other Countries

Country	Public Education Spending as a Percentage of GDP	Public Education Spending as a Percentage of Government Spending	Education Recurrent Expenditure per Student as a Share of GDP per Capita
Sri Lanka	1.9	7.3	9.1
Malaysia	4.7	25.2	15.0
Thailand	4.0	20.9	18.3
South Korea	4.2	15.3	17.8
Singapore	3.3	10.3	na
Argentina	4.9	13.5	16.5
Brazil	5.1	16.1	18.1
Bolivia	6.3	18.1	na
Costa Rica	5.0	22.8	18.8
Colombia	4.8	14.9	16.6
Russia	3.9	12.9	18.0
India	3.2	10.7	12.3
Bangladesh	2.4	14.0	13.6
Pakistan	2.9	11.2	11.4
Nepal	3.8	14.9	na
South Asia	2.9	14.9	na
Low and Middle Income	4.0	na	na
Upper Middle Income	4.6	14.0	na

Note: Data for Sri Lanka are for 2010. Data for other Countries and Regions are for the Closest Available Year.

Sources: Central Bank of Sri Lanka Annual Report 2010, Education Statistics and World Development Indicators - World Bank

Low investment can have several negative consequences for a higher education system over the long term (Millot, 2012). Under-investment in the capital education budget means that the ability of the country to develop a stock of modern education assets and spaces, such as lecture theatres adapted to the use of technology, IT laboratories, libraries, science laboratories, science equipment, IT equipment, and teaching-learning material, is severely constrained. This, in turn, can have a negative effect on both the quality of teaching and learning and on research. Under-investment in the recurrent budget means that low academic salaries make it difficult for universities to attract bright young postgraduate qualified individuals, and also leads to brain drain of existing well-qualified academics. In addition, it weakens the ability of higher education institutions to operate and maintain their plant and equipment, and upgrade their technology.

Sri Lanka needs to expand the flow of resources into the education sector, including higher education, to transform the education system into the foundation of a knowledge hub. Attracting foreign student to make Sri Lankan universities a hub would also require a variety of policy measures, some within higher education and some in other areas, including immigration policies for overseas students (Fielden et al, 2011). Middle-income countries with economies more advanced than Sri Lanka in East Asia, Latin America, and Eastern Europe, invest considerably more in education. In order to invest adequate resources in modern equipment and technology and enable Sri Lankan students to acquire the skills and competencies needed for modern knowledge-intensive economic processes, the country will need to increase investment in both higher education and school education. There are multiple options to increase the resources available for the higher education sector. These options, some of which would require radical reforms, are outlined below.

Alternative Models of Higher Education Financing

There are a number of models of higher education financing. These alternative models offer Sri Lankan policy makers opportunities to increase investment in higher education (World Bank, 2009; Aturupane, 2012).

Higher Education Financing Model One

Higher education is financed through tax revenue, and pro-

vides degree programs in public higher education institutions free of tuition fees to students. This is a model found in many countries of continental Western Europe, and was also followed by the United Kingdom through much of the twentieth century, This is also the model that was introduced for undergraduate education in the university system in Sri Lanka in the 1940s, and is still followed for undergraduate degree programs in conventional universities. In certain variations of this model universities levy earmarked fees, for example for registration and examination, and / or for board and lodging, but provide free tuition. In addition to Sri Lanka, there are also developing countries in Africa, such as Egypt, which follow this model.

Higher Education Financing Model Two

Another model is the sharing of higher education costs between the government and students. The extent of cost sharing and subsidy vary from country to country, and sometimes even within countries. This is the model followed in the state higher education systems in the USA. A student attending a state university in his / her home state receives a subsidy, with the degree of subsidy varying from state to state. Two further countries where the state and students share the costs of education in public universities, through a subsidy from the government to reduce the cost of tuition, are the UK and New Zealand. The Open University of Sri Lanka follows this model, with 30 percent of recurrent expenditures raised through fees.

Higher Education Financing Model Three

A third model is a dual track system. In this system one set of seats is available in public universities free of tuition fees, while another set of seats is available for students who have the minimum qualifications for entry, but fail to receive sufficient marks to gain a free place, and can pay a fee. This model is followed in several former Communist countries, such as China, the Czech Republic, Hungary, Poland and Russia. It is a radical reform in comparison to the model which existed in these countries during their communist period, when all university places were tuition free for students.

Higher Education Financing Model Four

A fourth model is a combination of free and fee-levying institutions and programs at the system level. In this model some higher

education institutions and programs are available free of tuition fees, while other higher education institutions and programs levy fees. The latter group typically contains more market-oriented institutions and programs whose graduates have superior employment prospects. Countries such as Mexico, Nigeria and China have this model. Sri Lanka, too, follows this model for postgraduate education. Some postgraduate and research degrees are offered free, while other postgraduate and research degrees levy fees.

Higher Education Financing Model Five

A fifth model is the delivery of subsidized private higher education services. In this model the government provides students vouchers, stipends or scholarships that can be used for private higher education institutions. Alternatively, the government provides direct financial support for private higher education institutions, either as capital grants or as grants for operational and maintenance expenditure, up to a designated number of students. Several states in the USA follow this model, which is also known as demand-side financing for example, the State of Colorado adopts a performance-based allocation mechanism, as well as countries as varied and diverse as Chile, Poland and Sweden.

Higher Education Financing Model Six

A sixth model is the introduction of deferred tuition fees, where students meet the cost of their undergraduate education after they have completed their studies and entered employment. Many countries, including Australia, New Zealand, England, Scotland and Wales, use elements of this model of higher education financing. The model can be hard to enforce, in the context of developing countries which do not have a culture of repayment, as the graduate may be difficult to track, especially if he or she is working overseas.

Higher Education Financing Model Seven

A seventh model is the levying of "up front" tuition fees at universities. A variety of countries, such as Austria, Britain, China, Netherlands, New Zealand, South Africa, the USA and Vietnam employ this model. This model provides universities considerable autonomy, including the ability to set faculty salaries, and appoint staff

at the discretion of the university. It also provides considerable flexibility in terms of opening new courses and degree programs. It is, of course, the main model used by private universities and higher education institutions, and provides the private sector the flexibility to react quickly to market conditions. However, in the context of public universities that offered tuition free education, the introduction of fees can be highly controversial. It would also have the disadvantage of making higher education less accessible to poor students.

Clearly, there are a large variety of models which provide options for Sri Lanka in the future. Further, there are a variety of models employed even within one country. Sri Lanka obviously needs to develop the best model for itself, depending on the country's policy goals, the overall resource envelope available for the public higher education sector, and the economic and political context of higher education reforms and development. The principal reason for the higher education models that are not fully tax financed, but where some type of cost sharing exists, is the fact that the tax financed model is very costly on a per student basis. As the demand for higher education rises, and the cost of improving quality and relevance increases, even developed countries find it difficult to meet the needs of the higher education sector solely through tax financing, and introduce one or more of the cost sharing models discussed above. This has been seen in recent times in developed countries, including Canada and the UK, as well as former Communist countries such as China and Russia. If Sri Lankan policy makers in the future consider a cost sharing option in the future, however, it is extremely important that poor but intelligent students continue to be provided financial assistance to enable them to complete their higher education.

Policy Choices for the Promotion of Private - Public Partnerships in Higher Education

The Government of Sri Lanka has stated explicitly that it will seek to open the higher education sector to private sector investment and delivery of services. Countries have several policy options to promote private-public partnerships (PPPs) in the higher education sector (Aturupane et al, 2011; World Bank, 2009; 2011a). The main policy alternatives, and their advantages and disadvantages, are discussed below:

Policy Option One: The Provision of Financial Grants Towards the Capital Costs of Constructing University Buildings

This policy option would provide a substantial incentive for private higher education institutions to set up, as the capital costs of construction are high. Non-profit private higher education institutions could particularly benefit, as such institutions often have lower financial resources to drawn upon than profit making higher education institutions. The land on which the buildings are constructed would need to be made available to the private higher education institutions on a sufficiently long lease, or on a freehold basis, for the full benefits of this option to be realized.

Policy Option Two: The Payment of Subsidies for Rented Premises

Such subsidies can play an important role in encouraging private higher education institutions in areas where the available land is scarce and expensive, as in the greater Colombo area. This option would have the benefit of decreasing the costs of operating private higher education institutions, and act as an incentive for such institutions to be established or expanded. It would also facilitate non-profit private higher education institutions, as these typically do not offer courses with the same revenue raising opportunities as profit-making private higher education institutions.

Policy Option Three: Payment of a Subsidy for Students Enrolled in Private HEIs

The subsidy could be in the nature of scholarships, student loans or vouchers, or a combination of all these mechanisms. This policy initiative would have the advantage of either reducing the cost of tuition fees and living expenses for students through scholarships, vouchers or of deferring these costs through loans. This initiative would also increase competition among private higher education institutions if the students who receive the subsidy can take the financial benefit to whichever higher education institutions they prefer or chose. The competition could be expanded to cover public sector higher education institutions, too, if students were entitled to use this financial benefit in both private and public higher education institutions, and enjoyed the freedom to select between the two sets of institutions.

Setting up successful student loan systems in countries which do not have a history of such systems can be difficult, though, as obtaining repayment of loans can be a major challenge. Two important conditions for successful student loan schemes are that the government should be in a position to track the incomes of graduates accurately, and have an effective and enforceable loan collection mechanism. Where these two conditions are not met, repayment rates tend to be very poor. It is unclear whether a country such as Sri Lanka will be able to design and implement an effective mechanism for the collection of student loans, so this is a major limitation for the country.

Scholarship schemes can have the disadvantage of being inequitable if they are awarded on the basis of performance at public examinations, rather than the economic need of students. Voucher systems are promising, but may require a drastic change in the culture of higher education institutions, particularly public sector institutions. This can make such schemes very difficult to implement fully, or except over a long period of time. With voucher schemes it is also very important that weaker higher education institutions receive considerable government support in the form of capacity building.

Policy Option Four: The Gvernment Could Invite Private Higher Education Institutions to Establish Higher Education Campuses in Combination with the Provision of other Services

For instance, local and foreign partnerships in information and communications technology, linked with the establishment of firms providing information technology and communications services or industries, could be an option. Tourism, leisure and hospitality services and related higher education institutions could also be an option. Policy measures along these lines could both expand the higher education sector, and link higher education with economically attractive investments. There would be a joint benefit, directly to the economy as well as to the higher education sector. However, there are likely to be a limited number of such opportunities over the medium-term. Where such opportunities do exist, however, they can and should be explored.

Policy Option Five: Research Funding Could be Made Available to Both Public and Private Higher Education Institutions

Academics from private higher education institutions can be allowed to compete for research grants from this fund on the same terms as academics from the public higher education institutions. This would have several advantages. Research funding will stimulate research, which in turn is positively correlated with the quality of teaching, as good researchers are more likely to be up-to-date with their academic knowledge and skills than academics who are not researchers. It would also stimulate some higher education institutions to become centers of excellence. The Sri Lankan higher education system is yet to develop to the stage of producing high quality research programs on a large scale. Hence, this would be more a long-term option.

Combinations of Policy Options

Finally, it should be noted that these policy alternatives are not mutually exclusive. The government could choose to implement two or more, or even several, of these options.

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