

The Economic Case for Investing in Basic Education

Returns to Individuals, Society, and Impact on Youth Employment



Ji Liu, PhD

Adjunct Assistant Professor

Teachers College, Columbia University in the City of New York

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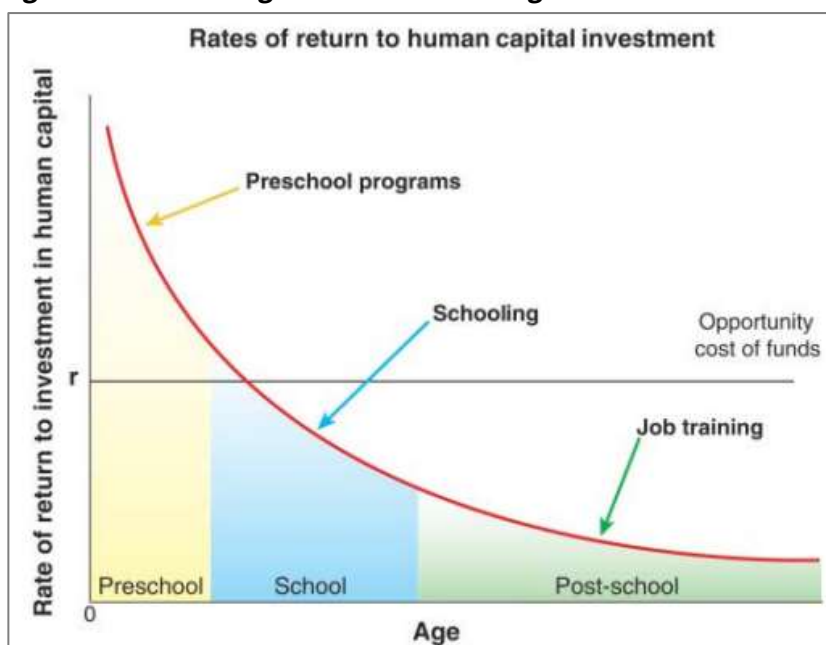
I. Overview

1. In our lifetime, we have witnessed the world's rapid transition into a globally-connected and knowledge-oriented network. This global economic, social, and information integration has strong implications in how the future of development is changing, in that globalization and automation are driving the emphasis on investing in people. More than ever before, global growth will be more dependent on the quality of human capital, as well as the innovation that it delivers. This process will become especially salient in the next decade because important economic, demographic, social, and political changes is arriving at accelerated speeds. As the fourth technology revolution continues to unfold at unprecedented rates, the world faces increased uncertainty about the future of development and unknown prospects of growth. At this pivotal moment, it is imperative to revisit how investing in people and creating enabling learning environments can produce meaningful benefits for individuals and bring about collective prosperity for communities around the world.
2. Quality basic education is the key to unlocking human capabilities, and can produce immense value for entire generations of people, and beyond. Experiences from around the world in the past several decades have shown that investing in education is among the most effective approaches to produce favorable employment and social outcomes (Education Financing Commission, 2016). By playing a fundamental role in boosting human capital, productivity, income, employability and economic growth, basic education holds immense promise in improving livelihoods for individuals, communities, and entire countries. For each person, education is a fundamental right: its attainment not only makes people happier and healthier, but also gives them more control and choice over life trajectories. This increased agency of life manifests itself as a reduction in risky behavior, higher life satisfaction, and greater happiness. High Quality basic education also empowers individuals with meaningful access to participating in their communities. At the society-level, education is the safeguard for social progress: it is the foundation for building well-functioning institutions and societies that value and promote trust, inclusion, and shared prosperity.
3. Importantly, investing in quality basic education is not just a priority for governments, but also should also be a strategic issue for the private sector, in that people are at the core of all business. To begin, both neo-classical and endogenous growth theories emphasize human capital as the common determinant of growth, and that the current consensus is that boosting the quality of education systems can contribute positively to enhancing firm growth and sustainability, by expansion in existing and new markets, innovations leading to new products and services, and accumulation of knowledge capital. The vast majority of the global talent pool and consumer market resides in developing countries, where substantive improvements in the quality of education system can lead to substantial human capital dividends, in the form of productivity gains and market-size growth. Further, deficiencies in workforce skills are associated with high opportunity costs of 'lost talents,' that are capable of trapping workers in low-wage unstable jobs, and limiting firms from realizing broader economic prospects from improved innovation, governance, and business environments.
4. In the past decade, information that examines the relationship between education and a range of outcomes has expanded greatly. To this end, the overarching goal in this report is to offer a high-

level synthesis on the current evidence on returns to education. This report focuses on basic education, broadly defined as formal education at the primary and secondary levels (ISCED 1, ISCED 2, ISCED 3). In most countries, basic education is a key segment of the national education system serving the majority of the population, where even small incremental improvements for individuals can lead to large aggregate benefits. However, while basic education enrolment is improving globally, less than two-thirds of primary school entrants worldwide reach lower-secondary completion (World Bank, 2017). UNESCO's (2012) projections show that more than 171 million people could be lifted out of poverty if they are to receive quality basic education to equip them with sufficient foundational skills to participate in the labor market meaningfully.

- Existing evidence indicates that returns to investment in basic education are systematically higher than returns to later-stage education and training (Heckman 2006; see Figure 1). However, countries continue to underinvest in basic education due to insufficient understanding of the high payoffs, constraints on fiscal budget, and the challenge of delivering system-wide improvements. As solution, this report embarks on synthesizing the expansive literature on the private and societal returns to investing in basic education, with the objective of incentivizing both public and private sectors to put investing in young people at the core of future strategies.

Figure 1. Diminishing returns to later-stage education investment



Source: [Heckman, 2006](#)

- In broad strokes, this report will attempt to answer three important policy-relevant research questions: (1) What is the economic case for investing in basic education, and why is it important? (2) What is the evidence on the estimates of returns to basic education? (3) What is the relationship between education attainment and youth employment outcomes? More concretely, the succeeding sections will synthesize the evidence by providing estimates on returns to schooling (education in years) and learning (cognitive and non-cognitive skills development) respectively, and categorize the returns literature according to private benefits (employability, productivity, income) and societal interests (growth, health, civic engagement).

II. Evidence on Returns to Basic Education

7. The economic case for investing in education is strong. Beyond being a fundamental right for individuals, education has the potential to affect positive change both monetarily-nonmonetarily and in private as well as societal realms: by empowering individuals to achieve more, generating trust and promoting inclusion within and across communities, and making entire populations healthier and happier. Private and societal returns to investment in education are substantial. The current consensus is that for the average individual, returns to receiving each additional year of educational attainment is approximately 10 percent in terms of increased future earnings (Colclough, Kingdon, Patrinos, 2010). Every dollar spent on early childhood and basic education yields approximately \$10 to \$15 return over a person’s lifetime in the form of higher earnings, while each additional year of education attainment equates a 10 percent GDP boost over the course of a 40-year period (Hanushek and Woessmann, 2008; Hanushek and Woessmann, 2011).

8. In Becker’s (1964) seminal discussion on human capital investment, he builds the economic argument advocating for investing in education based on large internal rates of return calculations, noting that the full return to schooling are huge, including non-monetary benefits as well as societal externality returns. Under Becker’s framework, the returns to education can generally be grouped into four broad categories: monetary private, non-monetary private, monetary societal, non-monetary societal (see Table 1).

Table 1. Matrix of returns to basic education, by type

	Private	Societal
Monetary	Higher probability of employment Greater productivity, higher earnings Better career growth	Higher aggregate productivity More rapid, sustained economic growth Poverty reduction
Non-monetary	Better health and longevity Improved family outcomes Greater resilience and adaptability More engaged citizenship Better choices, life satisfaction	Increased social mobility Better-functioning institutions Higher levels of civic engagement Greater social cohesion Reduced crime

Source: [World Development Report, 2018](#)

9. First of all, education enables students to acquire cognitive and non-cognitive skills that will propel future labor productivity and favorable later-stage life outcomes. In well-functioning labor markets, completing upper-secondary education can also reduce the likelihood of unemployment and being trapped in stagnant careers (Chetty, Hendren, Kline, Saez, 2014; Filmer and Fox, 2014). Secondly, education can lead to individual improvements in non-monetary benefits, such as personal health, well-being, family-planning, as well as promoting better resilience, adaptability, and satisfaction throughout one’s lifecycle (Duflo, Dupas, Kremer, 2015; Heckman, Stixrud, Urzua, 2006). Thirdly, accumulation of high-quality human capital is a strong determinant of at the societal-level, in the form of rapid and sustained productivity and economic growth, and can have positive impacts of

poverty reduction (Kruger and Lindahl, 2001; Hanushek and Woessmann, 2008; Barrow, 2013). Finally, a host of societal non-monetary benefits are also produced as a result of receiving more years of formal education. These societally important non-monetary benefits are often thought to be greater in early grades of formal education, where education attainment brings about a set of non-cognitive and behavioural changes beneficial to societies. Such returns include but are not limited to increased benefits of social mobility, civic engagement and social cohesion, and lower societal costs associated with less crime (see Milligan, Moretti, Oreopolous, 2004; Lochner and Moretti, 2004; OECD, 2010; Sondheimer and Green, 2010; Machin, Marie, Vujic, 2011; Madsen, 2014; Wantchekon, Klasnja, Novta, 2015; UNESCO, 2016). To the extent possible, the following two subsections will attempt to summarize the expansive body of empirical literature which provides rigorous estimates for returns to basic education globally, and organize the existing evidence by two main returns types: private and societal, with estimates information on education attainment and skills development gains respectively.

Private Returns

10. One of the most direct channels through which education improves livelihoods is by expanding individual economic and life opportunities. Education achieves this primarily by opening up future channels to additional schooling and training opportunities that can lead to a range of new options and possibilities in enhancing personal abilities and life trajectories (Heckman, Humphries, Veramendi, Urzua, 2016). By enrolling in formal education and obtaining more years of education, individuals acquire new human capital and develop new skills that help them participate in the labor market meaningfully, increase their outputs in the workplace, and boost their living conditions and satisfaction (Heckman, 2014). To this end, the following section will focus on synthesizing the existing evidence on returns to education attainment in years as well as different measures of skills development.
11. Globally, rigorous analysis computing comparable estimates across regions indicate that returns to education are positive and non-zero for all regions: on average, each additional year of education raises individual earnings by 8 to 10 percent (see Figure 2), with larger impacts for women at close to 15 percent in North America and Sub-Saharan Africa (Montenegro and Patrinos, 2014). In other words, six years of primary schooling yield wage increments between 60 to 80 percent, and completing 12 years of basic education from primary to secondary would translate to earning increases of more than 300 percent. Of the 139 economies included in the analysis, some countries exhibit extraordinarily high returns. For instance, returns to each additional year of education is highest in Rwanda (22.4 percent), South Africa (21.1 percent), Ethiopia (18.5 percent), Namibia (18.3 percent), and Burundi (17.3 percent) respectively. For SDC priority countries, the estimates are listed by levels of education in Table 2. Among all 26 SDC priority countries with available data, returns are higher for basic education than in tertiary education for 16 of them.

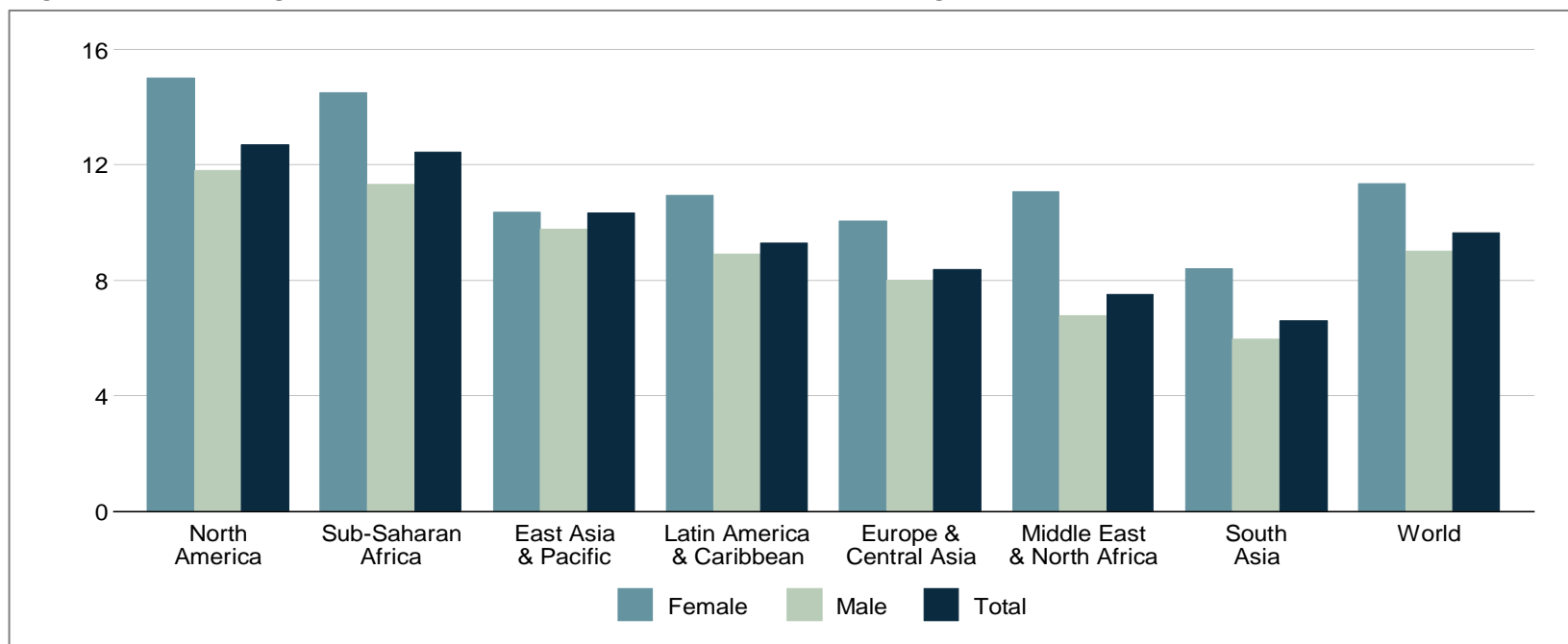
Table 2. Percent wage returns to education attainment for SDC Priority Countries, by level of education

	Data Year	Returns to Each Additional Year of Education	Returns to Primary Education (A)	Returns to Secondary Education (B)	Sum (A) + (B)	Returns to Tertiary Education (D)	Difference [(A) + (B)] - (D)
Afghanistan	2007	1.6	4.1	n/a	n/a	n/a	n/a
Bangladesh	2005	7.1	8.1	5	13.1	16	-2.9
Benin	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Bolivia	2012	7.3	8.6	3.1	11.7	13.6	-1.9
Burkina Faso	2003	13.3	15.6	13.2	28.8	21.3	7.5
Burundi	1998	17.3	12.9	21.3	34.2	21.8	12.4
Cambodia	2007	5.6	0.9	3.5	4.4	15	-10.6
Chad	2003	7.2	1.1	7.4	8.5	22.7	-14.2
Cuba	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Democratic Republic of Congo	2005	6.3	2.2	5.4	7.6	17.2	-9.6
Egypt	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Ethiopia	2005	18.5	32.7	16.2	48.9	17	31.9
Haiti	2001	8.3	23.8	14	37.8	14.8	23
Honduras	2011	12.4	12.1	10.7	22.8	19.8	3
Kenya	2005	16.9	17.6	15.9	33.5	22.4	11.1
Laos	2008	5.1	10.7	4.8	15.5	5.6	9.9
Lesotho	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Malawi	2004	5.2	6.3	5	11.3	23.7	-12.4
Mali	1994	13	21.2	12.4	33.6	19.3	14.3
Mongolia	2011	9.1	13.7	4.2	17.9	10.1	7.8
Mozambique	2008	14.1	20.2	13.3	33.5	17.7	15.8
Myanmar	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Nepal	2010	9.2	9.7	5.1	14.8	23.1	-8.3
Nicaragua	2009	6	4.8	2.3	7.1	14.5	-7.4
Niger	2011	14.6	38.7	6.3	45	29.7	15.3
Pakistan	2008	6.8	7.6	5.5	13.1	15.4	-2.3
Rwanda	2010	22.4	34.1	19.7	53.8	28.8	25

Somalia	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Swaziland	2000	14.8	n/a	11.2	11.2	23.5	-12.3
Tanzania	2011	16.6	14.6	15	29.6	19.4	10.2
Tunisia	2001	8.5	12.3	8.1	20.4	17.4	3
West Bank and Gaza	2008	3.8	28.7	0.2	28.9	5.5	23.4
Zambia	2003	19.2	13.6	12.1	25.7	24.2	1.5
Zimbabwe	n/a	n/a	n/a	n/a	n/a	n/a	n/a

Source: [Montenegro and Patrinos, 2014](#). Note: Only most recent data year is included in this table.

Figure 2. Percent wage returns to each additional year of education, by region



Source: [World Development Report 2018](#), with data from [Montenegro and Patrinos, 2014](#).

12. Regarding returns estimates by level of education (see Table 3), the results vary greatly by region. However, generally speaking, current estimates indicate that combined private wage returns for basic education (ISCED 1, 2 & 3) are at least on par if not more than that of tertiary education (ISCED 4) across most regions. Within basic education, primary education (ISCED 1) on average shows larger returns than secondary education (ISCED 2 & 3). In some cases, the returns are three times as large for primary education: for example in Middle East & North Africa, returns to primary education is approximately 16 percent relative to 4.5 percent at the secondary level. This trend is particularly salient for female students in Middle East & North Africa. However, in South Asia, the returns to basic education tend to be much smaller relative to other regions – in the range of 3 to 6 percent – whereas returns to tertiary education are much larger, at close to 20 percent.

Table 3. Percent of wage returns to each additional year of education, by level and region

	Total			Female			Male		
	ISCED1	ISCED 2 & 3	ISCED4	ISCED1	ISCED 2 & 3	ISCED4	ISCED1	ISCED 2 & 3	ISCED4
East Asia	13.6	5.3	14.8	9.5	6.4	15.8	12.6	5.8	15
Europe & Central Asia	13.9	4.7	10.3	11.9	6.4	12.2	12.1	4.2	9.8
Latin America & Caribbean	7.8	5.4	15.9	8.7	6.5	17.4	7.9	5.3	15.7
Middle East & North Africa	16	4.5	10.5	21.4	7.5	13.5	12.7	4.3	10.2
South Asia	6	5	17.3	3.8	6.2	23.3	4.7	3.9	16.6
Sub-Saharan Africa	14.4	10.6	21	17.5	12.7	21.3	12.5	10.1	21
World Average	11.5	6.8	14.6	13.2	8.2	16.1	10.1	6.7	14.4

Source: [Montenegro and Patrinos, 2014](#).

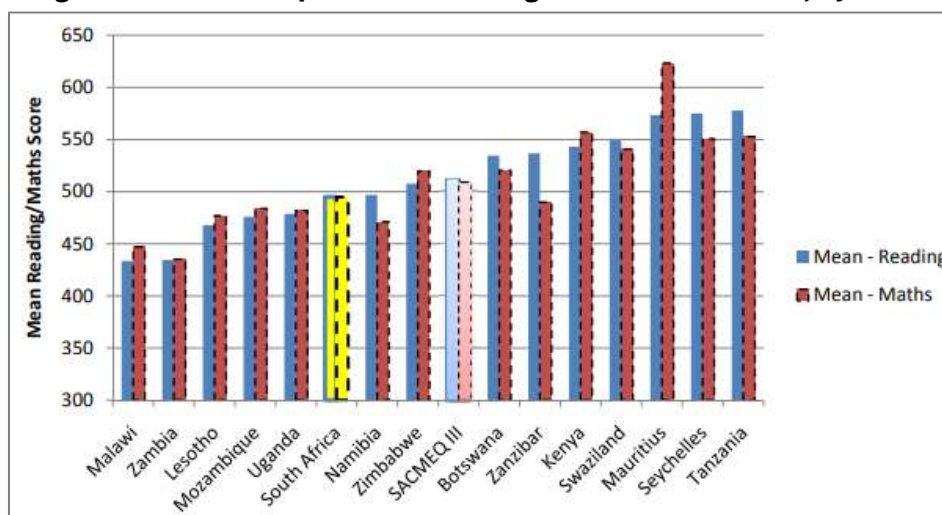
13. Large heterogeneity in returns by level of education and gender imply a number of issues. First, quality of education varies greatly by region. In some regions, returns can be twice as large as other regions for the same level of education in comparison. In some countries, it takes up to seven additional years of formal education for at least three-quarters of the population to reach basic literacy proficiency (World Bank, 2018). Second, education systems do not function in vacuum: broader economic, political, social cultural factors matter in determining the magnitude of returns. Importantly, low demand for education labor reduces the return to education, which is jointly determined by supply and demand for educated workers in the labor market. As a general rule of thumb, when investment climate is poor, labor demand for skilled labor is low because firms are not investing at optimal levels (World Bank, 2012). Third, discriminatory norms distort the benefits of education: prevailing norms on gender discrimination can have strong mediating effects on the returns to education for women. In addition to facing wage discrimination, women also encounter *glass ceiling* effects which obstruct them in advancing in their careers as fast or as far as men.
14. In terms of employability, the mapping between educational attainment levels and sectors of employment are very distinct, in that most people who work in agriculture and informal jobs often

never finish primary school, whereas those who finish upper-secondary school are substantially more likely to enter wage earning formal sectors (Filmer and Fox 2014). In Sub-Saharan Africa, for instance, close to 80 percent of prime age workers between 25 and 34 years old who work in agriculture have primary schooling or less and more than 40 percent have no education at all (Filmer and Fox 2014). In addition, research has also shown that educated workers are more effective at acquiring and processing job search information: schooling makes it easier for unemployed people to find reemployment (Fox, 2017). Generally, workers with more years of education are systematically more likely to enter stable, better paid, full-time, white-collar jobs, and less likely to be unemployed, lose employment, or stay unemployed for extended periods of time (Riddell and Song, 2011). After labor market entry, workers who obtained at least upper secondary education are also substantially less likely than less educated workers to lose their jobs, and if they do, they are more likely to find another job quickly (de Hoyos, Estrada, Vargas, Vicente, 2017).

15. Evidence also indicate that even in the informal sector, positive effects of education attainment on earnings can be strong. For those who work in the agriculture sector, farmers with at least primary education are significantly more likely to adopt farming technologies such as new seeds, tillage practices, fertilizer that increase per acreage crop output (Foster and Rosenzweig 1995; Abdulai and Huffman 2005). Receiving more education empowers farmers with the necessary skills and tools to take advantage of newly available technology, and present further learning opportunities to increase output. Besides agriculture, in countries with large informal sectors and high-levels of youth underemployment, education is also associated with higher earnings (Filmer and Fox 2014). A study of informal sector workers in seven West African capitals found that those who completed at least basic education could earn 20 to 50 percent more than those without basic education qualifications (Kuepie, Nordman, Roubaud, 2009).
16. As previously discussed, education attainment requires consequent skills development to achieve its promise of improving life and career outcomes. Importantly, a large body of literature has established that educational attainment accelerates growth through boosting workforce skills (Glewwe, Maiga, Zheng, 2014). For instance, there has been extensive longitudinal evidence documenting the chain of causation from school attendance to skills development to labor market outcomes (Filmer and Fox 2014). In Kenya, comparisons between secondary school graduates and non-graduates show sizable skills gap as large as .6 standard deviations on vocabulary and reasoning tests, which leads to approximately 50 percent higher probability for non-graduates to be working in unstable, low-skilled, low-wage career scenarios (Ozier, 2015). In this regard, quality of education – whether students are learning meaningfully in school – is a crucial determinant affecting how benefits from school attendance are realized for individuals, communities, and entire countries.
17. Intuitively, the extent to which individuals benefit from staying in school depends on whether they are learning and acquiring sufficient skills – cognitive, socioemotional, technical – to succeed on-the-job as productive workers, and more broadly in life as capable parents, responsible members of communities, and engaging citizens. All three types of skills are integral to realizing the promise of education. On the one hand, cognitive skills are essential for further learning. Foundational cognitive skills – basic literacy, numeracy, problem solving skills – act as scaffolding for the development of other higher-order cognitive and technical skills, which are necessary conditions for

supporting rewarding lives and careers. Generally, relationships among different types of foundational skills are strong, such that correlations between problem-solving skills with numeracy and literacy skills are .76 and .80 respectively in OECD countries (Hanushek, Schwerdt, Wiederhold, Woessmann, 2016). In Sub-Saharan countries, this joint-direction relationship between reading and math learning outcomes are also observed cross-nationally on the SACMEQ survey (see Figure 3). On the other hand, socioemotional skills are quintessential requirements for successful integration and growth in the workplace. Socioemotional skills include a range of behavior, attitude, and values – self-awareness, leadership, teamwork, self-control, and motivation – that are required to pair with cognitive and technical skills in order to effectively navigate challenging personal and inter-personal settings.

Figure 3. Relationship between reading and math outcomes, by country

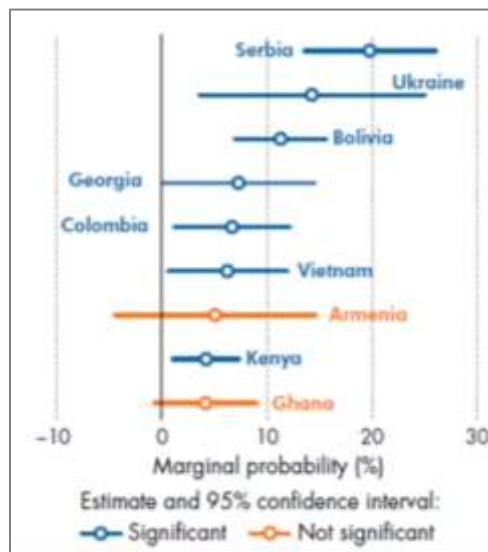


Source: [Spaull, 2012](#)

- Notwithstanding, firms are increasingly demanded to engage in value-added production on the frontier: producing more specialized goods, meet diversified global demands, and expand new markets – all of which requires countries to have highly skilled individuals. A strong and skilled labor force plays an indispensable role in national development and economic progress, and many countries are investing in strategies to expand skills development. At present, studies have shown that there are substantial returns to skills associated with receiving formal education. In analyzing OECD countries, Hanushek, Schwerdt, Wiederhold, and Woessmann (2016) find that each standard deviation increase in numeracy skills is associated with 18 percent hourly wage increase, with the range being 12 percent (Sweden) to 28 percent (United States). Using data of urban adults between 15 and 64 years old in Armenia, Bolivia, Colombia, Georgia, Ghana, Kenya, Ukraine, and Vietnam, simple measures of foundational skills such as reading and numeracy proficiency explain substantial portions of hourly earnings, even after controlling for years of education attained (Valerio, Puerta, Tognatta, Monroy-Taborda, 2016). On average, one standard deviation increase in literacy proficiency is associated with an hourly earnings increase between 6 (in Vietnam) to 14 percentage points (in Ghana), after accounting for education attainment. In other words, this result means that foundational skills proficiency (such as in literacy) are associated with substantial income differences beyond traditional measures of educational attainment.

19. Good quality education systems support broad skills development while students are in schools, yet many systems are contributing to critical skills shortfalls. Globally, it is estimated that close to 2 billion working-age adults (15-64) are lacking foundational literacy and numeracy skills, of them more than a quarter are young adults between 15 and 24 year old (World Bank, 2017). In Ghana and Kenya for instance, the concentration of low-skilled workers are close to 80 percent of the entire working-age population. Heterogeneity in education quality among education systems is also substantial. In some countries, the average lower secondary graduate is able to meet minimum literacy proficiency while it may take up to seven more years of formal education in other places. If students leave basic education prematurely without the foundational skills to read or add, such skills deficit will inevitably follow them into the labor market, and likely throughout their lives. Recent estimates from nine middle- and low-income countries show that meeting basic literacy proficiency is statistically associated with better job prospects, with 5 to 20 percent better chances of entering high-skilled white-collar jobs (see Figure 4). These increases translates to hourly earnings boosts of about 63 Serbian Dinar (approximately US\$0.62) and 94 Kenyan Shilling (approximately US\$0.91).

Figure 4. Marginal Probability of Entry into high-skilled white-collar jobs



Source: [World Development Report 2018](#), with data from STEP Skills Survey (2012-14)

20. In addition to cognitive skills development, there is also immense value in socioemotional skills. Research has already shown a steady decline in the labor input of routine cognitive and manual tasks since the 1980s, while labor input of non-routine cognitive analytic and interpersonal tasks has grown rapidly (Autor and Price, 2013). Cognitive and socioemotional skills have become increasingly complementary: the boost to earnings from possessing high levels of both cognitive and socioemotional skills has increased by about 6 percentage points per decade (Weinberger, 2014). This suggests that employers are now more likely to demand a mix of cognitive and socioemotional skills, as well as show preference for employees with thinking and behavioral flexibility on non-routine tasks. The availability of new technology also influences employers profoundly: three out of four employers anticipate that automation will require new skills in the near future (Deloitte, 2016).

21. Evidence also suggests that youth with more developed socio-emotional skills have improved life outcomes: they stay longer in school, perform better academically, are less likely to participate in

violence, and have higher incomes (Carneiro, Crawford, Goodman, 2007). While rigorous evidence is limited in developing countries, estimates from high-income countries show that each standard deviation increase in cognitive skills and socioemotional skills can translate to about 11 to 13 percent and 14 percent increase in wage income, respectively (Edin, Fredriksson, Nybom, Ockert, 2017). In the United States, Schanzenbach, Nunn, Bauer, Mumford, and Breitwieser (2016) show the increased probability of full-time employment associated with an one standard deviation increase in socioemotional skills has risen five-folds between 1980 and 2010, from .5 percentage points to 2.6 percentage points, while the earnings premium associated with more socioemotional skills more than doubled from 5 to 13 percent from 1979 to 1999.

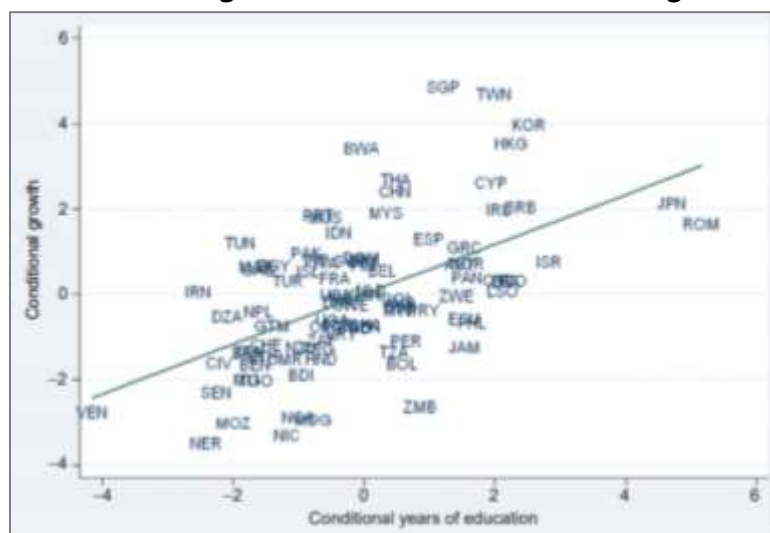
22. On a separate scale, non-monetary returns to education are also non-trivial – it can lead to longer, healthier lives and better life choices. Across countries, more educated individuals have significantly lower probabilities of suffering from chronic health conditions (Cutler and Lleras-Muney, 2007); they are also less likely to smoke, drink in excess, be overweight, or use illegal drugs (de Walque, 2007). When individuals live longer and more healthily, the value of education are enjoyed not only by the current generation, but also consequently passed on to their future offspring. Causal estimates from Turkey and Nigeria show that an additional year of education can reduce teenage fertility by .26 to .37 births per woman (Becker, Cinnirella, Woessmann, 2013; Gunes, 2016), and substantially increases their role and awareness in family-planning (Lavy and Zablotsky, 2011). Relatedly, skills improvements in socio-emotional well-being are also shown to help girls navigate complex decision-making involved in balancing work, education, and family formation in adolescence and young adulthood (Adoho, Chakravarty, Lundberg, Tasneem, 2014). In many country contexts, education can also substantially reduce most types of adult and late adolescence crime (Lochner, 2004; Deming, 2009), which in turn lowers aggregate private and societal costs stemming from violence and instability. Finally, many of education’s benefits are also sustained inter-generationally (Chetty, Hendren, Katz, 2016), which results in healthier and more educated offspring – leading to even bigger returns for families and communities. In Sierra Leone, a 10% boost in the proportion of mothers with secondary or higher education in a community improves the probability of attending junior secondary school significantly by 8%, while a 50% increase improves the likelihood of attending school by 45% - leading to educational outcome improvements (Kamanda, Madise, Schnepf 2016).

Societal Returns

23. Investing in education can have large monetary and non-monetary returns for communities and society at large. Education can promote aggregate economic prosperity as well as provide broad civic agency, through which educated citizens exhibit higher levels of political engagement, trust, tolerance, and support for more inclusive and just public institutions. Importantly, the availability of education determines the quantity and quality of human capital, which underpins future growth prospects for countries. There are also substantial spillover effects from having more years of average educational attainment at the society-level. Better and more educated citizens create demand for better governments and more civic engagement, which lead to societal progress in building effective and responsive public institutions.

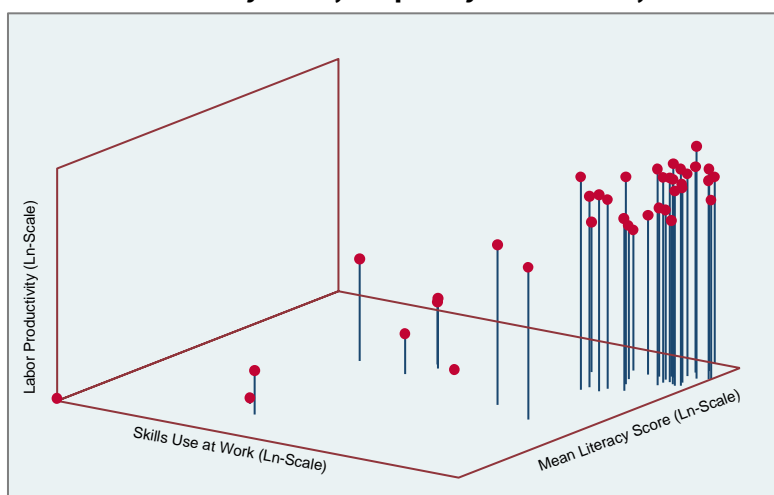
24. While the relationship between education and macroeconomic growth is likely complex, most research agrees that having a productive workforce is the pre-requisite for achieving broader economic prosperity. Theoretically, human capital can boost growth in at least two major ways: by directly increasing current output levels, and by catalyzing technological advances that drive sustained productivity growth. For countries at the technological frontier, higher-levels of education can create proactive environments for innovative breakthrough, while countries further away from the frontier benefit from increased education by absorbing and taking advantage of technology diffusion. These processes both lead to increases in labor productivity and can transition growth towards a higher equilibrium level of output. Cross-country analyses have shown that each additional year of education attainment is correlated with .58 percentage point higher long-term GDP growth at the national-level (Hanushek and Woessmann, 2008). In particular, growth regressions incorporating rich control variables on a sample of 88 countries indicate that primary education attainment is the most robust country-level factor affecting long-term economic growth (Sala-i-Martin, Doppelhofer, Miller, 2004).

Figure 5. Association between average educational attainment and long-run economic growth



Source: [Hanushek and Woessmann, 2010](#)

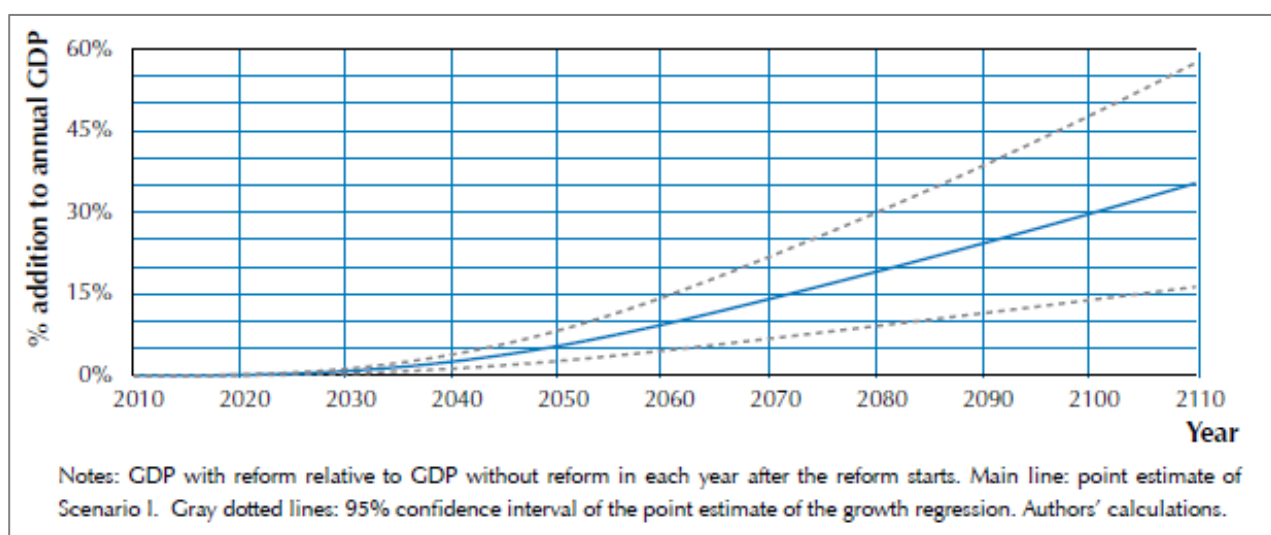
Figure 6. Correlations between literacy skills, frequency of skills use, and worker productivity.



Source: [World Development Report 2018](#), with data from PIAAC (2013) and STEP Skills Survey (2012-14). Note: each dot represents a country/economy.

25. A crucial channel through which education influences aggregate economic growth is through boosting worker skills development, utilization, and output. Cross-national results (see Figure 6) indicate that skills levels are both positively correlated with more frequent skills use in the workplace as well as higher worker productivity (World Bank, 2018). Simulation of the relationship between skills and economic growth indicates that a .25 standard deviation gain on average national PISA (Programme for International Student Assessment) scores can lead to a 1.5 to 4.6 percent potential increases in GDP growth over the medium-to-long term (OECD, 2010). In contrast, under-skilling can incur significant opportunity costs, in the form of unrealized economic growth. OECD (2010) estimates that bringing all countries up to the average skills level of Finland can recover unrealized gains in the order of US\$260 trillion.

Figure 7. Potential improvement in annual GDP with student learning outcome improvement of .25 standard deviations



Source: [OECD, 2010](#)

26. Further, there are not only direct impacts of education affecting aggregate workforce productivity, but the presence of externalities are also salient. Moretti (2004) finds that for each percentage point increase in the supply of college educated worker, the wages for high-school educated workers also increase by 1.6 percent and 1.9 percent for workers without high-school education. This means that there are non-trivial productivity gains due to concentration of high-quality labor, which has spillover benefits even for those with less education and skills.

27. Calculating the full returns to education requires considerations beyond just pecuniary benefits, especially given that theory and empirical evidence predict that non-monetary components contribute substantially to total welfare gains (Moretti, 2004). The large value of societal non-monetary returns to education generates additional incentive to invest in education from a public finance perspective, since in most education systems the public sector takes a majority role in funding primary and secondary educational institutions. These societal non-monetary returns often realize in the form of improved public health, civic engagement, social mobility outcomes and lower crime rates.

28. First, many studies have shown that being better educated result in improved health outcomes. In an analysis of 48 developing countries, each additional year of primary education attainment for young women is associated with approximately six reduced deaths per 1,000 live births, and the results are the largest where education and learning occur concurrently (Oye, Pritchett, Sandefur, 2016). Using compulsory education requirement changes in the United States as quasi-experiment, Lleras-Muney (2005) finds large public health benefits from education provision, in that each year of additional required schooling resulted in adult mortality reductions of 3.6% over 10 years, or gain of 1.7 years to life expectancy at 35 years of age. Such life expectancy gains can lead to both public health cost savings and productivity-related human capital benefits.
29. Second, a large class of literature in high income countries documents that people with more education consistently participate more in civic engagements than those with less education, because education increases their awareness and understanding of social and political issues, builds necessary civic skills for active community and societal participation, and empowers them economically to partake in civic activities (Campante and Chor, 2012). To illustrate, longitudinal data from the Perry Preschool Experiment in Michigan, and the STAR Experiment in Tennessee, both in the United States, indicate that obtaining more education leads to improvements in voting turnout (Sondheimer and Green, 2010). Further, education also increases trust, tolerance and civic agency. Analyses of OECD countries show that more education are related to more trusting and tolerance for strangers (Chzhen, 2013; Borgonovi and Burns, 2015).
30. Third, education can also reduce inequality especially when access and quality of education is equitable. Experiences around the world have shown that when education attainment coverage expands, people from disadvantaged socio-economic backgrounds typically benefit the most at the margin, and therefore income inequality subsequently decreases (Younger, 2003). A review of results from more than 60 empirical analyses underscore the positive effects of greater education coverage on income gap reduction, in particular: doubling primary enrolment rate from 50 to 100 percent is associated with an 8 percentage point boost in the share of income held by households in the poorest decile (Abdullah, Doucouliagos, Manning, 2015). Moreover, research on intergenerational mobility in the United States have shown that learning outcomes are especially salient in supporting later-life social mobility (Chetty, Hendren, Katz, 2016). However, in many countries, young people from poor, disadvantaged, marginalized groups are more likely to leave schools prematurely – missing the great promise of education – and find themselves without the necessary skills to jumpstart their careers (World Bank, 2017).
31. Fourth, empirical evidence has shown that educational attainment leads to reduced probability of engaging in risky behaviors such as crime, violence and drug use, which in turn generates huge societal savings from improved public safety (Anderson, 2014). For instance, raising primary school enrolment to 100% is estimated to reduce the likelihood of civil conflict by more than half (Thyne, 2006). Generally, there are two possible channels through which more education lowers crime rates: firstly, education increases earnings and hence drive up opportunity cost for committing crime; secondly, time spent in formal education substantially crowds out the amount of time available to young people for risk and crime-related activities. In the United Kingdom for instance, early school-leavers from upper-secondary education are three times more likely to be arrested for crime than those who continued schooling (Machin, Marie, Vujic, 2011). Similarly in the United States, more

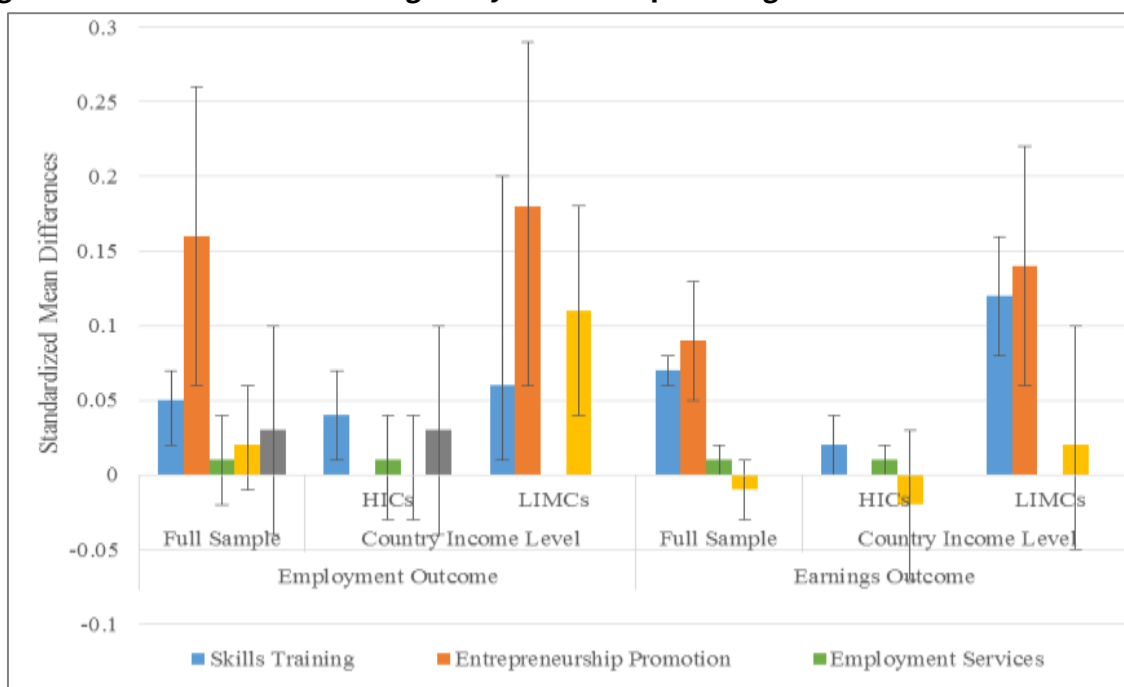
education significantly reduces the probability of incarceration – close to a quarter of black-white gaps in incarceration rates are attributable to differences in educational attainment – which translates to crime-related societal savings in the range of \$1,170-\$2,100 per additional high school graduate, or between 14 to 26 percent of the private rates of return (Lochner and Moretti, 2004)

III. Youth Employment

32. Drastic changes that have occurred in the nature of work and the accelerating pace of change in the labor market have serious implications for both firms and low-skilled workers (Bloom, Canning, and Fink 2010). At the macro-level, a common business concern for many firms is dealing with substantial skills shortage gaps (Manpower, 2017). At the micro-level, young people without essential foundational skills will inevitably face huge challenges as they transition into the labor market, and will also become those who are most vulnerable to automation-led technology disruptions. The duality of this macro-micro skills challenge demands high-priority action – improving quality of learning in basic education – because this is a critical period when foundational skills develop, which acts as scaffolding in further education and training. Without access to quality education, low-skilled young adults are more likely than others to be stuck in low-wage, low-productivity jobs, and ill-prepared to partake in the skills upgrading activities needed to access the jobs that emerge from the fourth industrial revolution. On the aggregate, this series of events can adversely impact individuals and trap entire communities and countries in low-growth, low-income equilibrium.
33. Educational attainment, or lack thereof, can have important consequences for the outlook of youth employment opportunities. As the World Development Report 2018 shows, leaving formal education prematurely without developing necessary foundational skills—then not receiving timely skills upgrading in the workplace—can have serious consequences for young people. UNESCO (2012) estimates that approximately one in eight young adults between 15 and 24 years old are neither in education nor employed, and the unemployment rate for young people are three times greater than prime-age workers. Consequently, while getting young people into school is imperative, and ensuring that they stay in school and accumulate the necessary human capital to succeed in later-life can be even more important. To this end, prioritizing the dual objective of ensuring students get to school and engage in learning meaningfully during basic education will maximize young people’s chances of successful labor market transitions.
34. In facing the youth unemployment crisis, many countries also consider alternative solutions such as short-term job training, or long-term vocational or technical education. Rapid growth in the program evaluation literature has expanded the evidence base for identifying what works in different contexts. For instance, the most common form of youth employment intervention has been the provision of short-term skills training, however, they generally show small impacts and low returns on investment (McKenzie, 2017). A systematic review of existing short-term training program evaluations conclude that only one-third of all impacts are statistically significant, and for those that do, average treatment effects are quite small – on average below .2 standard deviations (Kluve, Puerto, Robalino, Romero, Rother, Stoterau, Weidenkaff, 2016). In addition, another prominent issues is that most youth employment programs tackle youth skills deficiency and unemployment

from the supply-side, and their program effects are contingent on links to and conditions of the broader labor market, which can limit the returns to these supply-side interventions.

Figure 8. Short-term skills training rarely achieve impacts larger than .2 standard deviations



Source: Recreated from [Kluve, Puerto, Robalino, Romero, Rother, Stoterau, Weidenkaff, 2016](#)

35. As for vocational and technical education, returns in earnings can be substantial relative to that of general education attainment. However, locking students into a technical track too early can limit their career opportunities for a life time. Countries must consider the tradeoff between developing narrow vocational skills that expedite transition into the labor market in the short term and developing broader skills sets that can help workers adapt more easily to rapid technological change in the longer term. Young people need sufficient time in general education to develop the necessary foundational skills to learn meaningfully in technical training as well as develop the socio-emotional maturity to express their preferences. For example, findings from OECD countries show that vocational education offers initial labor market advantages, relative to general education; however, advantages dissipate with age while advantages for workers with general education kick in with age as their labor market outcomes improve over time compared to workers with vocational education qualifications (Hampf and Woessmann, 2016). In Poland, delaying enrolment tracking in technical education by one year improved average student performance in subsequent years (Jakubowski, Patrinos, Porta, Wisniewski, 2016). Therefore, repositioning technical and vocational education to ensure young people develop solid foundation skills and have access to pathways to continue their future education and training should be consider to maximize workforce potential over the long-run. Finally, it is important to point out that rigorous evidence on basic education and youth employability is substantively lacking in middle- and low-income context, and future research on this area in developing countries is much warranted given the importance of the topic and large policy interests.

IV. Conclusion

36. The large body of evidence synthesized in this report has illustrated that investing in basic education can have great potential for individuals, communities, and countries. The economic case for prioritizing basic education at the country-level is very strong: supporting quality improvements in primary and secondary education can enrich the lives of individuals and bring about broad societal progress, and there are huge opportunity costs in not doing so - in the form of unrealized economic growth. OECD (2010) estimates that boosting quality of basic education and bringing all member countries up to the average skills level of Finland can recover unrealized economic gains in the order of US\$260 trillion. The opportunity costs of failing basic education are enormous, and can create substantial downturn pressure on the prospects of achieving inclusive and sustainable growth.
37. Experiences from around the world have shown that investing in basic education is the best possible public investment. It not only affects positive change in employability, productivity, and income, but also creates room for favorable growth in health, well-being, social development, and life in general. To reiterate, completing six years of primary schooling yield wage boosts of around 80 percent, and completing 12 years of primary and secondary education combined can have the potential to triple expected earnings (Montenegro and Patrinos, 2014). Among all 26 SDC priority countries with available data, returns are higher for basic education than in tertiary education for 16 of them. More importantly, each additional year of primary education attainment for young women is associated with approximately six reduced deaths per 1,000 live births (Oye, Pritchett, Sandefur, 2016), and better quality basic education attainment is associated with many other social well-being benefits. Prioritizing basic education development as a key form of public investment that can benefit a large segment of the population and their offspring – more often those from disadvantaged backgrounds – through improving broad economic prospect, better social mobility, cohesion, safety, and public health.
38. In the coming decades, young people will be facing a radically different world, where more than two billion jobs will become obsolete or replaced by automation – human capital will become more important in the labor market than ever before. New types of economic, demographic, social, and political challenges will be arriving at accelerated speeds and with increased uncertainty. As solution, investing in quality basic education can have crucial impact in helping people adapt and survive in swiftly changing work and life environments. The economic case for investing in basic education is strong and that basic education is the vital link in preparing young people for successful and rewarding lives. Having sufficient and good quality basic education can lead to foundational skills development that provides critical scaffolding for furthering formal education, continuing learning in the workplace, acquiring new skills and meeting drastic shifts in the labor demand.

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Contact

Swiss Agency for Development and Cooperation (SDC)
Education Focal Point and Network
Freiburgstrasse 130
3003 Bern

Tel.: +41 (0)58 462 34 75

E-Mail: education@eda.admin.ch

Web: www.shareweb.ch/site/education

