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Introduction

Education is one of the most important determinants of economic performance in the modern world. This is true of both countries and individuals. The main characteristic which distinguishes between advanced economies, middle-income economies and low-income countries, is the knowledge content of their production activities and processes. Economic activities and products have become increasingly knowledge and skill-intensive in recent years. In addition, the importance of knowledge and skills is growing at an accelerating pace. Among advanced economies, for instance, often the single most important determinant of economic performance is the education level of their populations (Barro 2013; Hanushek and Welch 2006). Among middle-income and low-income economies, too, education plays a major role in economic development (Patrinos and Psacharopoulos 2011; Hanushek and Woessmann 2008).

Education is at the heart of human capital accumulation and economic growth. Education increases cognitive skills and soft skills of individuals. In addition, education improves the capacity of individuals to be trained for specific occupations and to acquire job-related skills. These effects of education enable individuals to accumulate human capital, improve labor productivity and increase life-cycle earnings. In the aggregate, this process generates economic growth.

Investment in education produces a broad range of social benefits. Well-educated individuals, especially women, are better able to control their fertility and family health, resulting in reduced child, infant and maternal mortality, and higher life expectancy. Education also facilitates social mobility by creating opportunities for poor and disadvantaged groups to raise their economic and social status. A broad range of further externality benefits of education have been identified in the economic literature. These cover aspects of social well-being such as better political decision making, reduced incidence of crime, and higher quality public services. Education also produces inter-generational economic and social benefits: increased education in one generation improves schooling, labor productivity and income in the next. The public goods, informational imperfections and distributive justice aspects of education provide the economic justification for state investment in the education sector.

The Education Sector Context

The Government of Sri Lanka (GOSL) has a long history of public investment in, and provision of, education. There are approximately 11,000 schools, of which 9,900 (91 percent) are government schools. The balance consists of around 100 private schools, 730 *pirivena* (temple) schools, and about 250-300 international schools. Total school enrollment consists of approximately 4.4 million students, of whom around 4.0 million students (91 percent) attend government schools, and the balance attend private, *pirivena* and international schools. The government, private and *pirivena* schools offer the national curriculum and their students sit the

national public examinations. International schools offer foreign curricula and prepare students for overseas examinations. There are also 17 universities, 12 Advanced Technological Institutes (ATIs) and 16 postgraduate and higher education institutes in the public sector. These enroll approximately 400,000 students, of whom 86,000 students are in universities and the ATIs, while the rest are enrolled in distance mode and external degree programs¹. The delivery of early childhood education is mainly outside the framework of public financing, which is unusual by modern international standards.

The Government Policy Framework: the Development of the Education Sector under the Mahinda Chintana Vision

The national development policy of the country, Mahinda Chintana Vision for 2020, aims to transform the country through the creation of five strategic hubs. These constitute a knowledge hub, a shipping hub, an aviation hub, a commercial hub and an energy hub (Mahinda Chintana 2010). The knowledge hub is at the heart of the five hub strategy, as human capital is of vital importance for the development of the other four hubs.

The Mahinda Chintana framework has an ambitious and multi-pronged strategy to develop the education sector. The key elements of this strategy for general education are: (a) increasing equitable access to primary and secondary education; (b) improving the quality of primary and secondary education; (c) diversification of the secondary education curriculum; (d) continuous professional development of teachers; (e) strengthening special education programs and ensuring basic education for children with special learning needs; (f) strengthening school health and nutrition programs; and (g) strengthening service delivery in education. In higher education, the strategy focuses on: (i) expanding access to higher education; (ii) promoting research and innovation; (iii) increasing the stock of well-qualified academics and researchers; (iv) developing science and technology; (v) establishing good quality assurance and accreditation systems for public and private higher education institutions; (vi) establishing university townships to generate development impact around the geographical locations of the universities; and (vii) increasing the skills and expertise of graduates. The general education and higher education development strategies are complementary and mutually supportive. These ambitious and wide-ranging strategies need to be adequately funded to meet the challenge of producing the human capital required for the country's national development.

Equity of Access and Participation in Education

The network of government schools has been established to provide universal access to primary and secondary education. The policy framework to promote universal access to schooling has also been supported by a set of demand side policies, including tuition free

¹ However, it should be noted that many of the students enrolled in distance and external degree programs may not actually be following their degree programs, with only a small number being active students.

education in government schools, a set of free textbooks and school uniforms per child, subsidized bus and train fares, and in poor communities free school meals (see World Bank 2011). This policy objective has been achieved at primary education level, and to a great extent in junior secondary education. Primary education is universal with gender parity and regional and income equality. The net primary enrollment rate (NER) for girls and for boys 98 percent (see Table 1). There is also parity across sectors: the primary education NER equals 99 percent for urban students and 98 percent for rural students. Junior secondary education enrollment is also comparatively high, with the NER at 84 percent. There is also gender parity, with the male NER at 84 percent and the female NER at 83 percent. Across sectors the NER for urban children is 82 percent and for rural children 84 percent. At senior secondary education level, the NER is 67 percent, with the NER for boys at 64 percent and girls 70 percent. This is still a relatively high participation rate in senior secondary education for middle-income countries. The better performance of girls at secondary education level is commonly found in middle-income and developed countries. The NER for youth in the urban sector is 73 percent, and the NER for youth in the rural sector is 66 percent. This urban-rural difference is usually found in countries, with youth from rural areas who are typically from poorer households less likely to continue in education than urban youth.

Table 1: Net Enrollment Rates in Primary, Secondary and Higher Education, by Gender and Sector (%), 2009-2010

	All	Boys	Girls	Urban	Rural
Primary Education	98	98	98	99	98
Junior Secondary Education	84	84	83	82	84
Senior Secondary Education	67	64	70	73	66
Higher Education	15	13	16	20	14

Source: Bank staff calculations based on HIES 2009/10.

Sri Lankan policy makers devoted less attention to the expansion of higher education until relatively recently. Private sector participation in university education, in particular, was restricted until a few years ago. In addition, the expansion of normal degree programs in public universities was moderate, as the cost of provision of such programs was considered high. As a result, tertiary education enrollment is 15 percent, which is modest by international standards. This is below the average NER for lower-middle income countries, 19 percent, and the mean NER for middle-income countries, 25 percent. Girls outperform boys in higher education enrolment, as in the case of senior secondary education. There are also significant urban-rural disparities, with 20 percent of urban young people enrolled in higher education in comparison to a fourteen percent enrollment rate among young people from the rural sector.

Equity of participation in education across economic groups is high at primary and junior secondary education level. The primary education NER ranges between 97-99 percent across the various economic quintiles (see Table 2). At junior secondary education, the NER is again

very evenly spread, varying between 82 percent and 85 percent among the different economic groups. This is partly a reflection of the high overall rate of primary and junior secondary enrollment in the country.

Table 2: Net Enrollment Rates in Primary, Secondary and Higher Education, by Economic Quintile (%), 2009-2010

Economic Quintile	Primary Education	Junior Secondary Education	Senior Secondary Education	Higher Education
Lowest quintile	97	82	55	4
Second quintile	99	84	62	8
Middle quintile	98	84	70	11
Fourth quintile	98	84	75	12
Highest quintile	99	85	84	24
All quintiles	98	84	67	15

Source: Bank staff calculations based on HIES 2009/10.

Participation at senior secondary and higher education is less equitable among economic groups. The senior secondary NER ranges from 55 percent among the lowest economic quintile to 84 percent among the richest quintile. Higher education enrollment demonstrates a similar pattern of variation among the different economic groups. The higher education NER among the poorest quintile is 4 percent, whereas the higher education NER among the richest quintile is 24 percent. These patterns of relatively large variations in participation across economic quintiles in senior secondary and higher education is fairly typical of countries where overall enrolment rates at these education levels are not very high. Students from wealthier homes are more likely to stay on in school at senior secondary level, and proceed to higher education, than students from less wealthy households.

Internal Efficiency of the Education System

The progression through the school system in Sri Lanka is efficient (see Table 3 and Table 4). Grade cycle transition rates are higher, and repetition and drop-out rates are low. For instance, among boys, from grade 10 to grade 11 the transition rate is 93 percent. Among girls, from grade 10 to grade 11, the transition rate is 95 percent. Grade cycle repetition rates are very low, hardly exceeding 1 percent. Drop-out rates are also low, commencing from zero and rising to 5-6 percent in grades 9-10 and 10-11. This pattern of high internal efficiency is also seen in the survival rates. The survival rate through grades 1-11 is 84 percent, which is high for a developing country and approaches OECD levels. There is gender variation in survival rates, with 87 percent of girls surviving through from grade 1 to grade 11, while only 81 percent of boys survive this cycle. This is a normal pattern of gender variation seen in many developed and upper-middle income countries. One important reason for this difference is that teen-aged boys can take up various manual labor jobs, and students from poorer families select this option.

Overall, Sri Lanka has high internal efficiency. This is to be expected, as the country carries high levels of participation at a relatively low cost.

Table 3: Transition, Repetition and Dropout Rates, 2012

Grades	Boys			Girls			Total		
	Transi tion	Repetiti on	Dropo uts	Transiti on	Repetiti on	Dropo uts	Transiti on	Repetiti on	Dropo uts
G1-2	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
G2-3	0.99	0.01	0.00	0.99	0.01	0.00	0.99	0.01	0.00
G3-4	0.99	0.01	0.00	0.99	0.01	0.00	0.99	0.01	0.00
G4-5	0.98	0.01	0.01	0.99	0.01	0.01	0.98	0.01	0.01
G5-6	0.98	0.01	0.00	1.00	0.01	0.00	0.99	0.01	0.00
G6-7	0.97	0.02	0.02	0.98	0.01	0.01	0.97	0.01	0.01
G7-8	0.96	0.01	0.02	0.98	0.01	0.01	0.97	0.01	0.02
G8-9	0.96	0.01	0.03	0.97	0.01	0.02	0.96	0.01	0.03
G9-10	0.94	0.01	0.05	0.96	0.01	0.03	0.95	0.01	0.04
G10-11	0.93	0.01	0.06	0.95	0.01	0.04	0.94	0.01	0.05

Source: Ministry of Education, School Census, various years.

Table 4: Survival rates for Cohorts

Cycle	Boys	Girls	Total
G1-2	100	100	100
G1-3	100	100	100
G1-4	99	100	99
G1-5	98	98	98
G1-6	97	99	98
G1-7	95	98	96
G1-8	93	96	94
G1-9	91	95	93
G1-10	86	92	89
G1-11	81	87	84

Source: Ministry of Education, School Census, various years.

Time Trend of Access and Participation in Education

Participation in education has been increasing over time for both boys and girls. Primary education net enrolment increased from 89 percent in 2002 to 98 percent in 2005/6 and remained steady to 2009/10, with very similar enrolment rates for both boys and girls (see Table 5). In secondary education, the overall net enrolment rate rose from 70 percent in 2002 to about 83 percent in 2009/10, with the male enrolment rate increasing from around 70 percent to 81 percent and the female enrolment rate rising from around 71 percent to 84 percent during this period. At

the level of higher education, the net enrolment rate increased from 9 percent in 2002 to about 15 percent in 2009/10. Among male students the enrolment rate rose from 8 percent to 13 percent, and among female students from 10 percent to 16 percent, during the period 2002-2009/10.

Table 5: Time Trend of Net Enrollment Rates by Gender, 2002-2009/10

	Primary Education			Secondary Education			Higher Education		
	2002	2005/6	2009/10	2002	2005/6	2009/10	2002	2005/6	2009/10
All	89.4	98.3	98.3	70.1	78.4	82.5	9.2	11.3	14.6
Male	89.4	98.0	98.3	69.5	78.7	81.1	8.0	11.7	12.6
Female	89.4	98.5	98.3	70.7	78.1	83.8	10.2	11.1	16.2

Source: Bank staff calculations based on 2002, 2005/6 and HIES 2009/10.

The link between education participation and financing is not direct and proportional, but there is an association, which also operates with a lagged effect. The increase in public investment in general education during the period 2003-2007 and in higher education 2003-2009 would have contributed to the increase in participation in education at all levels during the period 2002-2010. This contribution would have operated through investments in promoting access and participation in primary and secondary education, and in the expansion of the higher education system, during this period.

Education Quality: Learning and Soft Skills

Improving education quality is a world-wide challenge which also applies to Sri Lanka. Learning outcomes in general education need to increase, especially in subjects such as English language, mathematics, science, ICT and technology, subjects which are important for future economic development. Private sector organizations, particularly those involved in international trade and finance, stress the importance of fluency in international languages, particularly English language skills. Scientific and industrial occupations require individuals with good mathematics and science knowledge and skills. While learning outcomes have been rising over time in Sri Lanka, there is still considerable scope for improvement. In the most recent National Assessment of Learning Outcomes, conducted among Grade 8 students in 2012 by the National Education Research and Evaluation Center (NEREC) of the Faculty of Education, University of Colombo, the mean score for mathematics was 51 percent, the average score for science was 42 percent, and the mean score for English was 40 percent (see Table 6). These scores suggest that there is considerable scope for improvement, particularly in science and English.

Table 6: Learning Outcomes in Grade 8 by Province, 2012

Province	Mathematics		Science		English	
	Mean	Standard Deviation	Mean	Standard Deviation	Mean	Standard Deviation
Western	54.77	21.12	44.01	21.11	45.25	23.06
Central	51.20	20.62	41.39	21.54	44.42	25.32
Southern	54.74	21.43	47.40	21.79	42.48	23.26
North Western	52.80	21.60	42.37	21.31	41.37	23.94
Northern	50.79	21.08	37.82	19.81	36.08	21.78
Eastern	48.48	21.71	38.15	23.21	31.65	18.96
North Central	47.16	18.72	40.75	19.97	32.55	17.48
Uva	46.29	19.65	37.36	20.27	38.41	23.89
Sabaragamuwa	52.62	20.52	42.79	21.21	42.45	25.36
All Island	51.44	20.98	41.95	21.43	40.04	23.30

Source: National Education Evaluation Center (NEREC), University of Colombo.

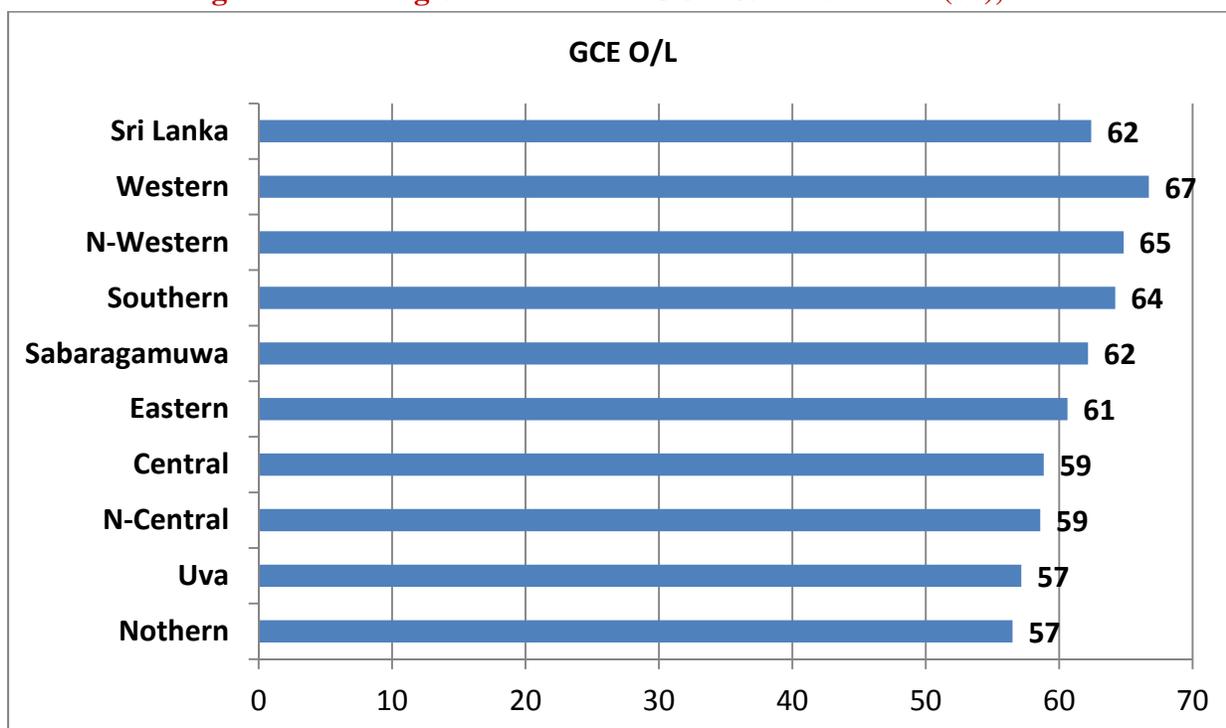
There are also wide regional disparities in learning outcomes. In general, the more developed provinces, such as the Western and Southern Provinces, perform well above the less developed provinces, such as the Eastern, Uva, Northern, and North-Central Provinces. In mathematics students in the Uva and North-Central Provinces, with average achievement scores of 46 percent and 47 percent respectively, perform well below the best performing provinces, the Western and Southern provinces, with average scores of 55 percent. In science, the Uva Province with an average score of 37 percent, and the Northern and Eastern Provinces with average scores 38 percent respectively, are the weakest provinces. The achievement levels in these provinces fall considerably below the achievement levels in the best provinces, which are again the Southern and Western Provinces, with average scores of 47 percent and 44 percent respectively. In English, the best performing provinces are the Western and Central Provinces with average scores of 45 percent and 44 percent respectively. These are well above the average scores in the lowest performing provinces, the Eastern, North-Central and Northern Provinces, with average scores of 32 percent, 33 percent and 36 percent respectively.

Pass rates at the General Certificate of Education Ordinary Level (GCE O/L), another albeit limed proxy for learning quality, also highlights the need for improving learning outcomes, especially in weaker provinces. The first national public examination, GCE O/L, is conducted at the end of grade 11, when children are 15 or 16 years of age. Students successfully completing the GCE O/L can continue onto the next stage of general education, or enter the vocational training and technical education system.² Figure 1 shows that about 62 percent of students who

² Examination data are not as robust and reliable a source of evidence on education quality as national assessments of learning outcomes (Greaney and Kellaghan, 2008). In particular, examination papers vary over years, and changes in performance may partly reflect differences in the level of difficulty of the questions in the test papers of

take GCE O/L exam pass, in that they are qualified to move on to the next level of senior secondary education. In the U.K., a high income country and from whose education and examination systems Sri Lanka's has been derived, around 83 percent of students passed the equivalent of the GCE O/L examination, the GCSE, in 2012. In Singapore, another advanced economy, the pass rate at the equivalent examination is also around 83 percent. There is also a substantial degree of variation in GCE O/L pass rates between provinces. The wealthy Western province is the best performing province, with 67 percent of the students passing the GCE O/L examination. The less developed Uva and Northern provinces have the weakest performances with a 57 percent pass rate. Provinces such as the North-Central and Central Provinces also perform well below the national average with a pass rate of 59 percent.

Figure 1: The Regional Pattern of GCE O/L Pass Rates (%), 2012



Source: National Education Evaluation Center (NEREC), University of Colombo.

There is wide variation in quality between different higher education institutions. At the top end, there are very high quality public universities and degree programs whose graduates are employed world-wide. A large proportion of these graduates, especially in subjects such as engineering, IT and in specialized scientific disciplines chemistry, physics and biology, obtain jobs in countries such as Australia, Canada, the U.K. and other countries in Western Europe, and the U.S.A. Unfortunately, this means that the Sri Lankan labor market loses a substantial proportion of its best and brightest graduates. The students who complete courses in the

those years, rather than changes in education quality. These caveats should be borne in mind in the section below discussing the recent trend in examination performance.

Advanced Technological Institutes (ATIs) of the Sri Lanka Institute for Advanced Technological Education, which offers professional tertiary level training, are also widely employed upon graduation.

At the opposite end of the spectrum there are higher education study programs which are of very low quality. The weakest study programs are the External Degree Program (EDPs), which offer distance mode education in largely arts and humanities subjects of limited labor market relevance (World Bank 2009). These EDPs are also numerically the largest segment of the higher education student population, currently enrolling 250,000 students (62 percent). In addition, there are a number of study programs, especially in the arts and humanities, where quality is moderate. The graduates from the EDPs and these weaker arts and humanities study programs typically search for jobs in the public sector. The government has been responding by periodically absorbing these graduates through make-work programs into the public services. The government is also trying to address the problem of these weaker studying programs through a menu of strategies, including seeking to raise the English language, IT and soft skills of university graduates, as these are important for employment; and providing better academic support for EDPs.

The importance of “soft skills” or “emotional quotient skills” for labor market performance are being increasingly emphasized the world over. Soft skills can have a strong impact on earnings (Heckman *et al.* 2006; Urzua 2008), and employment and occupation status (Borghans *et al.* 2008; Waddell 2006). A noteworthy finding of this literature is that soft skills can be even more important than cognitive ability in determining some labor market outcomes (Glewwe *et al.* 2011).

In keeping with these global trends, employers in Sri Lanka are also demanding rising levels of soft skills. These include the development of higher cognitive abilities; applicable, transferable skills; and personality development. These skills are seen as a prime necessity for managerial and professional work in the major sectors of the economy such as banking, insurance, textiles and garments, information technology, telecommunications, shipping and maritime services, and tourism and leisure. A recent employer survey showed that a majority of firms, 67 percent, consider soft skills, such as communication, leadership, teamwork, creative thinking, problem solving, time management and ability to work independently skills, along with literacy and job specific technical skills as the most important criteria when deciding whether to retain a worker at the managerial or professional occupation (Dundar *et al.* 2014b). Additionally, when asked to rank the three most important job-related skills to retain a white collar worker, 14 percent of firms mentioned leadership as the most important skill, while among other firms 11 percent mentioned leadership as the second most important skills, followed by team work, communication skills, and problem solving skills (see Table 7). Moreover, some international studies show that soft skills such openness to new experiences, extraversion, emotional stability and agreeableness, are associated with higher earnings (Dundar *et al.* 2014b).

Table 7: Employer Ranking of Skills when Making a Decision about Retaining a White Collar Worker (%)

	Most important	Second most important	Third most important
Ability to read and write in Sinhala or Tamil (literacy)	18.27	3.37	2.72
Ability with calculations and numbers (numeracy)	8.81	14.90	6.09
Ability to read and write in English	15.22	14.90	8.65
Job-specific technical skills	24.04	13.30	10.58
Communication skills	3.85	8.65	8.49
Leadership skills	13.78	11.38	13.30
Team work skills	3.85	10.42	13.14
Creative and critical thinking	0.64	4.33	7.21
Problem solving skills	4.01	8.01	12.82
Ability to work independently	4.01	4.97	8.97
Time management skills	3.53	5.77	8.01

Source: Employer Skills Measurement Survey (2013).

Note: White collar workers defined as those who work in managerial or professional occupations.

Time Trend of Education Quality

Learning outcomes in primary education have been improving over time. Table 8 shows based on national assessments of cognitive skills in Grade 4, that learning outcomes in mathematics, English, and first language (Sinhala and Tamil) have been rising over time. The mean score in mathematics increased from 62 percent in 2003 to 73 percent in 2009. The proportion of students scoring over 50 percent in mathematics increased from 65 percent in 2003 to 79 percent in 2009. The mean score in English increased from 44 percent in 2003 to 56 percent in 2009. The proportion of students scoring more than 50 percent in the English language rose from 31 percent to 56 percent over the same period. The mean score in the first language (Sinhala and Tamil) increased from 63 percent in 2003 to 72 percent in 2009. In the first language, the proportion of students scoring more than 50 percent between 2003 and 2009 improved from 67 percent to 80 percent.³

³ These are very large increases by international standards. The national assessments were undertaken in such a way as make the 2003 and 2009 assessments comparable as far as possible. However, some factors, such as teaching to the test, and dropping the weaker students from sitting the tests, may also have contributed to these unusually large scores.

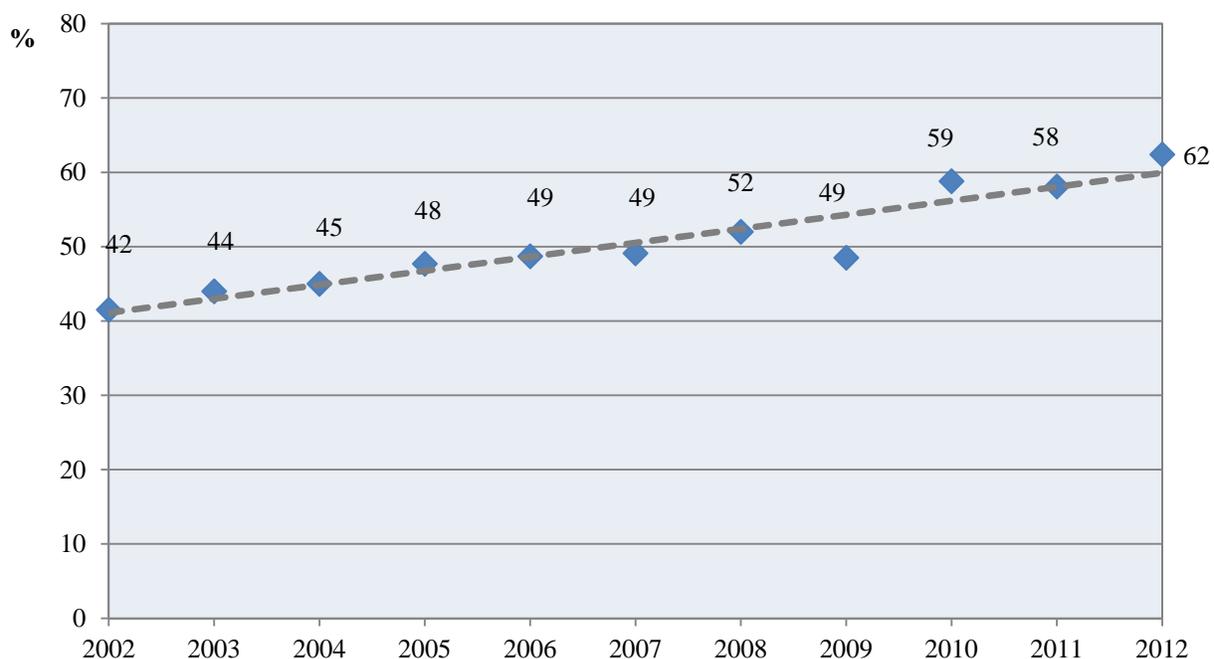
Table 8: Performance of Grade 4 Students in the National Assessments of Learning Outcomes, 2003 -2009

	2003			2009		
	Mean and Standard Error	Proportion of students scoring between 0-50 %	Proportion of students scoring between 51-100 %	Mean and Standard Error	Proportion of students scoring between 0-50 %	Proportion of students scoring between 51-100 %
Mathematics	62.31±0.05	35	65	73.18±0.05	21	79
English	43.67±0.04	69	31	55.92±0.04	44	56
First Language	63.88±0.05	33	67	72.34±0.04	20	80

Source: National Education Research and Evaluation Center (NEREC), University of Colombo.

The proportions of students successfully completing the GCE O/L and GCE A/L examinations have been increasing over time. This is evident in Figure 2 and Figure 3 below. The proportion of students passing the GCE O/L examination rose from 42 percent in 2002 to 52 percent in 2008. Subsequently, the proportion of students passing the GCE O/L examination rose to 59 percent in 2010 and upwards to 62 percent in 2012. The structure of the GCE O/L examination was constant between 2002 and 2008, but changed in 2010. Hence, while the increases in pass rates are valid for the periods 2002-2008 and 2010-2012, the pass rates between the two periods are not comparable.

Figure 2: GCE O/L Pass Rates (%), 2002-2012

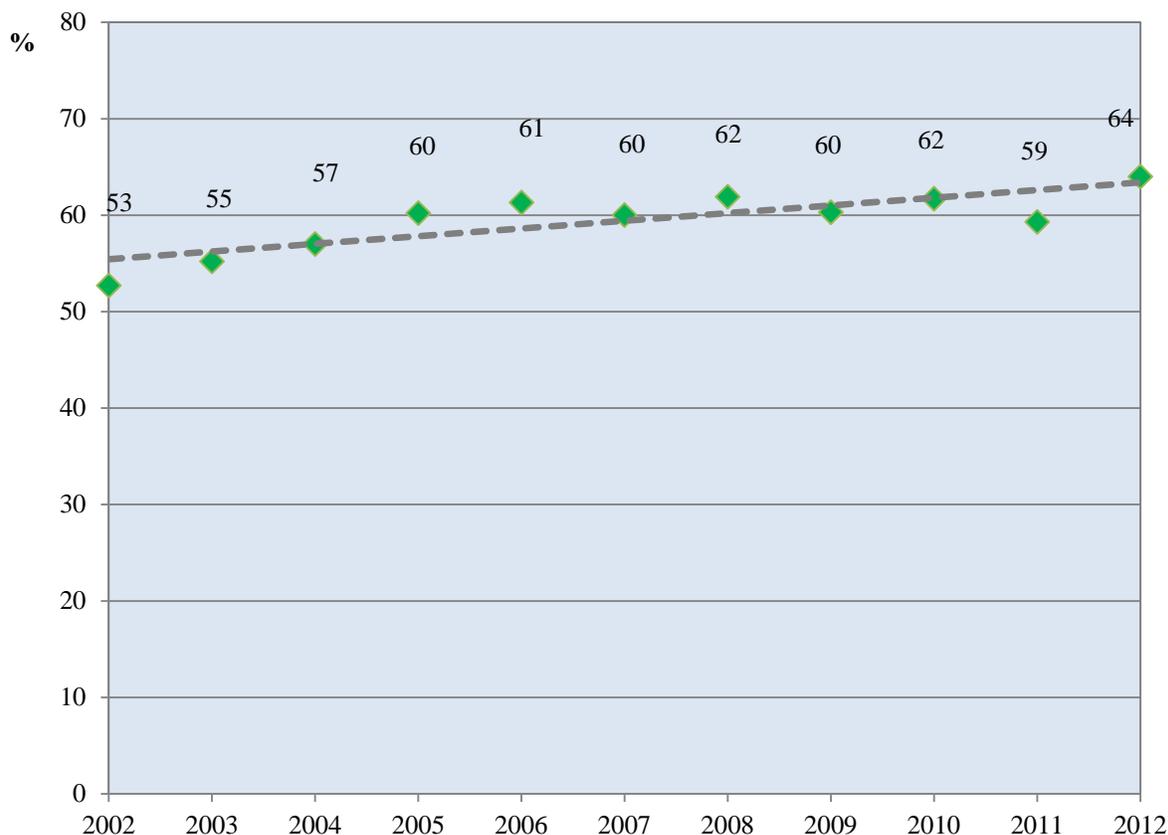


Source: Department of Examinations.

The proportion of students passing the GCE A/L examination increased from 53 percent in 2002 to 62 percent in 2008. The GCE A/L examination pass rate has since further risen to 64 percent in 2012. The structure of the GCE A/L examination during this time period was constant, so that the performances of students over time are more comparable than for the GCE O/L examination.

The link between investment in education and education quality is complex and non-linear, with a variety of education quality related interventions playing a key role. The link between public investment in education and education outcomes also takes time to play out, so that outcomes in a given year are normally the result of investment over several past years. In this context, it is useful to observe that the rise in the performance of students between 2002 and 2008 in both the GCE O/L and GCE A/L examinations was during a period when public investment in general education was increasing, while the subsequent performances have been in a context where real expenditure has been decreasing. This pattern suggests that greater investment in education was positively associated with better performance at examinations, and that a lag effect from the period when real investment was rising may be contributing positively to performance even in subsequent years when the real value of investment has been declining.

Figure 3: GCE A/L Pass Rates (%), 2002-2012



Source: Department of Examinations.

Public Investment in Education

Public education expenditure has increased over the last decade in both nominal and real terms, but with a drop in general education in recent years. The country spent approximately LKR 152,300 million on education in 2013. Out of this sum, LKR 121,400 million was spent on general education and LKR million 30,900 was spent on higher education. In nominal terms public spending on education rose from LKR 41 billion in 2003 to approximately LKR 152 billion in 2013, while in real terms public education expenditure increased from 41 billion in 2003 to about 60 billion during this period (Table 9). The real value of public general education expenditure rose from LKR 35 billion in 2003 to LKR 49 billion in 2013. However, during the period 2006-2008 the real value of public investment in general education was higher than in 2013, with a peak of LKR 59 billion in 2007. The real value of public investment on general education declined from 2008 onwards. There were several reasons for this decrease. The armed conflict in the Northern and Eastern Provinces intensified in 2008, crowding out resources for other investments. In addition, there was a steep rise in food prices globally, creating inflationary pressure. Also, the downturn in the global economy from 2009 onwards had an adverse impact on Sri Lanka, decreasing the availability of resources for public investment. It should be noted, however, that after the end of the armed conflict and the stabilization of global food prices, the real value of public investment in education has not been restored to the level of 2007.

Table 9: Expenditures on General and Higher Education, 2003-2013 (LKR Million)

Year	Nominal			Real (Constant=2002)		
	General Education	Higher Education	Total Education Expenditure	General Education	Higher Education	Total Education Expenditure
2003	35,459	5,673	41,132	35,459	5,395	40,854
2004	40,449	6,206	46,655	38,468	5,425	43,893
2005	52,690	8,201	60,891	46,056	6,492	52,548
2006	65,776	12,445	78,221	52,070	8,853	60,923
2007	84,129	15,103	99,232	59,849	9,422	69,271
2008	83,638	16,590	100,228	52,180	8,897	61,077
2009	90,218	18,085	108,303	48,385	9,161	57,546
2010	96,833	18,098	114,931	49,049	8,544	57,592
2011	105,480	23,188	128,668	49,794	10,147	59,941
2012	109,797	20,886	130,683	48,048	8,394	56,442
2013	121,381	30,921	152,302	48,782	11,538	60,319

Source: Budget Estimates, Ministry of Finance and Planning (various years).

Note: Data for 2013 are estimates.

Recurrent expenditures dominate general education spending. The capital expenditures constituted around 10 percent of general education expenditures (LKR 12 billion in nominal prices) and the recurrent expenditures accounted for 90 percent (LKR 109 billion in nominal prices) in 2013. The share of capital expenditures in general education expenditures went down from around 14 percent in 2003 to around 6-7 percent over 2008-2012 period (Table 10) while the share of recurrent expenditure went up from 86 percent in 2003 to 93-94 percent in 2008-2012. There are two main reasons for the large share of recurrent expenditure. First, Sri Lanka has a low student-teacher ratio (18:1), which requires heavy expenditure on teacher salaries. Second, capital investment in physical facilities and equipment was contained in 2008-2012, leading to relatively low public investment in education.

Table 10: General Education Expenditures, 2003-2013 (LKR Million) (Constant=2002)

Year	Central			Provincial			Total		
	Recurrent	Capital	Total	Recurrent	Capital	Total	Recurrent	Capital	Total
2003	8,561	4,255	12,816	21,948	695	22,643	30,509	4,950	35,459
2004	9,176	4,601	13,778	23,673	1,018	24,691	32,850	5,619	38,468
2005	11,229	5,551	16,780	28,003	1,274	29,276	39,231	6,825	46,056
2006	12,155	3,811	15,966	34,156	1,947	36,103	46,311	5,758	52,070
2007	14,448	5,701	20,149	38,628	1,072	39,700	53,076	6,773	59,849
2008	13,351	2,203	15,554	35,309	1,317	36,626	48,660	3,520	52,180
2009	12,314	1,969	14,283	32,903	1,199	34,102	45,218	3,167	48,385
2010	12,141	2,161	14,303	33,103	1,643	34,746	45,244	3,805	49,049
2011	12,678	2,306	14,984	34,009	802	34,810	46,687	3,107	49,794
2012	12,681	2,031	14,712	32,673	663	33,337	45,354	2,694	48,048
2013	12,260	3,895	16,155	31,726	901	32,627	43,986	4,796	48,782

Source: Budget Estimates, Ministry of Finance and Planning (various years), Annual Report, Central Bank of Sri Lanka (various years), International Monetary Fund, World Economic Outlook Database, October 2012.

Note: Data for 2013 are estimates.

The composition of general education expenditure on the main items of expenditure over the recent past by the Ministry of Education is given in Table 11 below. The recurrent education budget is split between personnel costs for staff, including teachers of national schools, and operations and maintenance expenditure. The division has remained fairly constant at about 55 percent between 2009 and 2013. The capital budget, however, has risen sharply very recently. This has been the result of a high increase under one component in 2013, the MoE Special Development Initiatives budget. This initiative was the establishment of 1,000 secondary schools with facilities and equipment for science subjects at the GCE A/L. whereas earlier only Arts subjects were available. In addition, feeder primary schools were being developed for these 1,000 secondary schools. This initiative is expected to continue into 2014 and perhaps a few years longer.

Table 11: Composition of Public Expenditure on General Education, 2009-2013 (LKR Million)

	2009	2010	2011	2012	2013
MOE Recurrent Expenditure	22,961	23,970	26,697	28,977	30,506
Personnel Cost	12,602	13,428	14,614	16,145	16,870
MOE Capital Expenditure	3,753	4,045	4,249	4,577	9,370
Special Development Initiatives	3,661	3,959	4,127	4,457	9,205

Source: Budget Estimates.

Time Trend of Public Higher Education Expenditure

Public expenditures on higher education have been increasing in real terms (Table 12). The real expenditures more than doubled from LKR 5,400 million in 2003 to 11,500 million in 2013. The share of capital expenditures in the total higher education budget increased from 16 percent in 2003 to 40 percent in 2013. The real recurrent expenditure increased by 32 percent between 2003 and 2007, but then went down by 9 percent in 2008 with further declines in 2009-2010. The real recurrent expenditure has been increasing from 2011 onwards. The main reason for the recent increase in real spending has been a substantial increase in the benefit package offered to university academics.

Table 12: Higher Education Expenditures, 2003-2013 (LKR million)

	Nominal			Real in 2002 constant prices		
	Recurrent	Capital	Total	Recurrent	Capital	Total
2003	4,790	883	5,673	4,555	840	5,395
2004	4,786	1,420	6,206	4,183	1,241	5,425
2005	6,114	2,087	8,201	4,840	1,652	6,492
2006	9,337	3,108	12,445	6,642	2,211	8,853
2007	9,666	5,437	15,103	6,030	3,392	9,422
2008	10,273	6,317	16,590	5,510	3,388	8,897
2009	10,639	7,446	18,085	5,389	3,772	9,161
2010	11,512	6,586	18,098	5,434	3,109	8,544
2011	13,199	9,989	23,188	5,776	4,371	10,147
2012	15,333	5,553	20,886	6,162	2,232	8,394
2013	18,508	12,413	30,921	6,906	4,632	11,538

Source: Budget Estimates (various years). Note: 2013 estimates are based on the provisional budget.

The composition of higher education expenditure on the main items of expenditure over the recent past by the Ministry of Higher Education is given in Table 13 below. The nominal expenditure on recurrent budget items has risen in recent years, partly due to the payment of increased allowances for university academics. This is a positive feature, as university salaries were generally inadequate to attract and retain the brightest young graduates in the university system. The recurrent budget is almost entirely transferred to public institutions, mainly universities. The main item of recurrent spending is on salaries, which are paid within the public universities and higher education institutes. The capital budget has increased sharply in 2013, mainly due to a steep increase in capital transfers. The latter are transfers to universities for expansion and development of facilities and purchase of equipment.

Table 13: Composition of Public Expenditure on Higher Education, 2009-2013 (LKR Million)

	2009	2010	2011	2012	2013
MoHE Recurrent Expenditure	10,641	11,512	13,625	15,333	18,508
Transfers to Public Institutions	10,567	11,408	13,442	15,143	18,253
MoHE Capital Expenditure	7,446	6,587	5,326	5,553	12,413
Capital Transfers	3,242	3,034	4,514	4,643	8,999

Source: Budget Estimates.

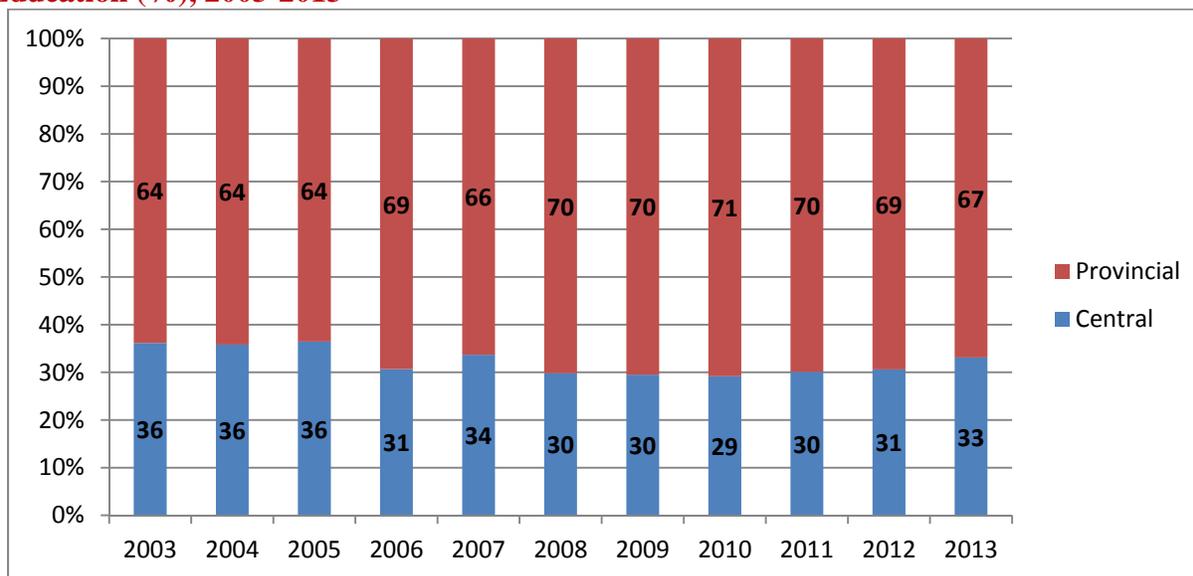
Central and Provincial General Education Expenditure

General education is a devolved subject with the provinces playing an important role. About 9,560 of the 9,905 government schools (97 percent) are administered by the Ministries of Education in the provincial councils. The wealthier students tend to attend the national schools administered by the central Ministry of Education, while the provincial schools cater more to lower income families. Hence, provincial schools are important for equity and distributive justice. The major portion of provincial revenue comes from grants provided by the center, as the main revenue raising powers are with the center.

Spending by provinces constitutes around two-thirds of total general education expenditures. The provinces directly spent around LKR 81 billion and the central government around LKR 40 billion in 2013. Over the past decade the share of provincial education expenditures has been rising. The proportion of education spending in the provinces rose from about 64 percent before 2006 to around 67-70 percent during 2006-2013 (see Figure 4). It should

also be noted that expenditures by the central Ministry of Education on items such as textbooks, school uniforms, curriculum development and examinations, cover the entire country and benefits students in the provincial schools as well as the students attending national schools.

Figure 4: Share of Public Education Expenditure between Central and Province in General Education (%), 2003-2013



Source: Budget Estimates, Ministry of Finance and Planning (various years).

Education Spending and Learning Outcomes: Regional Patterns and Equity

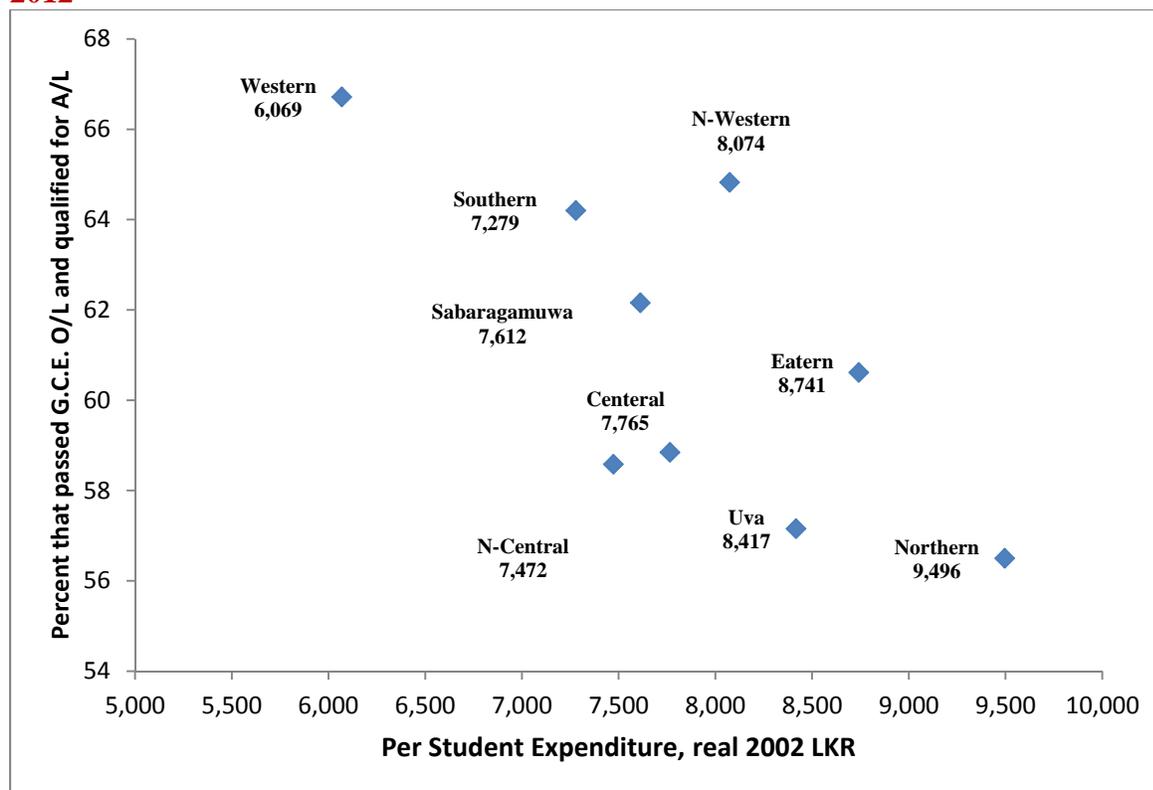
Progressive government financing, with favorable treatment for poor provinces and regions, is a key policy to reduce regional disparities and increase education access and quality in disadvantaged areas. The Finance Commission, which guides the allocation of resources to provinces, bases this allocation on a formula that seeks to promote balanced growth, with poorer regions which have low capacity for raising tax revenues receiving higher grants from the center, while richer regions with greater capacity to generate income through taxation receiving lower grants from the center.

Public investment in education is directed more towards more disadvantaged provinces.

The government policy framework for financing education favors distributive justice, and is based on a formula that seeks to promote balanced regional development. Figure 5 shows that public education spending per student is greater in the poorer provinces such as the Northern Province, the Eastern Province, and Uva Province, than in wealthier provinces such as the Western Province, Central Province and Southern Province. This is equitable, as learning outcomes and student performance are weaker in these less developed provinces. For instance, the Northern Province, which had the lowest GCE O/L pass rate in 2012, spent approximately LKR 9,500 per student, while the Western Province, which had the highest GCE O/L pass rate,

spent about LKR 6,000 per student. Similarly, the Uva Province, which had the second lowest GCE O/L pass rate, spent 8,400 per student, well above the expenditure per student by provinces with better GCE O/L pass rates such as the Southern and Sabaragamuwa Provinces. However, it should also be noted that there is considerable variation between provinces, and some better performing province such as the North-Western Province, spends more on education per student than provinces with worse performances such as the North-Central Province. Overall, though, there is a considerable degree of regional equity in the allocation of resources for education across provinces.

Figure 5: GCE O/L Pass Rates of Provinces in Relation to Investment in Education, 2002-2012



Source: Ministry of Finance, Finance Commission and Provincial Expenditure Reports, various years.

Time Trend of Public Education Expenditure

Despite the increase in education expenditure in both nominal and real terms, education expenditures as a percentage of government spending has been declining. The share of education expenditure in the total government budget declined from 15 percent in 2003 to 9.5 percent in 2013 (see Table 14). The proportion of public resources devoted to education has been clearly lower during the period 2008-2013, compared to the preceding period from 2003-2007. Both recurrent and capital education expenditure as a share of total government recurrent and capital spending decreased from 2008 onwards, with a steeper fall in capital expenditure. The lower share of the government budget devoted to education over the last few years partly reflects

the large increase in physical capital investment undertaken by the government, which has led to a lower share of investment in education. However, the decrease in education expenditures as a share of total public expenditure does not appear to support the ambitions of the country to become a knowledge hub.

Table 14: Public Education Investments as a Share of Government Expenditure and GDP, 2003-2013

Year	Public education expenditure (Nominal prices, LKR million)	Education expenditure as a percentage of GDP	Education expenditure as a percentage of government expenditure	Education recurrent expenditure as a percentage of government recurrent expenditure	Education capital expenditure as a percentage of government capital expenditure
2003	41,132	2.26	15.35	15.93	12.6
2004	46,655	2.23	14.8	14.89	14.3
2005	60,891	2.48	14.66	15.88	10.49
2006	78,221	2.66	14.03	15.03	9.8
2007	99,232	2.77	13.84	15.42	8.77
2008	100,228	2.27	10.27	12.37	4.55
2009	108,303	2.24	9.33	11.15	4.32
2010	114,931	2.05	9.61	11.56	4.35
2011	128,668	1.97	9.62	11.58	4.48
2012	130,683	1.72	8.62	11.65	2.37
2013	152,302	1.75	9.54	11.93	4.65

Source: Budget Estimates, Ministry of Finance and Planning (various years), Annual Report, Central Bank of Sri Lanka (various years).

Note: Public education expenditures include primary, secondary, and higher levels of education. Data for 2013 are estimates.

Cross-Country Comparisons of Public Education Expenditure

Public education expenditure as a percentage of total government expenditure is modest by international standards⁴. The share of the government budget devoted to education was approximately 10 percent in 2013 (Table 15). This is one of the smaller shares of public investment in education internationally. Public investment in education as a share of government expenditure in Sri Lanka falls below the level of East Asian countries such as Malaysia, Thailand, Singapore and South Korea; and Latin American countries such as Argentina, Brazil, Bolivia, Colombia and Costa Rica. It is also well below the share of investment for lower-middle countries and upper-middle income countries which normally invest about 17 percent of the government budget on education. However, in South Asia countries such as India and Pakistan

⁴ Public education expenditure here includes expenditure on general and higher education as well as technical and vocational education and training.

devote a smaller share of government expenditure to education than Sri Lanka, while elsewhere countries such as Armenia, Azerbaijan and Lebanon also invest a lower proportion of public spending in education.

Education expenditure as a percentage of GDP is about 2.0 percent in Sri Lanka. This is one of the lowest shares of public investment among countries. In the list of countries shown in Table 15 below, only Lebanon invests less public resources to education. Other countries which devote a smaller share of the public budget to education than Sri Lanka, such as India, Pakistan, Armenia and Azerbaijan, invest a larger share of GDP in education. This essentially suggests that these countries have a higher ratio of public expenditure to GDP than Sri Lanka.

Table 15: Public Education Expenditure as a Percentage of GDP and Government Expenditures, Sri Lanka and Selected Other Countries (2011 or nearest year)

Country	Public education expenditure as a percentage of government expenditure	Public education expenditure as a percentage of GDP
Sri Lanka	10.2	2.00
Malaysia	21.3	5.13
Thailand	29.5	5.79
South Korea	15.8	5.05
Singapore	22.7	3.30
Indonesia	15.2	2.77
Philippines	15.0	2.65
Vietnam	18.7	6.85
Argentina	14.0	5.78
Brazil	18.1	5.82
Bolivia	24.6	7.60
Costa Rica	23.1	6.28
Colombia	14.9	4.49
Russia	11.9	4.10
Lebanon	7.1	1.65
Armenia	11.7	3.15
Azerbaijan	8.2	2.44
India	10.5	3.32
Bangladesh	14.1	2.23
Pakistan	9.9	2.37
Nepal	20.2	4.72
South Asia	11.0	2.85
Low and middle income	17.3	4.53
Upper middle income	16.7	5.04

Source: Budget Estimates, Ministry of Finance and Planning, Sri Lanka (2013), EdStats, World Bank (2012 or latest available years prior to 2010).

Note: It includes primary, secondary, tertiary education expenditures.

There are several reasons for the low level of public education investment in Sri Lanka: (a) government revenue is low, at about 14 percent of GDP, which tightly constrains the investment ability of the government; (b) the absence of investment in early childhood education; (c) the relatively low teacher salaries, with Sri Lankan teachers receiving payments that are considerably less, as a proportion of national income per capita, than teachers in other Asian countries such as South Korea, Malaysia and Thailand, and also less than the other South Asian countries shown in Table 16; (d) low investment in higher education, including research and development; (e) the competition for resources from a wide range of public investments in physical infrastructure such as roads and highways, air and sea ports, and irrigation facilities; and (f) large defense and public order expenditures.

Table 16: Annual Teacher Salary as a Percentage of GDP per Capita

Country	Percent
Bangladesh	2.26
India	2.34
Nepal	2.80
Pakistan	1.88
Sri Lanka	0.97

Source: Authors' estimates based on Dundar *et al.* (2014a) and World Development Indicators (2012).

Low investment in general education can have several negative consequences for the performance of an education system. Under-investment in the capital education budget means that the ability of the country to develop, operate and maintain an adequate stock of modern education assets and spaces, such as classrooms adapted to the use of technology, IT laboratories, libraries, science laboratories, language laboratories, activity rooms, multi-purpose rooms, IT equipment, science equipment, and teaching-learning material, is limited. Low investment in the recurrent education budget means that the country's ability to recruit and retain high quality individuals as school teachers, one of the most important determinants of education quality, is restricted. In addition, the capacity to spend on quality processes, such as the professional development of teachers and teacher educators, the management and leadership development of school principals and education administrators, the delivery of on-site academic and administrative support to schools, and to provide incentives for teachers to locate in disadvantaged areas, as well as to meet the operating and maintenance cost of capital education investment, is limited. Overall, the ability of the education system to deliver a high quality education experience for students is constrained by the relatively low level of public investment in education.

Potential Big Picture Areas for Greater Public Resources

There are several key big picture areas which Sri Lanka could consider for increased investment in education. These include investment in Early Childhood Education, a better payment and reward system for teachers, and school grants in support of initiatives such as the Program for School Improvement (PSI) and School-Based Teacher Development (SBTD) which seek to transform the culture of the education system by empowering schools and local school communities. These areas are discussed below.

Investing in Early Childhood Education

Early childhood (typically considered as the period from birth to age 6 or 7) is a critical window of opportunity for human development because, as science indicates, an astounding 85 percent of brain development occurs by the time a child is five years old (Shonkoff and Phillips 2000). During this time, the foundation of a human being's physical, cognitive, linguistic, and socio-emotional skills are developed. Early Childhood Education (ECE) is broadly used to refer to all formal or informal interventions, which support the multidimensional education development process of early childhood. ECCE interventions range from pre and post-natal health and nutrition to informal and formal brain stimulation which is critically important for the basic architecture of the brain to develop fully. The earliest brain stimulation is home based, where the primary care-giver provides the social and emotional interaction to stimulate a child's brain; this begins at birth and as the child approaches 3 years, this brain stimulation becomes more formalized through the play-based learning approach of pre-school education (including Montessori and Kindergarten schools). Japan, a country that has consistently performed well in international assessments of learning outcomes over many years, is well known world-wide to have a very high quality ECE program (see Box 1 for an outline of the Japanese program).

The imperative for investing in early childhood is both social and economic. The evidence clearly shows that children who are disadvantaged early are more likely to: a) have lower educational attainment levels; b) have lower productivity and income; c) be at risk for delinquency; and d) have less than optimal health outcomes and ultimately, they are less likely to contribute to a country's economic growth (Nadeau *et al.* 2011). Remedial efforts to compensate for early childhood deficiencies are costly both to the individual and to society (Carneiro and Heckman 2003). Optimal early childhood development yields highly positive benefits, both in the short and longer term. ECE constitutes one of the best investments in human development.

There is a growing body of evidence that investment in early childhood is not only highly cost-effective, but also has a very high rate of return. A cost-benefit analysis of several early childhood interventions in the U.S.A. have found that the benefit-cost ratio ranges between 2:1 all the way to 16:1 (Karoly *et al.* 2005). Other studies looking at ECE programs in low and

middle-income countries estimate that increasing pre-school enrolments from 25 to 50 percent would have a benefit-to-cost ratio between 6 -17:1 based solely on earnings increases due to increased educational success (Engle *et al.* 2011). Moreover, early interventions have much higher economic returns per dollar invested than interventions at any other stage in life (Heckman 2008; Nadeau *et al.* 2011). All things being equal the rate of return to a dollar of investment made while a person is young is higher than the rate of return to the same dollar made at a later age (Carneiro and Heckman 2003). Studies have estimated these rates of return to be between 7-16 percent annually for high quality ECCE programs (Nadeau *et al.* 2011). Overall, the evidence is clear: investing in early childhood pays high dividends. Based on the international evidence from both developed countries and low-income and middle-income countries, there is a strong case for Sri Lanka investing public resources heavily in expanding access to good quality early childhood education.

Box 1: Early Childhood Education in Japan

In Japan, there are mainly two kinds of institutions involved in preschool education and care: kindergartens and day nurseries. Historically, kindergartens and day nurseries existed separately under the education sector and the welfare sector, respectively. Recently, these institutions have been unified under a new system, the centers for Early Childhood Education and Care (ECEC). Daycare for children under age one is not popular, and mainly for working mothers. Enrollment increases for older ages: as of 2008, more than 80 percent of three-year-olds, 90 percent of four-year-olds, and 98 percent of five-year-olds. Many parents/guardians and children under age three at home take part in non-formal ECEC programs provided by the government at children's centers, community centers or play parks. Below are the management and operational characteristics of Japan's ECEC centers:

- As of 2011, more than 80 percent of ECEC centers were in the private sector.
- Both the “National Curriculum Standard for Kindergartens” and “Guidelines for Nursery Care at Day Nurseries” are followed.
- Nursery teacher qualifications are required to teach 0-2 year-olds. To teach 3-5 year-olds, it is preferred that the teacher holds both nursery teacher qualifications and a kindergarten teacher license, although holding either qualification is sufficient.
- Teachers are subject to few regulations from the government. On-the-job learning and expertise is emphasized.
- The mandated child-teacher ratio in a classroom is 3:1 for newborns, 6:1 for 1-2 year-olds, and could vary for 3-5 year-olds.
- Emphasis is given to both intellectual and emotional/social development, as well as to independence in basic and necessary life habits. Long free play hours are given, and teachers are discouraged from overprotecting children, letting them experience small challenges and injuries.

- Teachers keep close contact with parents on children's health, behavior, and learning.
- The government encourages a close connection between the practice of ECEC and scientific research on ECEC.

Strengthening Teacher Quality and Performance

The quality of a school system rests on the quality of its teachers (Hanushek 2011; OECD 2005). An increasing body of evidence suggests that the main driver of the variation in student learning at school is the quality of teachers. For instance, Hanushek and Rivkin (2010) demonstrates that while students with a weak teacher may master 50 percent or less of the curriculum for that grade; students with a good teacher get an average gain of one grade; and students with excellent teachers advance 1.5 grade levels or more.

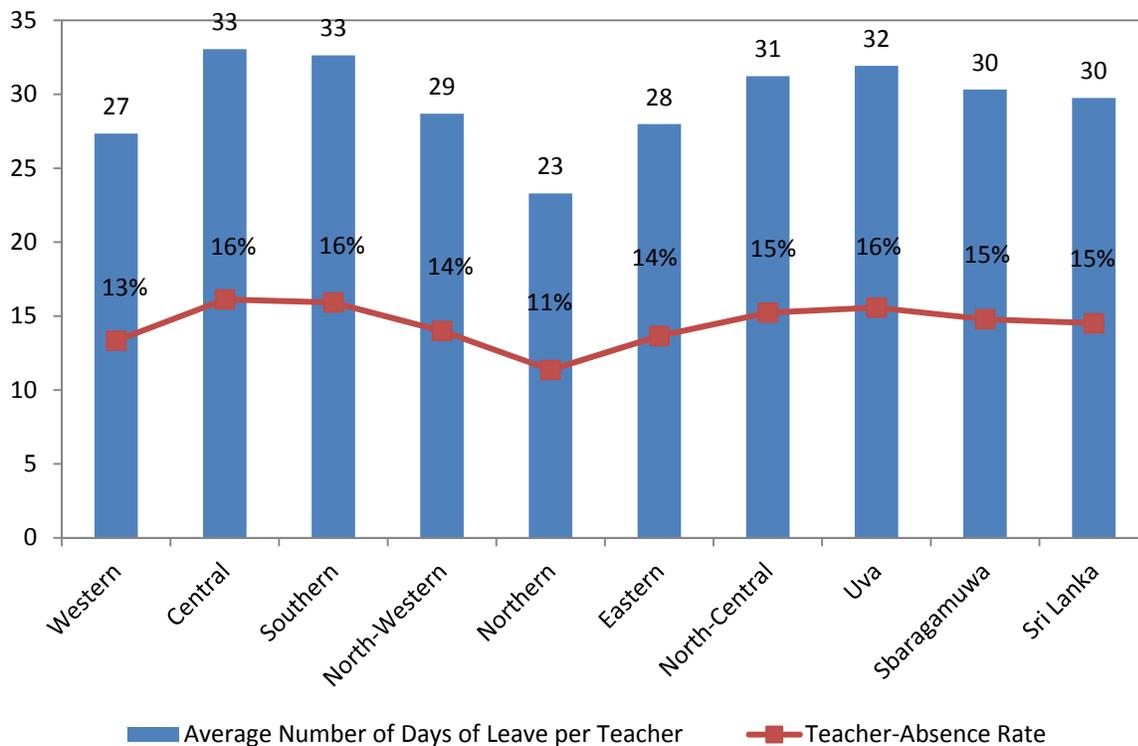
Given the importance of teachers for education developed and upper-middle income countries around the world have tried a wide array of monetary and non-monetary incentives to improve teacher quality and performance. Research on the best education systems concludes that high performing school systems consistently do well to get the right people to become teachers. Three East Asian countries which consistently perform well international assessments of learning outcomes, South Korea, Singapore and Hong Kong, have teacher recruitment policies, including high starting salaries, which enable them to recruit and retain teachers from among higher achievers (McKinsey 2010).

At the aggregate level, Sri Lanka has an adequate stock of teachers, with approximately 220,000 teachers in service. In fact, the country has a relatively large number of teachers in comparison to the student population, resulting in a relatively low student-teacher ratio of 18:1. However, teacher salaries in the country are relatively low. The starting salary of a teacher LKR 23,400 is only two-thirds of the per capita income of the country. The highest salary point on the teacher scale LKR 47,350 is only 30 percent above the per capita income of the country. Teachers in Sri Lanka receive salaries that are considerably less, as a proportion of national income per capita, than teachers in other Asian countries such as South Korea, Malaysia, Thailand, India, Pakistan and Bangladesh. Low teacher salaries result in several problems. The quality of staff attracted into the teaching service falls, especially in key subjects such as English. In addition, is it difficult to recruit young teachers in subjects such as mathematics and science, especially at the level of senior secondary schooling. In addition, teacher morale can be sapped over time, resulting in decreasing performance. The status of teachers also declines in school communities when salaries are low, making it more difficult for teachers to interact on par with other members of school communities, especially in urban areas.

The government could consider increasing teacher salaries over the long-term. This would enable the teaching profession to attract and retain bright and capable young people, who would also be motivated to teach well over the course of their careers. The government is considering changing the structure of the salaries of public servants, given the large differentials that have arisen with pay scales in the public sector. This would provide an opportunity to increase teacher salaries substantially.

Teacher absenteeism poses a significant problem, especially in schools located in difficult areas. The average leave taken per teacher in an academic year ranges from 23 days in the Northern Province to 33 days in the Central and North-Western Provinces (see Figure 6). The teacher-absenteeism rate as a proportion of the school year varies from 11 percent in the Northern Province to 16 percent in the Central, Southern and Uva Provinces. Teacher absenteeism harms student achievement and classroom management, for instance, by delaying the pace at which the curriculum is covered and interrupting the daily classroom routine. In the U.S.A., for instance, studies of teacher absence have shown that a student’s achievement in math and reading falls by 1 to 2 percent of a standard deviation for every 10 days that his/her teacher is absent (Clotfelt *et al.* 2007).

Figure 6: Teacher Absenteeism by Province, 2012



Source: Ministry of Education Statistics.

The government could consider policy initiatives to reduce teacher absenteeism. Two policy measures that could be promising are: (a) the payment of a substantial monthly financial incentive for teachers to locate in schools in difficult areas, as is the practice in many OECD countries; (b) identifying a geographical area within which teachers transfers are relatively uncontroversial, and improving teacher deployment within these areas through appropriate teacher transfers and appointments, combined if necessary with an incentive payment to locate in schools in difficult areas. Many OECD countries provide fiscal incentives for teachers to locate in remote communities (Box 2).

Box 2: Incentive Payments for Teachers in OECD Countries

Many countries have developed schemes that offer extra payments for teachers as incentives to serve in locate in less developed areas or in disadvantaged schools. These schools often have difficulty in attracting teachers. Additional payments are provided yearly in about two-thirds of OECD countries including Australia, Denmark, England, Finland, France, Greece, Ireland, Italy, Japan, Mexico, Netherlands, New Zealand, Norway, Poland, Scotland, Spain and the United States (OECD 2010). In Japan, for instance teachers are paid an allowance for working in hard-to-staff locations. This is called an “isolated area allowance”. This allowance can add up to 25 percent to the basic scheduled salary of teacher.

In Scotland, teachers are awarded the remote school allowance as stipulated by the Scottish Negotiating Committee for Teachers. In the Northern Territory Government, Australia, significant benefits are provided for teachers working in remote area. They include a remote incentive allowance, remote retention payments, special study leave, free housing for teachers recruited to remote communities, family travel assistance, leave to attend to business outside the remote community, and special teaching allowances. Additionally, there are a range of professional and personal support services for teachers working and living in very remote indigenous communities.

Transforming the Culture of Education: Empowerment of Schools

Strengthening school-based management is an important policy initiative for the country.

Rationales that explain the significance of school-based management include the empowerment of the various stakeholders at the school level, efficiency in school management, and improved sense of ownership and accountability of schools. It is also believed that school-based management facilitates principals’ awareness of teacher and parent concerns, and the recognition of, and responsiveness to, local needs. School-based management can ultimately lead to improved student retention and learning. There is a trend toward devolving responsibility and encouraging responsiveness to local needs across the OECD countries. Most countries whose students perform well in international learning assessments give their local authorities and schools substantial autonomy and responsibility over adapting and implementing education content and allocating and managing resources (OECD 2004).

The Government of Sri Lanka has an innovative initiative called the Program for School Improvement (PSI) to empower schools and local school communities. The PSI is a balanced control model of school-based management, where administrative authority and influence are distributed evenly between principals, teachers and members of local communities. The PSI empowers schools to make and implement relevant management decisions to strengthen school performance and improve education outcomes. The PSI is designed to achieve the planned development of the school, the effective utilization of resources, improved performance in curricular and co-curricular activities through cooperation with the community, the creation of a consistency between staff development and training and school needs, and the strengthening of school-community relations (Ministry of Education 2005; World Bank 2011).

The PSI program has been very popular with school communities, and over time had a positive effect on the learning outcomes of primary school children (Aturupane and Deolalikar 2011; World Bank and EFA-FTI Secretariat 2011). A rigorous impact assessment, based on a randomized design found that participation in the PSI was associated with an increase in the mathematics and English language test scores of grade 4 pupils. The positive effect of the PSI is consistent with the evidence from other countries (see Box 3). The international evidence shows that school-based management policies: (a) changed the dynamics of the school, so that parents became more involved and teacher behavior changed; (b) had a positive impact on repetition rates, failure rates, and to a lesser extent dropout rates; and (c) impacted on standardized test scores. (Barrera-Osorio *et al.* 2009; Bruns *et al.* 2011; World Bank 2008). General conclusions drawn from studies on school-based management are: (1) a major focus of decision making in the school should be on how to support improved teaching and learning, building staff capacity to develop, deliver and monitor a curriculum and pedagogy based on student needs; and (2) the capacity of parents and community to support schools efforts must also be developed.

Providing direct grants to schools would help empower schools and can ultimately contribute to improving teaching and learning. In many developed countries the government gives direct grant to schools. School grants in Sri Lanka could support initiatives such as the Program for School Improvement (PSI) and School-Based Teacher Development (SBTD), that seek to transform the culture of the education system by empowering schools and facilitating bottom-up development. School grants can be used under the PSI and SBTD programs for activities to improve student learning and teacher performance. A study of randomized controlled trials on school-based management found that school grants led to improved student and teacher attendance (Blimpo and Evans 2011). The managerial capacity of school stakeholders to play a constructive role in planning, utilizing and monitoring the school grant would be developed through the PSI and SBTD programs. These programs could be used to improve school performance, especially the learning outcomes and soft skills of students. The development of soft skills of students can take place in schools through a variety of curriculum

related, co-curricular and extra-curricular activities. The PSI can promote such activities, especially by linking up with school-based teacher development, which can improve teacher motivation and performance.

Box 3: Positive Impact of School-Based Management around the World

Researchers over the past decade have generated increasing evidence of positive effects of school-based management. For instance, in Mexico a compensatory education program that provided extra resources to disadvantaged rural schools and empowered parent associations had a positive impact on improving learning outcomes. Research on Nicaragua shows that the establishment of school governing body that determined how all school resources were allocated and had the authority to hire and fire principals was associated with higher student test scores. In Indonesia, school-based management program where schools were given a small grant, teachers were provided with professional development programs relating to new approaches to curriculum and teaching, and parents were encouraged to support their schools, also showed positive impact on attendance rates and test results. School-based management programs in Kenya and El Salvador have also indicated a positive relationship with learning outcomes. Studies in the U.S.A. and Canada also show the direct and indirect links between school-based management and improved student learning outcomes.

Source: Barrera-Osorio et al. 2009; Caldwell 2005; Gertler et al. 2006; Levin 1988; Ozler 2001.

Importance of Investment in Higher Education

Higher education can lead to economic growth through a variety of channels (McMahon, 2009). The benefits for individuals include increased productivity, better employment prospects, higher salaries, and a greater ability to save and invest. These benefits also 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, contributing to growth and further improving lifetime earnings and economic welfare. Higher earnings for well-educated individuals also raise tax revenues for governments and ease the burden on state finances. Higher earnings also generate greater consumption, which benefits producers from all educational backgrounds.

Higher education can help economies keep up or catch up with more technologically advanced societies. Higher education graduates are likely to be more aware of and better able to use new technologies. They are also more likely to develop new tools and skills themselves. Their knowledge can also improve the skills and understanding of non-graduate co-workers, while the greater confidence and know-how inculcated by advanced schooling may generate entrepreneurship and innovation, with positive effects on job creation.

Sri Lanka has embarked on higher education reforms to expand the access to higher education in areas of economic and social importance, and to improve teaching and learning. While some progress has been made, much more needs to be done and achieved. For instance, the current capacity of the public university system is insufficient; not more than about 17 per cent of those qualifying for university education can gain admission to public universities. Sri Lanka can be inspired by the economic development of countries such as Ireland, which to a large extent has been based on smart investments in human capital, especially increased investments in higher education and innovation in recent years (see box 4).

Box 4: Investment in Higher Education and Economic Development in Ireland

In just over a generation, Ireland has evolved from one of the poorest agricultural countries in Western Europe to one of the most successful, reversing the persistent emigration of its best and brightest. At the heart of this success is a belief in economic openness to global markets, low tax rates to attract foreign capital, and investment in all levels of education. The economic growth of Ireland is impressive as it has increased its share of the world GDP by almost two and half times from 0.13 percent in 1970 to 0.29 percent in 2012. In comparison Sri Lanka's share of the world GDP only grew from 0.074 percent in 1970 to 0.081 percent in 2012.

The Irish have a very high regard for education. In the absence of mineral or other natural resources, the key to wealth for Ireland is through the knowledge and skills of its people as it is the case for Sri Lanka. One of the biggest successes of the Irish economy has been new job creation, many of them knowledge-intensive jobs. From 1990 to 2005, employment soared from 1.1 million to 1.9 million in Ireland. In 2013, the number of jobs stood at 1.85 million and is now growing after the credit and property crash in 2007-08. Ireland became technically the first of Europe's crisis-hit countries in December 2013 to emerge from its international financial rescue program.

Ireland's economic success since the 1980's has been largely based on strong investments in education which has led to significant foreign investments, particularly from large American corporations. Ireland is seen as having a young, English-speaking, highly educated population; a large European market (Ireland became a member of the EU in 1973); a pro-business fiscal policies; and an attractive location for expatriate staff.

Ireland's higher education and vocational training systems received substantial increases in public investments and reached out to business to ensure that the pipeline of new workers would meet the immediate skill needs. And the emphasis today on growing R&D investments continues to solidify linkages between higher education and vocational institutions and industry.

Sri Lanka's economic advancement as a knowledge-based middle-income country will depend on the acquisition and use of technologies at increasing levels of complexities, qualities and productivity, as well as the generation of a continuous stream of

improvements and innovations. Sri Lanka is seeking to transform its higher education system from a largely national system, focused on traditional teaching methods and with a limited research and innovation, to a higher education system that is global and labor market oriented, and with strong science, technology and innovation linkages between higher education institutions, research centers and industry. The Government needs to invest in higher education and also continue to encourage private investment (national and foreign) establishment and expansion of private higher education institutions. Sri Lanka furthermore needs to promote research and innovation partnerships between universities, research institutes and the private sector to establish synergy and networking on concrete R&D projects and innovation in key areas for economic development.

Under-investment in higher education also can have many adverse effects on an economy. Around the world rates of return to higher education have been increasing, and now often generate the highest returns to all levels of education. Sri Lanka, with relatively modest levels of higher education attainment in the labor force, is constrained in competing with more advanced middle-income countries and developed economies for higher value added economic activities in industries and services. Low investment in the recurrent higher education budget has severe adverse consequences. Higher education institutions, especially universities, need to attract and retain the brightest minds in the country, and enable them to contribute through high quality research, innovation and teaching. However, low recurrent investment means that the salaries of academic staff are low, with the result that the best minds do not join the higher education sector. The best intellects interested in academic careers migrate overseas, usually to OECD countries. Other bright and capable young graduates seek jobs outside the higher education sector. Sri Lanka has recently sought to address this problem by raising the allowances of university academics, so that payment levels are relatively high compared to a few years ago. But with global competition for the brightest academics from around the world, Sri Lanka will continuously face the challenge of making academic benefits competitive.

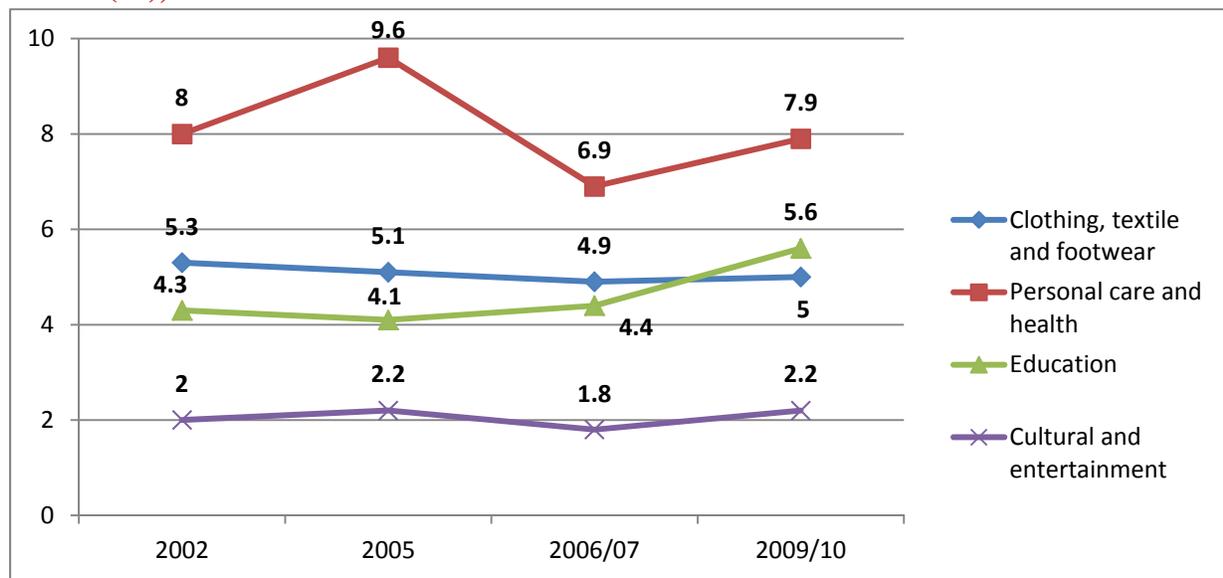
Under-investment in the higher education capital budget has negative consequences. It means that the ability of the country to develop, operate and maintain an adequate stock of modern higher education physical assets and facilities in higher education institutions, especially in equipment and facilities in information technology, engineering, medicine, and the sciences, is constrained. Sri Lanka's currently enrollment rate in public sector higher education internal study programs is only about 5 percent, and this proportion needs to expand in the future. This would require further expansion of the public and private higher education institutions. The expansion of in-take in public universities needs to be targeted at degree programs which are in high demand, such as IT, engineering, technology and the sciences. These programs require relatively expensive facilities and equipment, so that public resources will be needed. In addition, universities need to scale up their engagement in research and innovation, which again can be expensive, and will require greater public financing. The alternative higher education or short-cycle vocational higher education sector, which directly provides job-oriented higher education,

such as the network of Advanced Technological Institutes (ATIs) of the Sri Lanka Institute for Advanced Technological Education (SLIATE), also needs to increase in-take capacity and expand over time.

Private Education Expenditure

Private expenditure on education has been rising over the past decade (Figure 7). The share of private education expenditure in household non-food expenditures increased from 4.3 percent in 2002 to 5.6 percent in 2009/10. On average, households spend around LKR 1,222 per month for education, which is approximately LKR 1,178 per student. While the government expenditure, including general, higher and vocational and technical education, per student per year in 2010 was around LKR 27,000, households spend around LKR 14,700 per year or LKR 14,100 per student per year on various education items in 2010.

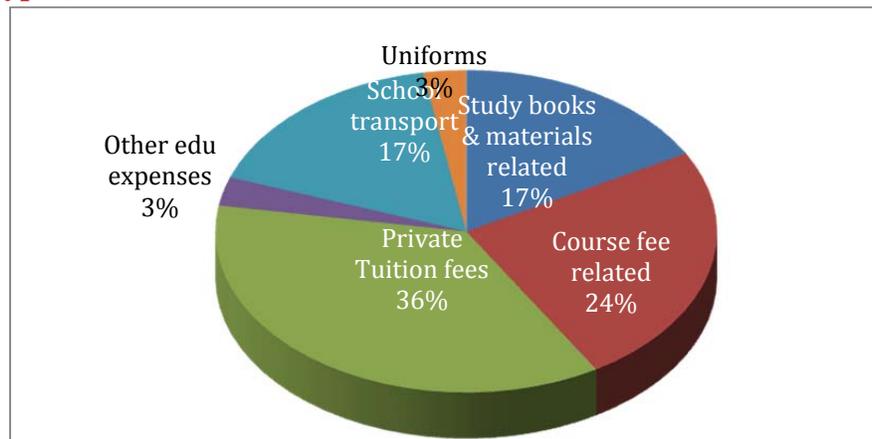
Figure 7: Share of Education Expenditure in Household Non-food Expenditure in Sri Lanka (%), 2002-2010



Source: HIESs (2002; 2005; 2006/07; and 2009/10).

The majority of private expenditure on education goes to private tuition and course related fees (see Figure 8). Household spending on education covers a wide range, including: (a) expenditure on school/course fees such as facility fees for government schools, private school fees, fees for technical education and vocational training, and higher education courses; (b) education books and materials such as exercise books, stationary, education related books, newspapers and magazines; (c) expenditure on private tuition, and (d) other expenditures. The largest item of household education expenditures (36 percent) is for private tutoring, with the next largest expenditure item course related fees (24 percent), followed by spending on books (17 percent) and transportation to school (17 percent).

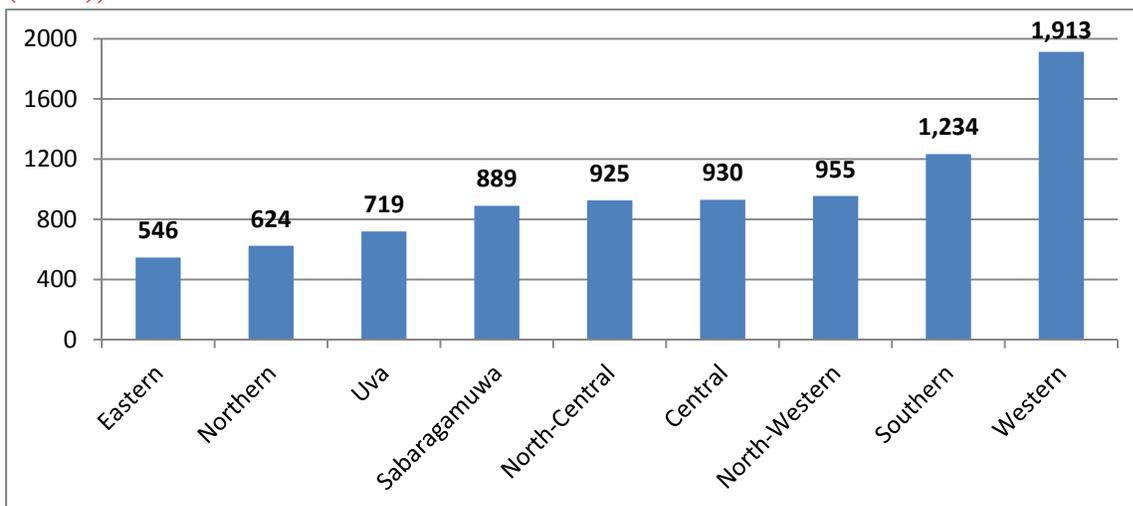
Figure 8: Proportion of Household's Monthly Expenditure on Education by Education Expenditure Type (%)



Source: HIES 2009/10.

There is a wide variation in household education expenditures per student by province (Figure 9). Households from the Western Province spend 3.5 times more a month on education per student than in the Eastern Province - LKR 1,913 and LKR 546 respectively. The second highest monthly household spending per student is in Southern province, LKR 1,234. Households in North-Western, Central, North-Central and Sabaragamuwa spend between LKR 889-955. The provinces with the lowest expenditures are Eastern, Northern and Uva. Overall the pattern shows that the highest expenditure is by households in the wealthier provinces, Western, Southern and North-Western, and the lowest expenditure is by households in the poorer provinces such as Eastern, Northern and Uva.

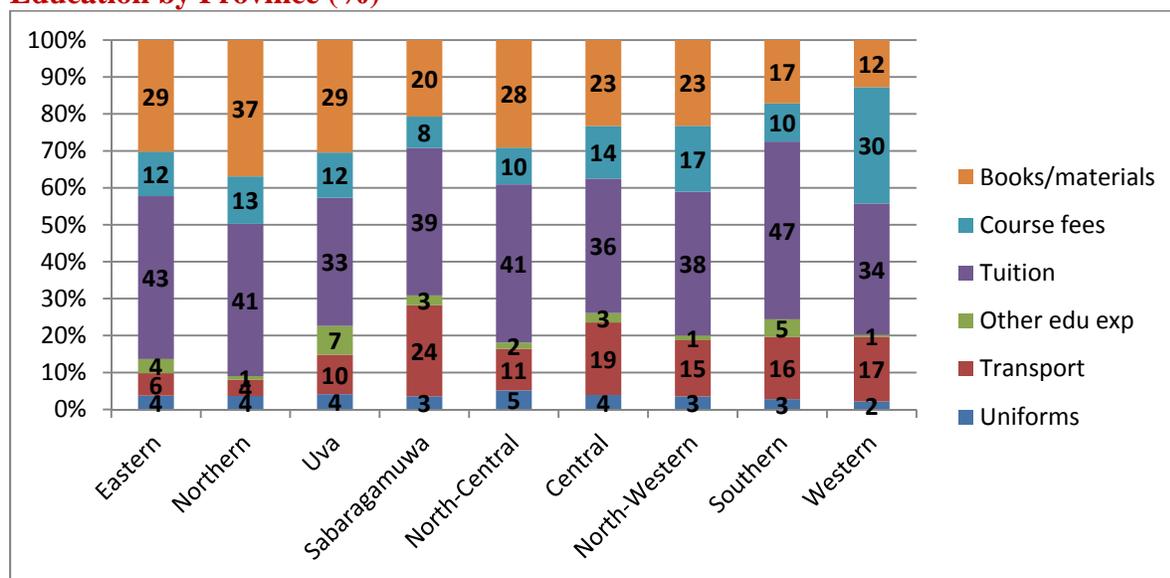
Figure 9: Average Monthly Household Expenditure per Student on Education by Province (LKR), 2009/10



Source: Bank staff estimates, based on HIES 2009/10.

The composition of private education expenditures varies substantially by province (Figure 10). The expenditure patterns especially differ for books and materials, course fees and transportation. For example, while a share of household’s expenditures per student for books and materials is only 12 percent in Western province, it is 28 percent in North-Central, 29 percent in Uva and Eastern and 37 percent in Northern. On the other hand, households in Western province dedicate substantially higher share of education expenditures to course fees, 30 percent, compared to households from other provinces which spend 8-17 percent of their education budget on course fees. There is also substantial variation in spending for transportation to school: while in Sabaragamuwa 24 percent of education expenditures go for transportation, this share is much lower in other provinces ranging from 4 percent in Northern to 19 percent in Central. The share of expenditures on tuition ranges from 33 percent in Uva to 47 percent in Southern province. Finally, households spend between 2 percent (Western) and 5 percent (North-Central) of their education budget on uniforms.

Figure 10: Composition of Average Monthly Household Expenditure per Student on Education by Province (%)

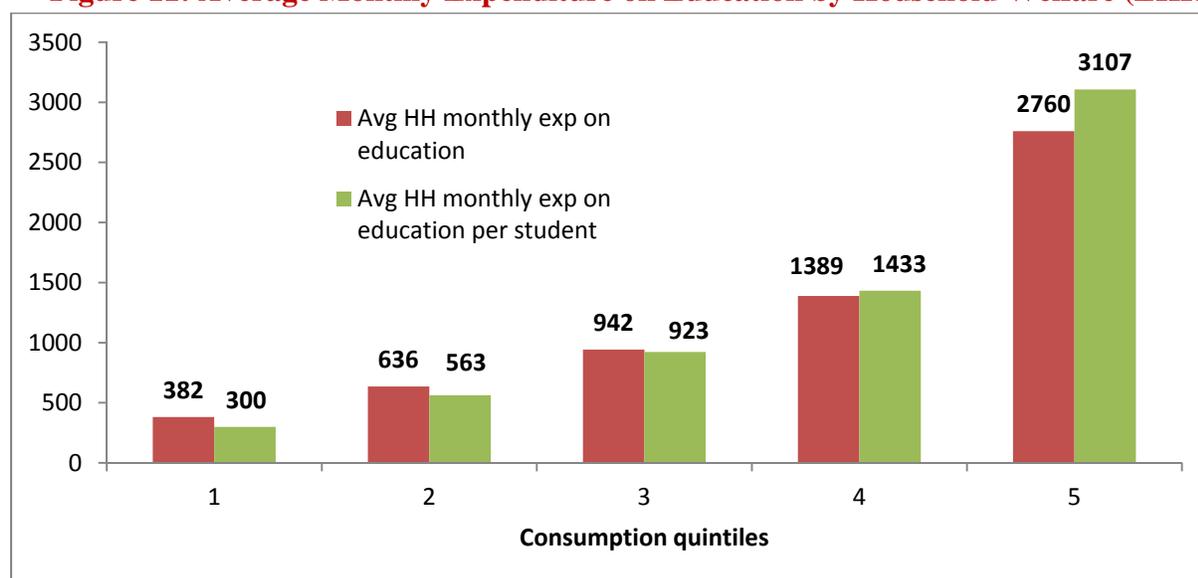


Source: Bank staff estimates, based on HIES 2009/10.

The economic levels of households influence how much is invested in education. The richest 20 percent of households spend about LKR 2,760 per month on average for education (Figure 11). Households in the next quintile spend an average of around LKR 1,390 per month on education. Education expenditure progressively declines to an average of about LKR 380 per month for the lowest quintile. The same pattern is seen for education expenditures per student. Households from the highest quintile spend LKR 3,100 per month per student on education. Households from the second quintile spend LKR 1,400 per month per student on education. Households in the lowest quintile spend LKR 300 per month per student on education. Overall, it is clear that wealthier households invest substantially more than poor households in human capital. This

pattern of education spending, with wealthier households devoting a higher share of expenditure to investment in human capital, reflects the higher income elasticity of private education spending and indicates increasing willingness to pay for education as households become wealthier.

Figure 11: Average Monthly Expenditure on Education by Household Welfare (LKR)



Source: Bank staff estimates, based on HIES 2009/10.

The main item of private household education expenditure is on tuition. The expenditure on tuition per student as a proportion of household expenditure per capita is given in Table 17 below. The spending on tuition rises as household become wealthier. The two highest quintiles invest approximately 7 percent of per capita household expenditure on tuition. The middle quintile devotes 6.6 percent per capita household expenditure to tuition, while the second and lowest quintiles devote 4.8 percent and 3.2 percent to tuition respectively.

Table 17: Household Tuition Expenditure per Student as a Proportion of Per Capita Household Spending

Consumption quintile	Tuition per student as percentage of consumption per capita	Tuition as percentage of total consumption expenditure
Lowest Quintile	3.15	0.72
2	4.76	1.10
3	6.58	1.38
4	6.93	1.49
Highest Quintile	7.19	1.45
Total	5.57	1.23

Source: Bank staff estimates, based on HIES 2009/10.

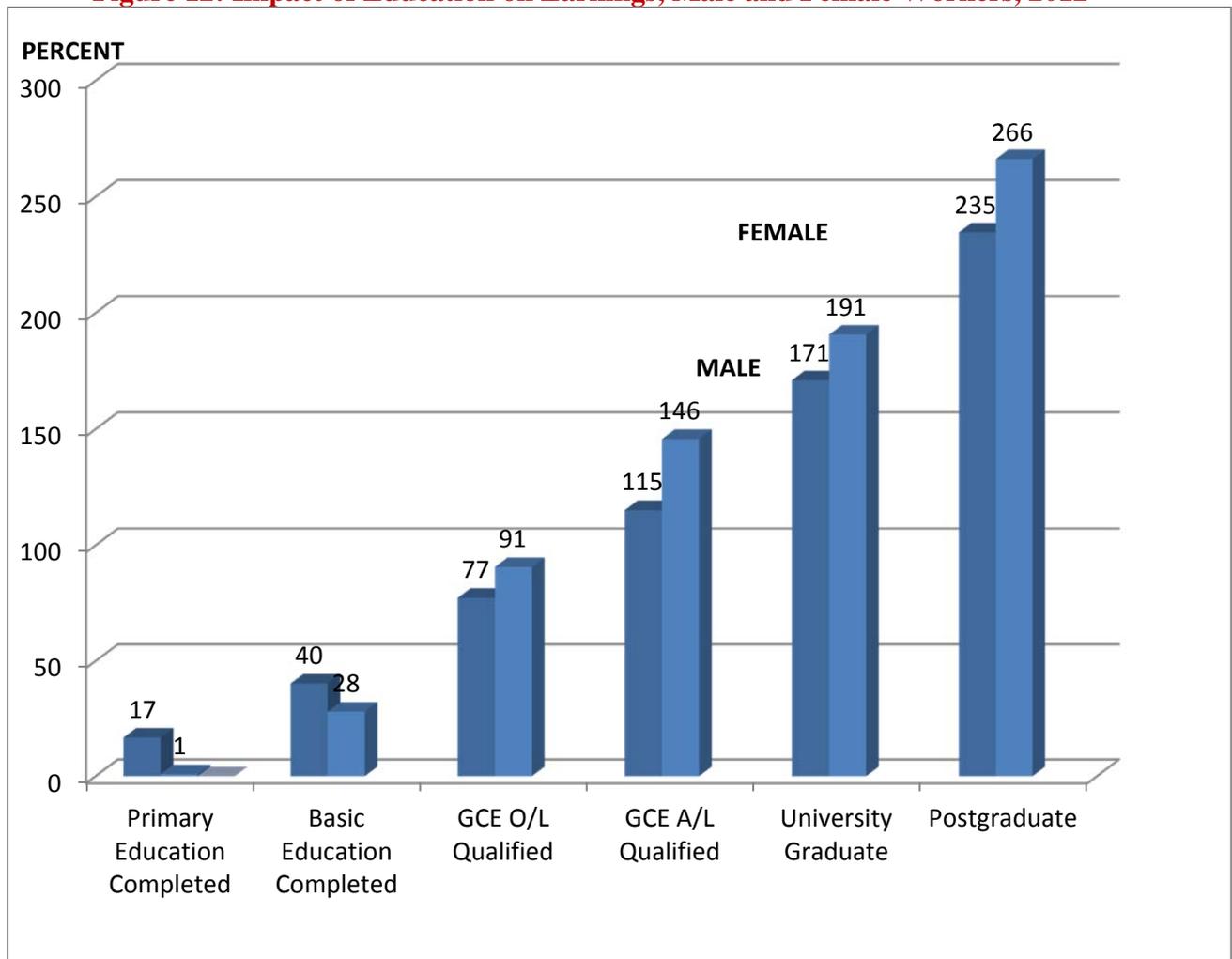
The expenditure on tuition at the level of general education can be interpreted in several ways. First, it can be a reflection of the intense competitiveness of families and individuals, with parents and children seeking to gain an advantage by supplementing their formal schooling with additional instruction through private tuition. The widespread prevalence of private tuition/coaching in middle-income and even advanced economies, including in countries as diverse as Japan, Canada, Brazil, South Korea and Hong Kong lend credence to this notion (Bray 2006). Second, tuition teachers typically provide instruction aimed directly at examination papers, while schools seek to provide a broader education with wider social and cultural goals. Some parents and students would seek to focus more closely on examination outcomes than on wider educational goals, and devote time and resources to private tuition. Third, parents and students may not be satisfied with the quality of education provided in schools, and seek to supplement their learning through tuition. Hence, it is a rational decision by parents and children to invest in tuition, if they are seeking to raise their test scores.

The household expenditure on course fees reflects the increasing investment in private higher education institutions, which have been expanding in recent years; payments for professional courses and programs operated by the private sector, especially in areas such as IT, management, accountancy, marketing and English; and expenditure on international schools and private schools. The Mahinda Chintana policy framework explicitly identifies the promotion of private sector participation in higher education and secondary education as policy priorities. Hence, household spending on fees for private education institutions is likely to rise in the future.

External Efficiency: The Relationship between Education and Earnings

Education attainment and earnings are positively associated in Sri Lanka. Earnings increase continually as the education levels of individuals improve (see Figure 12). A male with primary education completed earns 17 percent more per month than a male with no schooling. Among individuals who have completed basic education, a man earns 40 percent more than a male worker with no education and a woman earns 28 percent more than a female worker who is not educated. The earnings of both men and women increase further at each level of education. Among individuals who have completed the GCE O/L, men earn 77 percent more than uneducated male workers, and women earn 91 percent more than uneducated female workers. Among individuals who have completed the GCE A/L, men earn 115 percent more than uneducated men, and women earn 146 percent more than uneducated women. The greatest gains are seen among men and women who have completed higher education. Male university graduates earn 171 percent more per month than uneducated men, and female university graduates earn 191 percent more per month than uneducated women. Postgraduate educated men earn 235 percent more per month than uneducated men, while postgraduate educated women earn 266 percent more per month than uneducated women. Overall, these findings clearly demonstrate that men and women benefit from investment in education.

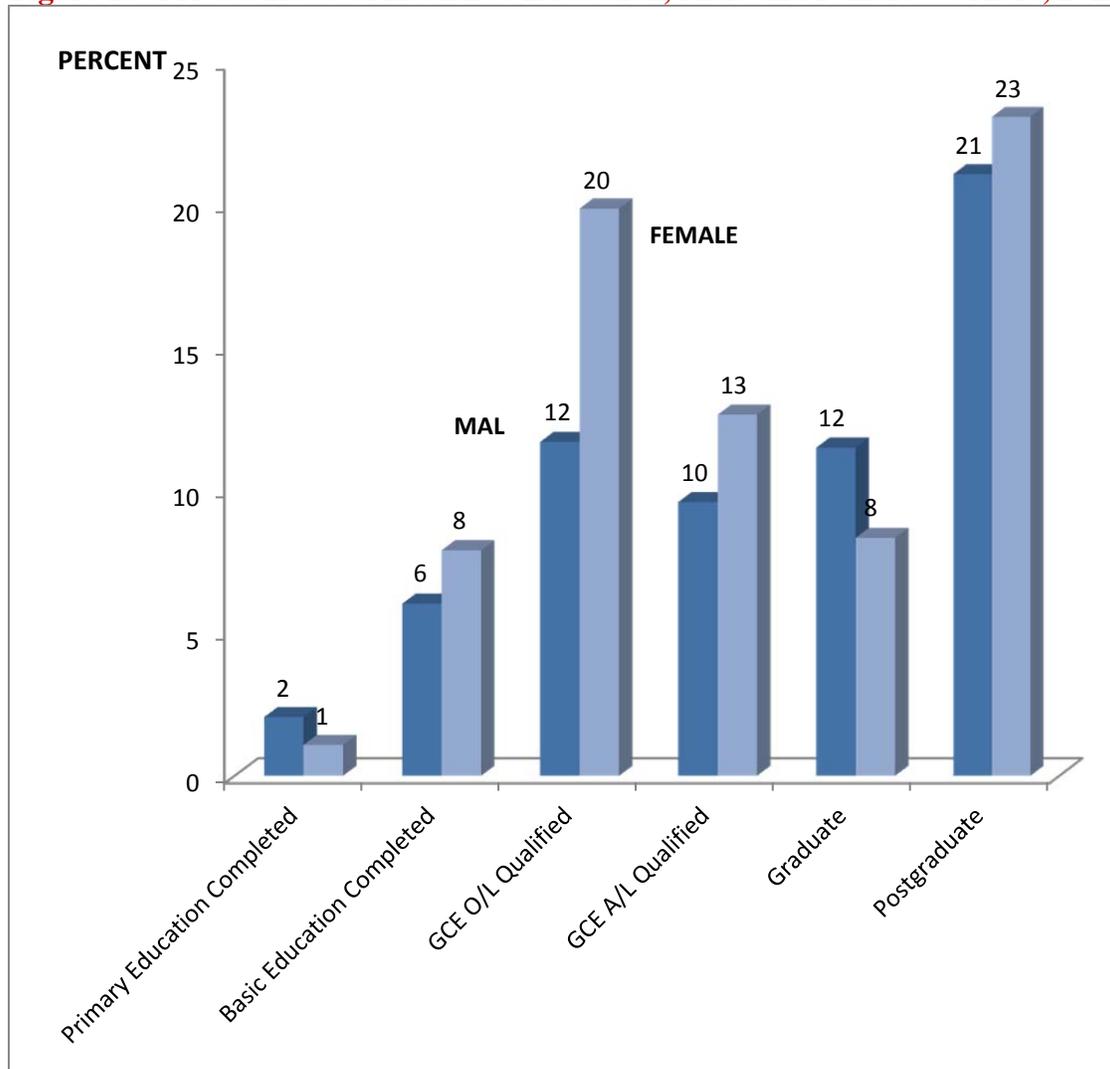
Figure 12: Impact of Education on Earnings, Male and Female Workers, 2012



Source: Bank staff calculations from the Labor Force Survey 2012.

The rates of return to education are positive, and considerable, at the secondary and higher education levels. Among primary educated workers the returns to education are positive but slight, at just 2 percent for men and 1 percent for women, respectively (Figure 13). Individuals who have completed basic education receive somewhat better returns: 6 percent for men and 8 percent for women. However, among individuals who are secondary educated or higher, returns to education are greater. GCE O/L qualified men earn returns of 12 percent, while GCE O/L qualified women enjoy even higher returns at 20 percent. Among GCE A/L qualified individuals, men receive a return of 10 percent, while women earn a return of 13 percent. Among university graduates the returns to education for both men is 12 percent and for women 8 percent. At postgraduate level the returns to education are very high, with men enjoying rates of return of 21 percent and women receiving returns of 23 percent.

Figure 13: Private Rates of Return to Education, Male and Female Workers, 2012



Source: Bank staff calculations from the Labor Force Survey 2012.

This pattern of returns to education is consistent with the fact that the supply of primary and basic educated human capital in Sri Lanka is high, so that returns to education at these levels are small. At secondary education level and higher education level, however, the supply of educated labor is lower, and returns to education are high. In addition, workers could be using their educational certificates at secondary education and higher education levels to signal their quality, while employers may be using these certificates to screen potential employees for quality. Overall, the pattern of returns to education is consistent with economic theories of human capital and of signaling–screening in labor markets with asymmetric information. Overall, the pattern of returns to education shows that investment in secondary and higher education yields the higher returns. At the same time, it should be kept in mind that students reach secondary and higher education through the route of primary education, and investment in good quality primary education is important for high quality output at the secondary and higher education levels.

Conclusions and Recommendations

Sri Lanka has done well in promoting access to primary and secondary education through a long history of public sector provision. Participation rates are high and equitable among gender, regional and economic categories. Learning outcomes in primary and secondary education have also been increasing, albeit from a low level. The internal efficiency of primary and secondary education is strong, and this has enabled the country to support a high level of participation on a relatively low public education budget. Higher education enrolment has also been rising over time. However, Sri Lanka's enrollment in higher education is still modest and well below the average levels for middle-income countries.

Public investment in education is low by international standards. In addition, recently public investment in general education has been falling in real terms, and constrains Sri Lanka's ability to build on the gains of the past and accelerate future development. Higher education investment is also inadequate, and universities have expressed concern that they are squeezed for operating expenses and maintenance costs, as well as for capital investment.

Public investment in education is relatively equitable. For instance, provinces which are economically poorer and have weaker education outcomes receive more funds for primary and secondary education than wealthier provinces. This is due to the formula of the government to promote balanced regional development. Increasing investment in education within the formula for balanced development would be equitable and help provide the resources needed for ore disadvantaged provinces to develop their education systems.

Investment in secondary education and higher education generate high rates of return in Sri Lanka. The country's enrollment in higher education is still modest and well below the average levels for middle-income countries. Greater resources need to be invested in the expansion of in-take in universities targeted at degree programs which are in high demand, such as IT, engineering, technology and the sciences. Public spending on higher education also needs to create incentives to promote research and innovation. To become a knowledge hub, as highlighted in the Mahinda Chintana, investment could aim to strengthen linkages across institutions, research centers and industry in Colombo, as well as develop strong science, technology and innovation linkages abroad.

In addition, there are some major gaps in the public education financing framework. The most glaring gap is the lack of investment in early childhood education, which is known in the development literature to yield high and lasting returns through the subsequent stages of education and into the labor market performance of individuals.

Improving the quality of general education would require investments in teachers. Teacher salaries in Sri Lanka are relatively low and these have an impact on the quality, motivation and

retention of good teachers. In an environment of limited fiscal space, increasing teacher salaries may not be an option in the medium-term, particularly as they represent the largest share of the public sector wage bill. However, over the long-term salaries for the teaching profession could be better aligned to attract, motivate and retain bright and capable young staff. The government could also consider incentives, such as attendance based financial incentives, for teachers to teach in difficult area schools. These could be combined with appropriate teacher transfers and fixed-term appointments to schools in less popular regions.

Investing further on school-level education initiatives, through direct grants to schools, could contribute to improving teaching and learning. Increasing empowerment of schools would be in line with trends in middle and high-income countries, and would be consistent with the aim of the country to progress up the ladder of MICs. Sri Lanka's Programs for School Improvement (PSI) and School-Based Teacher Development (SBTD) are empowering schools to strengthen performance and improve education outcomes with significant impact. School grants could be targeted for activities under the PSI and SBTD to improve student learning and teacher performance.

Public spending could help improve education quality and reduce regional disparities in education outcomes through investments in Early Childhood Education. The most glaring education gap in the Sri Lankan education policy framework is the lack of public investment in early childhood education. ECE has a direct and powerful impact for all subsequent stages of education development, and into labor market performance. Investing in ECE is urgently needed in Sri Lanka.

There is also considerable private investment in education. This is especially the case for wealthier households. As the country grows, the ability and willingness to pay for education will increase. This will especially be the case for higher education. Creating an enabling environment for private investment in education, especially through the strengthening the quality assurance and accreditation system for higher education, will enable the country to increase investment in developing the higher education system.

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