

Discussion Paper.

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Education and Pro-Poor Growth.

How can education contribute to pro-poor growth?
Policy implications for financial cooperation.

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Preface

A well educated labor force seems to be a necessary condition for increasing labor productivity, generating income and reducing poverty. This paper revisits the empirical literature on education, growth and poverty reduction in order to investigate the role to be played by education policy in a pro-poor growth agenda. More specifically, the paper aims at: (i) investigating the link between education and pro-poor growth; and (ii) identifying the most efficient institutions and instruments for making educational systems more pro-poor and pro-growth. The paper is structured as follows:

Chapter one introduces the international debate on education policy and pro-poor growth, a debate which suggests some strategies and priorities for achieving more equitable and efficient educational systems in developing countries.

Chapter two is divided into two sections. Section 2.1 investigates (i) the impact of education on individual earnings; and (ii) specificities in estimated returns to education related to regions, income, gender and educational levels. Section 2.2 examines the impact of education on (i) subsequent economic growth; (ii) growth in income of the poor; (iii) intra-country differences in growth; and (iv) income distribution.

Chapter three explores the best practices and lessons learned from previously implemented approaches in financial cooperation. The chapter is divided into three sections. Section 3.1 addresses (i) the suggested criteria for prioritizing public investments in education among various levels of education (i.e. differences between social and private returns, and benefit-impact analysis), and based on this, the role to be played by the public and private sector in the various levels of education, regions and development levels; (ii) the debate on general/academic vs. technical/vocational education, as well as the potential benefits and risks involved in privately-provided technical/vocational education in developing countries. In addition, section 3.2 presents empirical evidence from several programme evaluations on several project-related issues: (i) the impact of school availability/school construction on enrolments of the poor; (ii) the link between school quality and individual earnings; (iii) the link between educational expenditures and outcomes; (iv) the effect of household and community involvement on educational opportunities for the poor; (v) the effect of school autonomy. Lastly, section 3.3 reviews (i) the strengths and weaknesses of approaches to education based on project, programme, and sector; and (ii) potential benefits, risks and lessons from previously implemented Sectoral Wide Approaches to education.

Finally, chapter 4 concludes with recommendations for financial cooperation programmes, particularly regarding the role of the private sector, sub-sectoral, and design-related considerations.

Abbreviations and acronyms

ADB	Asian Development Bank
BMZ	Federal Ministry for Economic Cooperation and Development
DAC	Development Assistance Committee (of OECD)
DFID	Department for International Development (UK)
DIE	German Development Institute
EDUCO	El Salvador's Community managed School Program
EFA	Education For All
EPF	Educational Production Function
FTI	Fast-Track Initiative
GDP	Gross Domestic Product
GTZ	German Agency for Technical Cooperation
IDD	International Development Department (University of Birmingham)
KfW	German Development Bank
MDG	Millennium Development Goal
OECD	Organisation for Economic Co-operation and Development (OECD)
PBA	Programme-based Approach
RIE	Returns to Investments in Education
SDP	Sector Development Programme
SIP	Sector Investment Programme
SWAp	Sector Wide Approach
TVET	Technical and Vocational Education and Training
UK	United Kingdom
UNESCO	United Nations Educational, Scientific and Cultural Organization
UNDP	United Nations Development Programme
WB	World Bank
WDR	World Development Report

Executive summary

A well educated labor force seems to be a necessary condition for increasing labor productivity, generating income and reducing poverty. This paper revisits the empirical literature on education, growth and poverty reduction in order to investigate the role to be played by education policy in a pro-poor growth agenda. More specifically, the paper aims at: (i) investigating the link between education and pro-poor growth; and (ii) identifying the most efficient institutions and instruments for making educational systems more pro-poor and pro-growth.

Micro approaches

Education provides the poor with specific knowledge and general reasoning skills (i.e. cognitive skills), which should increase their productivity and employment chances. In addition, education improves also nutrition and health, and may reduce fertility rates among the poor families. All these factors together (i.e. education, health, and nutrition) should increase individual productivity and employment chances for the poor, which in turn should facilitate the generation of income. Finally, education affects also individual's capability to participate in the decision-making and political process, which should improve accountability to governments and protect them against pro-rich public policy.

The described impact chains differ among sectors of production, regions, and groups of population. Additionally, the extent to which these effects are relevant and effective to reduce poverty depends on both social and political pro-poor commitment, institutional capacity and good governance aspects. The contribution of educational expenditures to pro-poor growth processes can be therefore reinforced and enhanced by providing the poor with: (i) complementary expenditures in other social services (e.g. health, and nutrition); (ii) targeted interventions; and (iii) more participation in the decision making process.

Overall private returns to investments in education are higher than social returns, regardless of the level of education and income. Investments in primary education yield the highest *private* returns to education regardless the level of income in the country. Additionally, overall the highest *social* returns were found when investing in primary education, with the only exception of high income-OECD countries, in which social RIE were found the highest to investments in higher education. Regionally, in most Sub-Saharan Africa private RIE were the highest to investments in secondary education, while in most Latin America, the Caribbean, and South- and East Asia, private RIE were the highest to investments in primary education

Macro approaches

Most authors find a positive correlation between the initial level of education (both quality and quantity) and the country's subsequent economic growth. Additionally, this correlation appears to be stronger in countries, in which the initial level of education is lowest indicating the crucial of educational expenditures to generating economic growth in most poor countries.

Regarding the impact of education on income-poverty, we conclude that: (i) unequal educational distributions contribute to unequal income distributions; (ii) higher levels of human capital positively affect growth in the income of the poor; and (iii) measures of education, which do not control for education quality are not found to be significantly correlated with growth in the income of the poor, but average income growth and growth in the income of the poor are positively correlated in a one-to-one relationship. Unfortunately, no work has been done on the direct impact of non-income factors (e.g. empowerment, vulnerability) on poverty reduction. Additionally, good governance, institutional development

and macroeconomic stability seem to be essential for generating pro-poor growth processes, and for reinforcing the impact of education on poverty reduction from a macro perspective.

Sub-sectoral approaches

Investments in education should be directed toward primary education, especially in low- and middle income countries, in which returns are the highest. On the one hand, public expenditures in education should be focused on general/academic basic education (i.e. primary and secondary education) in which differences between private and social returns to investment in education (i.e. private minus social returns) are the lowest, and in which the poor benefit the most from utilizing the educational system.

On the other hand, and regarding the provision of TVET, empirical evidence suggests that the private sector appears to be more efficient and dynamic (i.e. active in most relevant fields of training) than public institutions in most developing countries. Appropriately strengthened TVET can be a major source of necessary entrepreneurial skills for the most disadvantaged (i.e. the poor), skills that are necessary for generating self-employment and small enterprises in areas in which wage-labor is scarce.

Project-based approaches

With regard to project design, the mix of inputs for making learning more effective vary from country to country and school to school according to local conditions (e.g. culture, ethnics). Pro-poor projects in the educational sector should: (i) be located in the most underdeveloped regions and reach most disadvantaged groups of population (e.g. indigenous groups, women, the poor); (ii) focus on quality; (iii) ensure more household involvement and greater school autonomy; and (iv) emphasize women's education.

Program-based approaches

Concerning the form in which funding agencies should interact with governments in order to make educational support more pro-poor, the implementation of SWAp to education represents an opportunity to overcome the well-documented failures of previously implemented project and programme approaches. Reported experiences suggest that the implementation of SWAp to education provides an opportunity for developing more effective relationships between national governments and funding agencies.

Given the only short practical experiences, pro-poor effects from SWAp to education have not yet been well documented in these studies. However, two pre-requisites appear to be essential to successfully implement SWAp to education: (i) an adequate local institutional capacity (e.g. finance management-, management information- and monitoring and evaluation systems); and (ii) a strong local commitment to achieve poverty reduction in the country. Regarding the controversial question of implementing basket funding or budget support, the empirical literature remains still scarce. It is obvious that more work has to be done in order to know more about the pro-poor effects of different aid modalities from a sectoral perspective.

1. Introduction

The renewed interest in poverty reduction as the principal goal of development has generated intense economic research into the concept of pro-poor growth and pro-poor policies. As a definition, “*growth is pro-poor when it is labour absorbing and accompanied by policies and programs that mitigate inequalities and facilitate income and employment generation for the poor, particularly women and other traditionally excluded groups*” (ADB, 1999). A pro-poor growth strategy entails the removal of institutional and policy-induced biases against the poor, as well as the adoption of direct pro-poor policies (Kakwani and Pernia, 2000). For instance, adequate public spending on basic education, health and family planning services, improved access to credit and the promotion of small and medium enterprises should positively affect the poor and may be found in a pro-poor agenda.

The World Development Report (WDR) 1990 “*Poverty*” proposed the first poverty² reduction strategy, which was based on: (i) *promoting labour-intensive growth* through economic openness and investment in infrastructure; and (ii) *providing basic services to poor people* in health and education, which was an important step for the subsequent pro-poor policy debate. Later on, the WDR 2000/2001 “*Attacking Poverty: Opportunity, Empowerment, and Security*” proposed a strategy for attacking poverty based on three key principles: (i) promoting opportunity by stimulating economic growth, making markets work better for poor people and building up their assets; (ii) facilitating empowerment by making state and social institutions more responsive to their needs; and (iii) enhancing security by reducing vulnerability and the risks of events such as wars, disease, economic crises and natural disasters. More recently, more emphasis has been given to pro-poor effects from services delivery, and the relationship of accountability between policymakers, providers, and citizens (i.e. the poor). For instance, the WDR 2004 presents an analytical and practical framework for “*making services work for the poor people*”.

Finally in 2005, the World Bank published the so-called Operationalizing Pro-Poor Growth (OPPG) program, which was initiated in 2003 by the AFD, BMZ (KfW/GTZ), DFID and the World Bank to better understand the options facing policy makers to increase the impact of growth on poverty reduction and how they vary depending on policies and country conditions.

² The World Bank defines the global absolute poverty line as \$1/day per capita. Some authors claim that the global poverty line should be inferred by linking income or consumption to the required habitual or long-term intake of food, or more precisely, its energy or caloric content for an individual to be adequately nourished (Srinivasan, 2001). It also has been argued that the \$1/day global poverty line, in its very simplicity, is misleading because it seems to sweep away the problems (Deaton, 2001)

Regarding educational policy, the 1980 World Bank sector policy paper (WB, 1980a) on education first identified the problems faced by educational systems in developing countries. The suggested policy framework to promote educational development was based on five broad principles: (i) universal basic education, (ii) the provision of educational opportunities regardless of sex, ethnic background or social and economic status, (iii) maximum internal efficiency through the management, allocation and use of resources available for increasing the quantity and improving the quality of education, (iv) education related to work and environment, (v) building and maintaining institutional capacities to design, analyse, manage and evaluate programs for education and training. Later on the 1995 World Bank report on priorities and strategies on education emphasizes non-monetary effects (e.g. health, nutrition, civic participation...). It suggests that education – especially basic (i.e. primary and lower-secondary) education – helps to reduce poverty by increasing the productivity of the poor, reducing fertility and improving health, and by equipping people with the skills they need to participate fully in the economy and society.

More recently, the World Bank education sector strategy (WB, 1999a) suggests an educational policy framework based on three pillars: (i) access (students ready to learn, access to provision, and supportive learning environment); (ii) quality (e.g. relevant curriculum, motivated staff, teaching and learning process); and (iii) delivery (good governance, adequate resources, and sound evaluation). The principal policy message is that educational interventions should respond to the local needs of clients and facilitate their participation in design and implementation, taking into account local culture and traditions. In this context, funding agencies should treat education comprehensively and work selectively across all areas depending on each country's priorities.

In March 1990, delegates from 155 countries as well as representatives from more than 100 organizations adopted in Jomtien (Thailand) the World Declaration on Education for All, which developed a framework intended to serve as a reference and guide for national governments and development agencies. The ultimate goal was to meet the basic learning needs of all children and adults. In addition, it suggests establishing intermediate goals in form of specific targets within national and sub-national plans for educational development. Countries should set their own targets for the 1990s in terms of the some proposed dimensions.

Later on, in the World Education Forum held in Dakar (Senegal), in April 2000, the governments and development agencies re-affirmed the vision of the World Declaration on

Education for All, and adopted the so-called Dakar Declaration (UNESCO, 2000), in which they committed themselves to the achievement for the six EFA goals. These goals can be summarized as follows: (i) expand and improve early childhood care and education, especially for the most vulnerable and disadvantaged children; (ii) ensure that by 2015 all children, particularly girls and children in difficulties, and those belonging to ethnic minorities, have access to and complete, free and compulsory primary education of good quality; (iii) ensure that the learning needs of all young people and adults are met through equitable access to appropriate learning and life-skills programmes; (iv) achieving a fifty percent improvement in levels of adult literacy by 2015, especially for women, and equitable access to basic and continuing education for all adults; (v) eliminate gender disparities in primary and secondary education by 2005, and achieving gender equality in education by 2015; (vi) improve all aspects of the quality of education and ensure excellence of all so that recognized and measurable learning outcomes are achieved by all, especially in literacy, numeracy, and essential life skills. Following the Dakar Declaration, the heads of State and Government gathered at the United Nations, in September 2000, adopted the United Nations Millennium Declaration, in which the so-called Millennium Development Goals (MDG) were defined.

In March 2002, in Monterrey (Mexico), again the heads of State and Government resolved to address the challenges of financing for development around the world, particularly in developing countries. The main goal of the Monterrey Declaration is to eradicate poverty, achieve sustained economic growth and promote sustainable development. In addition, it suggests intensifying efforts to harmonize their operational procedures to increase aid effectiveness. Following the consensus reached at Monterrey, The Education for All (EFA) Fast-track Initiative (FTI) was established in 2002, which represents an evolving global partnership of developing and donor countries and agencies to support global EFA goals by focusing an accelerating progress towards the EFA goal of universal primary school completion for boys and girls alike, by 2015 (WB, 2004b). The FTI is a country-driven process, and endorsement requires an approved national poverty strategy, a sector-wide program for education, and an agreement to monitor benchmark indicators.

On February 2003, the international development community, gathered in Rome reaffirmed the Monterrey Declaration and adopted the Rome Declaration on Harmonization, in which in order to improve the effectiveness of development assistance, the importance of harmonizing the operational policies, procedures, and practices of development agencies with

those of country systems was emphasized. More recently, on March 2005, the Paris Declaration on Aid Effectiveness reaffirmed the commitments made at Rome to harmonise and align aid delivery.

From a national perspective, the German government has recently showed its commitment to the MDGs, and to halve the proportion of people living in extreme poverty by 2015. To this end, it adopted the Programme of Action 2015 in April 2001. More recently, the German government has enunciated its commitment to generate pro-poor growth processes (BMZ, 2006). Regarding the MDG2, the German Development cooperation concentrates, in particular within the framework of the so-called EFA-FTI, on changing the structural framework and promoting sector wide approaches. In addition, and within the educational sector, the report suggests the following interventions: (i) the creation of incentives, such as safe schools, medical care for boys and girls, school meals, education subsidies, education voucher systems, grants, and scholarships for pupils; (ii) the promotion of the involvement of parents and the community in school development and the legal reform of the schools (i.e. community or state schools); and (iii) the construction and rehabilitation and outfitting of gender-appropriate schools and teacher training centres. In the following chapters we will review available results from implemented projects and programmes in these areas.

2. Returns to investments in education: empirical results and suggested impact chains

2.1. Micro approaches: effects of education on individual earnings

2.1.1. The theory of human capital and estimated returns to education

Much of the work done by economists on differences in worker skills has been directed at determining average labour market returns to additional schooling. The idea is that investments in education, like all investments, can be analysed in terms of their rates of return. During the 50s and 60s the theory of human capital emerged, which provided a methodology for estimating rates of return to investments in education (Mincer, 1958; Becker, 1962; Schultz, 1960, 1961, 1965; and Becker and Chiswick, 1966). All these models were primarily based on the idea that if the only cost of attending an additional year of school were the opportunity cost of students' time, and if the proportional increase in earnings caused by this additional schooling were constant over their lifetime, then an individual's earnings would be exponentially related to his or her years of schooling, and the slope of this relationship could be interpreted as the rate of return to investment in education (RIE). In addition, schooling decisions are made by equating two present values of earnings flows: one with a

higher level of schooling and one with the actual level of schooling. Each person is assumed to maximize his or her economic welfare by investing an appropriate amount in his or her own human capital, and the distribution of earnings will be determined by the distribution of investments and their rates of return. An update of returns to investments in education can be found in Psacharopoulos and Patrinos (2002) and at the World Bank's database on RIE. Figures 4-7 present estimated RIE by educational and income level, and by region.

Figure 4 shows both private and social RIE by levels of education and income. Note that overall private RIE are higher than social RIE, regardless of the level of education and income. Additionally, when analysing private returns by levels of income we identify two general patterns: (i) the pattern observed in most low-, low-middle-, and high income (OECD) countries, in which private RIE were found to be the highest for investments in primary education followed by tertiary and secondary, respectively; (ii) and the pattern observed in most upper-middle- and high income (non-OECD) countries, in which private RIE were found to be the highest for investments in primary education, but at this time followed by secondary and tertiary. Moreover, when investigating social RIE by level of income, we find that (i) in low-, upper-middle-, and high income (non-OECD), social RIE were found to be the highest to investments in primary education followed by secondary and tertiary; (ii) in low-middle income social RIE were found to be the highest also to investments in primary but at this time followed by tertiary and secondary education; and (iii) in high-income OECD countries, social RIE were found the highest to investments in higher education.

In a regional perspective, figures 5-7 show that in most Sub-Saharan Africa (4 out of 11 cases) private RIE were the highest to investments in secondary education, indicating that secondary education is crucial in explaining the wage pattern in these countries. Alternatively, in most Latin America, the Caribbean, and South- and East Asia (7 out of 19 and 4 out of 8), private RIE were the highest to investments in primary education followed by tertiary and secondary, respectively.

A further question concerns the reliability of the estimated coefficients. The classical Mincer-Becker-Chiswick equations control for differing schooling quality neither between nor within countries. It is obvious that the effect of years of schooling on subsequent wages crucially depends on school quality and learning conditions. The most common approach to controlling for schools' quality uses test scores as a measure of cognitive skills, which in turn represents a proxy for quality education. There is an abundance of literature on this issue. For instance, Boissiere et al. (1985) studied the impact of years of schooling on urban wages in

Tanzania and Kenya after controlling for differences in experience, innate ability³ and education quality. They found the following: (i) secondary education increased wages in Kenya by about 19%; (ii) years of education contributed to wage differences of about 11.3% and 8.3% in Kenya and Tanzania, respectively; and (iii) education quality as measured by test scores explained about 50 and 19 % of wage differences in Kenya and Tanzania, respectively. Similarly, Glewwe (1996) investigated the relationship between years of schooling and wages in Ghana⁴. He found that (i) in the private sector, reading skills had a statistically significant and positive impact on wages (2.9-3.4%), while (ii) in the public sector, mathematics was found to have a statistically significant and positive effect (2.4-3.0%). Additionally, Jolliffe (1998, 2004) examined the impact of cognitive skills (mathematics and English) on rural household income in Ghana. He found test scores (i.e. education quality) to be positively associated with total and off-farm income. Finally, Moll's (1998) study on South African workers found that (i) schooling has a positive impact on wages, which depending on the method of estimation⁵ ranged from 1-3%, 2-10%, 59-62% for primary, secondary and tertiary education, respectively; (ii) the overall impact of test scores (i.e. school quality) ranged between 8 and 10%; (iii) when splitting total score into its comprehension and computational components, only the latter is significant, ranging from 21% to 30%.

Most recently by using household survey data from Honduras, Bedi and Edwards (2002) investigated the importance of school quality as a determinant of earnings⁶ and found a positive relationship between both variables. More specifically, they suggested that a reduction in the student per teacher ratio and an increase in the tables per student by one standard deviation would lead to an increase in earnings by 3.3-4.3% and 2.7-4.5%, respectively. In addition, males educated in municipalities with better school quality would be more likely to be rewarded with higher earnings. Moreover, increases in school quality would have a stronger effect on lower percentiles of the conditional earnings distribution, such that the effects of school quality appear to be stronger for less able individuals.

To conclude, firstly, private RIE to education were found to be higher than social regardless levels of income and education. Secondly, overall both private and social RIE were the highest for investments in primary education. Finally, education quality seems to be

³ Measured by Raven's test scores

⁴ By using the Ghanaian Living Standard Survey (GLSS) 1988-89

⁵ Ordinary Least Squares, Least Absolute Deviations, Huber's M-estimator, and Least Trimmed Squares/Re-weighted Least Squares.

⁶ Their measures of school quality capture teacher training, school infrastructure and school crowding.

crucial in explaining subsequent wages and the non-inclusion of quality measures as control variables should bias results from standard Mincer-Becker-Chiswick equations.

2.1.2. Non-monetary effects

Lack of education makes the poor vulnerable. The majority of the micro-literature suggests a strong link between both quantity (i.e. years of schooling) and quality (i.e. test scores) of education and individual wages in the developing world, especially at secondary and tertiary levels. However, education not only imparts specific knowledge and develops general reasoning skills (i.e. cognitive skills), but it also induces changes in beliefs and values, as well as attitudes toward work and society.

Furthermore, the lack of information, education, and skills contribute to limited confidence and together they reinforce powerlessness, voicelessness and marginalization of the poor within society (WB, 1999, 2000a, b). Education should enhance empowerment, which represents the expansion of assets and capabilities allowing the poor to participate in, negotiate with, influence and hold accountable institutions that affect their lives. For instance, Glaeser et al (2006) empirically test the relationship between education and civic activity. They suggest that education should lead to higher participation in social activities, including politics. More specifically, education should increase the benefits (or lower the costs) of political engagement.

Finally, education improves also health and nutrition in society, and especially women's education. The reported country experiences (WB, 1980b) suggest that (i) children were found to be less likely to die the more educated their mothers are, even allowing for differences in family income (e.g. Bangladesh, Kenya, and Colombia); (ii) for any given income level, the higher the mother's education the better the family was fed (e.g. Brazil); (iii) education delays marriage for women, partly by increasing their chances of employment; (iv) educated women are more likely to know about and use contraceptives; and (v) educated women are more likely to send their children to school.

2.1.3. Impact chains from a micro perspective

Figure 1 presents observed impact chains between education and poverty reduction from a micro perspective. It shows that not only increased quantity and quality but also a more equitable distribution (e.g. among the most disadvantaged population groups -and least developed areas) of education are crucial for making educational investments more pro-poor.

On the one hand, education provides the poor with specific knowledge and general reasoning skills (i.e. cognitive skills), which should increase their productivity and employment chances. On the other hand, education improves nutrition and health, and may also reduce fertility rates among the poor families. All these factors together (i.e. education, health, and nutrition) should increase individual productivity and employment chances for the poor, which in turn should facilitate the generation of income. Moreover, education affects also individual's capability to participate in the decision-making and political process, which should improve accountability to governments and protect them against pro-rich public policy (e.g. education policy).

The described impact chains differ among sectors of production (e.g. agriculture, non-farm rural sector, industry, services and commerce), regions (e.g. rural, urban, underdeveloped, big cities), and groups of population (i.e. the poor, non-poor, women, indigenous groups). Additionally, the extent to which these effects are relevant and effective to reduce poverty depends on both social and political pro-poor commitment, institutional capacity and good governance aspects. The educational contribution to pro-poor growth processes of educational expenditures can be therefore reinforced and enhance by providing the poor with: (i) complementary expenditures in other social services (e.g. health, and nutrition); (ii) group-specific interventions (e.g. women); and (iii) more participation in the decision making process (i.e. empowerment).

Group-specific interventions as part of a pro-poor agenda should favour those groups among the poor who do not benefit from educational expenditures because they suffer from open or hidden discrimination and/or because their “economic style” is different from that of the majority (e.g. women or ethnic minorities). Pro-female policies are supposed to be natural elements of a pro-poor growth strategy. Educated, healthy women are more able to engage in productive activities, earn higher incomes and enjoy greater returns on schooling than are uneducated women who suffer from poor nutrition and health, or are victims of domestic violence. Educated women give also greater emphasis to schooling their own children, thereby improving productivity of the next generation. Additionally, educational expenditures especially designed for enhancing educational outcomes in minority ethnic groups are crucial to integrate these vulnerable groups in the society.

2.2. Macro approaches: does education generate pro-poor growth?

2.2.1. Education and economic growth theory

Economists typically embed education in the more general concept of human capital, which also includes other human-related aspects such as health or nutrition. Human capital has played a different role in economic growth theory. In the neoclassical growth model (Solow, 1956) no special role is given to human capital in the aggregate production function of the economy⁷. In endogenous growth models, by contrast, human capital plays a more central role. For instance, Nelson and Phelps (1966) suggested that a larger stock of human capital facilitates a country's absorption of new products or ideas that have been discovered elsewhere. Therefore, a follower country with more human capital will tend to grow faster because it will catch up to the technological leader more rapidly. Two important contributions to endogenous growth theory were made by Lucas (1988) and Romer (1990). On the one hand, Lucas's model asserted the potential spillover-effect of human capital for the whole economy. On this model, an increase in the quantity of human capital per person in a country will tend to lead to higher rates of investment in both human and physical capital, and hence, to higher per capita growth. On the other hand, Romer's model suggests that education is the key input to the research sector, as education generates new products and thus crucially determines technological progress. In other words, in countries with greater initial stocks of human capital (or education), new technologies will be introduced at a faster rate and the country will thus tend to grow faster.

From an empirical perspective, the majority of the macro-literature has focused on the effect of the initial level of education by levels (i.e. primary, secondary and tertiary) and gender on subsequent economic growth in per capita GDP. It seems to be an empirical fact that the initial level of education, especially males' secondary education, has a positive impact on subsequent economic growth. For instance, Barro (1996) found a positive correlation between growth rates in real GDP per capita and years of schooling at the secondary and higher levels of education for males aged 25 and over. He also found that an extra year of post-primary education for males raised the growth rate by 1.2 percentage points per year. Alternatively, Hanushek and Kimko (2000) found a positive correlation between economic growth and education quality, measured in terms of international test performance. More specifically, they suggest that a standard deviation in performance of one percentage point in mathematics and science skills translates into an average annual real growth rate of more than

⁷ Only in 1992 the Solow model was extended by Mankiw et al. to include human capital.

one percentage point. Barro (2001) draws similar conclusions from the study of international test performance. Furthermore, Krueger and Lindahl (2001), by removing the assumptions of cross-country homogeneity and linearity, found a positive correlation between education and subsequent economic growth, especially in countries with the lowest levels of education. For countries in the middle of the education distribution, growth was typically unrelated or inversely related to education, and for countries with a high level of education growth was typically inversely related to the level of education.

Finally, some potential econometric problems have been pointed out in the literature, which in turn could bias the results on education's impact on growth derived by macro-empirical analysis. One of the most well-known problems refers to causality, i.e. whether the observed positive correlation between education-proxies (e.g. years of schooling or school enrolments) and growth in real GDP per capita is the result of schooling causing growth or growth causing schooling. For instance, Bils and Klenow (1998, 2000) tested causality and argued for a reverse chain of causation from expected growth to schooling, which appears stronger than a chain from growth to schooling. However, the experiences reported in India and China by Ravallion and Datt (2002) and Fan et al. (2004), in which higher levels of education are positively associated with higher growth rates and lower poverty, suggest that education may influence growth rather than the other way around.

To conclude, the macro empirical evidence on the impact of education on growth finds that the initial level of education (both quality and quantity) crucially affects the country's economic growth. Additionally, this correlation appears to be stronger in countries, in which the level of education is lowest, indicating the crucial need of educational expenditures for generating economic growth in most poor countries.

2.2.2. Education and the poor

In the context of pro-poor growth, two debates emerge from a macro perspective. The first concerns how to define and measure pro-poor growth, an issue which has been analysed recently by several authors (e.g., Kakwani and Pernia, 2000, Ravallion and Chen, 2003, Kakwani et al., 2004, Klump and Miralles, 2005, and Essama-Nssah, 2005). The second strand of debate is more important for our purposes, and concerns the need of economic policy to prioritize among both pro-poor and pro-growth policies. This second debate is becoming more and more important given that governments face constraints on budget resources and therefore cannot afford a full pro-poor growth agenda. A breaking point in the policy-related pro-poor growth debate has been made recently by Dollar and Kraay (2002).

They investigated the factors explaining growth in the incomes of the poorest quintile of the income distribution and found that average income in the bottom quintile tends to rise proportionately with average incomes. In addition, and this is somewhat disappointing for our purpose here, they did not find a statistically significant correlation between education, measured by years of secondary education, and growth rates in the income of the poor. These results provide strong support for placing standard growth-enhancing policies at the centre of any effective poverty reduction strategy.

In contrast, Gundlach et al. (2004) found that a higher stock of education increases the income of the poor – not only through its effects on average income but also through its effect on the distribution of income. Unlike Dollar and Kraay, who used years of schooling as a measure of the level of education, Gundlach et al. (2004) constructed a measure of human capital based on the micro literature and controlling for education quality. Given the suggested positive effect of education on average income and income distribution, education policy emerges as a win-win policy that will reduce both income poverty and income inequality in the developing world. Gundlach et al.'s (2004) findings bring education policy to the fore as a policy key for pro-poor growth. They found that a 10% increase in the stock of quality-adjusted human capital per worker would increase the average income of the poor by an additional 3.2 %. Note that both studies on the impact of education on growth in the income of the poor use different measures of education. While Gundlach et al (2004) do control for both education quantity (i.e. years of schooling) and quality⁸, Dollar and Kraay do control only for education quantity (i.e. years of schooling) and do not for education quality.

Regarding income inequality, education has been ascribed a potential equalizing effect on income distribution. This argument suggests that investments in education will be also pro-poor if they increase the income share of the poor in overall income distribution or reduce inequalities between developed and underdeveloped areas. Among the sparse empirical evidence, De Gregorio and Lee (1999) analysed the period between 1960 and 1990 and found that education factors, measured as higher attainment and a more equal distribution of education, play a significant role in reducing inequalities in income distribution. They found that inequality of schooling, measured as the standard deviation of educational attainment of the population, has a significantly positive effect on income inequality. In addition, Birdsall and Londoño (1997) also observed a negative correlation between initial inequalities in the distribution of human capital and subsequent growth in the incomes of the poorest quintile in

⁸ An index developed by Hanushek and Kimko (2000).

a sample of Latin American countries. Finally, Lundberg and Squire (2003) found that education, measured by initial level of female literacy, was correlated both with faster growth and lower income inequality. They suggest that expanded education will certainly improve income distribution and may also enhance growth.

From a country perspective, Ravallion and Datt (2002) drew on 20 household surveys in India's major states spanning the period from 1960 to 1994, exploring why economic growth has been more pro-poor in some states than in others. Their findings suggest that inter-state differences in the impact of a given rate of non-farm economic growth on poverty reflect observed different initial conditions, e.g. low farm productivity, low rural living standards relative to urban areas, greater landlessness in rural areas and poor basic education and health. Furthermore, Fan et al. (2004) used provincial-level data for 1953-2000 to investigate the effects of different types of government expenditure on growth and rural poverty in China. Their results show that government spending on agricultural R&D and irrigation, infrastructure and rural education all contributed to agricultural productivity growth and reduced rural poverty. In addition, government expenditure on rural education had the largest impact on poverty reduction and a very high return to growth in both agriculture and the non-farm sector.

2.2.3. Impact chains from a macro perspective

To conclude this section on macro approaches, figure 2 summarizes the observed educational macro impacts.

Firstly, and regarding the impact of education on economic growth, the macro empirical literature find that: (i) the initial level of education (both quality- and quantity-based measures of education) are positively correlated with the country's subsequent economic growth (Barro, 1996, 2001; Hanushek and Kimko, 2000); (ii) this positive correlation between initial education and subsequent economic growth appears to be stronger in countries, in which the level of education is lowest, indicating the crucial need of educational expenditures for generating economic growth in most poor countries (Krueger and Lindahl, 2001); and (iii) poor basic education contributes to explain intra-state or intra-country growth of income differences (Ravallion and Datt, 2002; Fan et al., 2004).

Secondly, and regarding the impact of education on income-poverty, the empirical literature concludes that: (i) unequal educational distributions contribute to unequal income distributions (Lundberg and Squire, 2003; De Gregorio and Lee, 1999; Birdsall and Londoño,

1997); (ii) higher levels of human capital⁹ positively affect growth in the income of the poor (Gundlach et al. 2004); and (iii) measures of education, which do not control for education quality are not found to be significantly correlated with growth in the income of the poor, but that average income growth and growth in the income of the poor are positively correlated in a one-to-one relationship (Dollar and Kraay, 2002). Unfortunately, no work has been done on the direct impact of non-income factors (e.g. empowerment, vulnerability) on poverty reduction.

A further important question relates the necessary economic and political environment, which should be met in order to observe such positive effects of education on pro-poor growth. Good governance, institutional development and macroeconomic stability seem to be essential for generating pro-poor growth processes, and for reinforcing the impact of education on poverty reduction. Good governance is the most important institutional prerequisite for pro-poor growth, as it is for growth in general. The goal of making the institutions respond much more to the interests of the poor may conflict with the capacities of developing countries to secure good governance even at the sub-national level. Improving governance and institutions requires consolidation of the rule of law, strengthening justice and personal security, greater transparency and efficiency in public expenditures, promotion of democracy, and modernization and decentralization of the public administration. Poor governance, corruption, and political instability damage investment, growth, and discriminate against the poor. Countries with poor institutions are more likely to have high inequality and low-quality institutions, and are often associated with wasteful redistribution toward the rich (Gradstein, 2003, Chong and Gradstein, 2004 a, b).

Low inflation, sustainable budget deficits, and realistic exchange rates, are also key factors for a good investment climate, job creation, and poverty reduction. High inflation and volatile real exchange rates are particularly harmful for those with fixed incomes, and local currency and assets. Rich people are more likely to have better access to credit, better access to foreign exchange accounts than poor people, so that balance of payments crises hurt the poor proportionately more than the rich.

⁹ Their measure of human capital control for school quality, school quantity, and country-specific compulsory years of education.

3. Approaches in financial cooperation: impact on pro-poor growth

3.1. Sub-sectoral approaches: primary, secondary, vocational and higher education

3.1.1. Prioritizing among levels of education

In terms of levels of education, even though both micro and macro empirical evidence point to a stronger link between secondary and higher education and individual earnings and subsequent economic growth, basic education (primary and lower-secondary) appears to be the top priority for educational policy in the developing world (WB, 1991, 1995; UNDP, 2005). This impetus for basic education has been justified on several grounds: (i) in countries with no universal basic education, rates of return are generally greatest in primary education, followed by secondary and higher education; (ii) basic competences in general areas such as verbal, computational, communication and problem-solving skills can be applied in a wide range of work settings and can enable people to acquire job-specific skills and knowledge; (iii) basic education provides the basic skills and knowledge necessary for civic order and full participation in society; (iv) more generally, education helps strengthen civil institutions and build national capacity and good governance. It follows that countries that have yet to achieve near-universal enrolment at the primary and lower-secondary level must focus on basic education, while upper-secondary and higher education might be an educational priority in countries which have already achieved universal basic education.

In order to prioritize educational investments among the various levels of education, two criteria have been suggested by the literature: (i) differences between private and social returns to investment in education; and (ii) benefit incidence analysis. More specifically, public expenditures should be directed to educational levels in which social returns are higher than private returns, and in which the poor benefit the most.

Regarding the first criteria, figures 8-11 illustrate the difference between social and private returns in terms of educational and income levels and across regions. Overall private returns seem to be higher than social returns. Additionally, these differences (i.e. private returns minus social returns) are the lowest for investments in secondary education, suggesting a need for more public efforts at this level. In terms of level of income, in low- and low-middle income countries social returns to educational investments were particularly high in basic education (i.e. secondary and primary education), while post-primary education displays the highest returns in high income-OECD. Surprisingly, in upper-middle income countries, differences between social and private returns are similar at all levels of education, thus its

analysis will not yield special priority among levels. Overall, the largest differences (private returns minus social returns) were found in investments in primary and tertiary education. Regionally, major differences were found in Sub-Saharan Africa, where in 6 out of 10 cases, these differences were largest at tertiary levels, suggesting that public efforts should be directed toward basic education (i.e. primary and secondary) in these countries. In Latin America and the Caribbean, on the other hand, in 8 out of 14 cases differences were found to be largest when comparing returns to investments in primary education.

Regarding the second criteria, most studies show that public expenditures in education seem to be pro-poor when they are devoted to primary education, pro-middle income when invested in secondary education and strongly pro-rich when directed toward post-secondary education (Sakellariou and Patrinos, 2004). The explanation for this is that poor households had more children in primary education and therefore benefited from utilizing the system. Consequently, as enrolment from poor households decreased at higher educational levels, the poor were less likely to benefit. For instance, Lanjow et al. (2001) investigated the extent to which Indonesia's poor benefit from public and private provision of education and health services. They found that spending on primary education and primary health care had the greatest pro-poor effects, while spending on higher education and hospitals was less beneficial to the poor. In Ghana, Demery et al. (1995) estimated that the poorest quintile of the population benefit from a 16% portion of education spending. In addition, they found that the poor gained relatively more from spending on primary education (22%), and less from secondary (15%) and tertiary (6%) spending. Lastly, in Yemen, Yuki (2003) found that spending on public education was more equally distributed than household income, but in absolute terms public spending on education was not distributed progressively but frequently regressively, especially at higher levels of education.

Regionally, Castro-Leal et al. (1999) examined the impact on poverty of public expenditures in education in nine African countries (Côte d'Ivoire, Ghana, Guinea, Kenya, Madagascar, Malawi, South Africa, Tanzania, and Uganda). They observed that public educational investments favoured not the poor but those who were better-off. In absolute terms, the poorest quintile gained less than 20% of the subsidy, while the richest quintile gained far more. The monetary benefit to the poor, as a share of total household expenditure, was more than the benefit to the rich, particularly in Kenya and South Africa. Among levels of education, the poorest quintile gained more from spending at the primary level (one-fifth of the subsidy) compared with the subsidy at the secondary level (one-tenth), and almost nothing

from the subsidy at the tertiary level. Hence, given this second criteria, public spending on education should be directed towards primary and lower secondary education in order for these investments to reach the poor.

To conclude, overall private returns seem to be higher than social returns. In addition, public expenditures in education seem to be more pro-poor when they are devoted to primary education, pro-middle income when invested in secondary education and less pro-poor when directed toward post-secondary education.

3.1.2. TVET vs. general/academic education

Another concern in the literature has focused on the question of whether more effort should be directed toward more technical and vocational education and training (TVET) or toward more general or academic education instead. The view of the World Bank was clearly expressed in the 1991 report *“Vocational and Technical Education and Training”*, which proposed an approach to the design of public training policies based on 4 key elements: (i) strengthening primary and secondary education; (ii) encouraging private sector training; (iii) improving effectiveness and efficiency in public training; and (iv) using training as a complement to equity strategies. The report explicitly suggested the following: *“the most cost-effective use of public resources to improve the productivity and flexibility of the work force is thus investment in general education at the primary and secondary levels”*.

This emphasis on general education is based on the idea that training in specific skills is expected to be more effective when it builds on a strong foundation of general education, and on the empirical evidence that vocational training is no more effective than academic secondary education in enabling graduates to enter wage-employment or self-employment. In many cases, public training is not satisfactory, often because it has been expanded to address objectives other than compensating for weak private training (e.g. reducing youth unemployment, creating a reserve of skilled workers to attract new capital investment, or diverting youth from aspirations for higher education). In the absence of sustained growth in wage employment, such policies have led to too much public training and low levels of placement of trained workers in jobs that make use of their new skills.

Looking at the estimated returns to education provided by the World Bank, figures 12-13 compare both social and private returns to investment in academic/general education with those from investments in more technical/vocational education. Unfortunately, neither the empirical literature nor the World Bank database provides sufficient comparable data across

regions and income levels. We only present the data from countries in which both social and private returns were estimated. Note that with the sole exception of Colombia, social returns were found to be higher overall in general/academic education than in technical/vocational education. These results lend support to a public focus on general/academic education, while suggesting the need for a private focus on technical/vocational education. The data allows us to compare returns for only 3 low income countries: Indonesia (1986), Liberia (1983), and Tanzania (1982). In these countries, the general pattern is corroborated, so that social returns to investments in general/academic education were found to be higher than to investments in more technical/vocational education.

However, when comparing private returns in academic/general education with technical/vocational education empirical evidence is not conclusive. Figure 13 shows that private returns were found to be higher in general/academic education in only 6 out of 13 cases (almost fifty percent). In addition, Moenjak and Worswick (2003) suggested recently that after correcting for possible self-selection, vocational education was found to generate higher earnings returns than general education in Thailand over the period from 1989 to 1995.

To conclude, public expenditures in education should be focussed on general/academic education given that social returns are the highest in this type of educational expenditures. However, this does not mean that no expenditures in technical/vocational is required, but rather that both types of expenditures should complement each other. The optimal mix may depend on the local private demand of market-related skills, which are not properly provided by the more general/academic educational system.

3.1.3. Public vs. private provision of TVET

Particularly interesting is the argument that training could play a special role in complementing equity strategies. Empirical evidence suggests that most of the poor in developing countries are found in rural areas and in the urban informal sector, relying on labor, which is their principal asset. Appropriately strengthened TVET can be a major source of skills for the most disadvantaged. For instance, rural training programs that are closely adjusted to local markets and technologies can provide entrepreneurial skills that provide an income for many farm families, self-employment and very small enterprises (WB, 1991).

Although training grant programmes have been established by governments in many developing countries, there have been relatively few critical evaluations of their impact. One of these few studies was made by Dougherty and Tan (1991), who investigated evaluations

from programmes implemented in Brazil, Chile, South Korea, Singapore and Taiwan. They observed some of the following patterns: (i) much of the training qualifying for grants would have been undertaken anyway; (ii) typically the main beneficiaries of the programmes were larger firms, and small firms tended to be deterred from participation by the overhead costs of organizing structured training and the administrative costs of participation; (iii) there were adverse effects on equity in low income countries when subsidising training. Budgetary constraints tend to cause the limited resources available for subsidizing training to be concentrated in a few public programmes. Most funds tend to be channelled to more sophisticated training, a prerequisite for which is the completion of at least lower secondary schooling. The effect, therefore, is to improve the prospects of those who, if not among the most privileged, are nevertheless relatively advantaged, and the inequity is exacerbated if the provision of this training, which is normally expensive, comes at the cost of not enhancing the coverage and quality of primary education.

More recently, and in contrast to Dougherty and Tan (1991), the 2002 UNESCO report *“Private Technical and Vocational Education in Sub-Saharan Africa”* suggests a promising role for the private sector in providing training. More specifically, it studied in detail the rationale for TVET private provision in two Sub-Saharan African countries (Mali and Senegal) and produced some interesting results: (i) in both countries unit costs were significantly lower in private institutions; (ii) in both countries private providers were present in new fields of training ignored by public institutions (e.g. computer science, tourism); (iii) in the context of limited public delivery, private promoters diversified offers and enlarged consumer choice; (iv) private providers were not limited to the most profitable segments of the market; (v) even though there is clearly a segment of the private sector that targets mainly high-income groups, particularly at the post-secondary level, in Senegal, where private institutions received very little or no public subsidies, many private institutions enrolled students from low income families.

To conclude, the private sector seems to have some comparative advantages when providing training with respect to public institutions. In particular, the private sector may: (i) better fit firms’ demand on skills; and (ii) be more efficient. However, the link to equity considerations has been rather weak, as showed by Dougherty and Tan (1991). This suggests that a clearer pro-poor profile is still needed to make expenditures in TVET more pro-poor in practice.

3.2. Project-based approaches: improving access and education quality

3.2.1. The educational production function

In this section, we seek at identifying the optimal necessary mix of educational inputs for pro-poor growth. For instance, the EFA-FTI initiative suggests a benchmark for EFA-Education Sector Development Plans based on three criteria: (i) resource mobilization; (ii) student flows; and (iii) service delivery. This benchmark is based on averages for some so-called successful developing countries and should help policy makers to achieve the EFA-goals. We concentrate on services delivery and resource mobilization. Regarding resource mobilization, public domestically-generated revenues should represent between 14-18% of GDP, and education share of budget should reach the 20%, with a primary education share of education budget between 42-64%. Regarding services delivery, forty pupils per teacher are required in publicly-financed primary schools, between 850-1000 effective hours of schooling (not official hours) in publicly-financed primary schools, and the private share of enrolments percentage of pupils enrolled in exclusively privately-financed primary schools of 10 or less.

Surprisingly, empirical evidence from about 96 estimated educational production functions (EPF)¹⁰ for developing countries suggests that more educational resources are not a sufficient condition but rather a necessary condition for improving educational outcomes. For instance, Hanushek (1995, 2003) found no statistically significant systematic and positive causal relationship between educational expenditures¹¹ and educational outcomes. Moreover and regarding school construction, Filmer (2004) tested for the pro-poor effects of school availability in a panel of 21 developing countries¹². He found a similar impact on enrolment for both boys and girls, but an anti-poor impact through an increase in the enrolment gap between the poorer and the richer children, suggesting that: (i) even though we observe a positive correlation, the impact does not appear very large for most of the countries; and (ii) school construction could also be pro-rich if not placed in underdeveloped areas, especially rural areas.

In the context of the OECD, the recent report¹³ on “school factor-related to quality and equity” (OECD, 2005) shed more light on the relationship between educational achievement

¹⁰ The EPF function has been the most common approach to studying the relationship between educational inputs (e.g. teacher-pupil ratio, teacher salary, school facilities) and educational outcomes (e.g. test scores, drop-out rates).

¹¹ Teacher-pupil ratio, teacher education, teacher experience, teacher salary, expenditure per pupil, and facilities.

¹² He studied children aged 6 to 14 with data from Demographic and Health Surveys (DHS) conducted in the 90s.

¹³ Data are from the PISA 2000 survey.

and the optimal mix of educational inputs. It uses a framework based on three main groups of educational characteristics: (i) students-related¹⁴ characteristics; (ii) school context¹⁵; and (iii) policy-amenable school characteristics (i.e. educational inputs), which are structured as school resources¹⁶, school climate¹⁷, and school policies¹⁸. It finds that, after adjustments for student background conditions, contextual factors, in particular a school's socio-economic composition, account for significantly more variation in student performance among school than do factors relating to school climate, school policies and school resources. In percentages, in the OECD countries around 50% of the between school variance in reading literacy is explained by student background, under 20% by the school context (in particular school average socio-economic status), and around 5% by policy-amenable school characteristics (i.e. school climate, school policies, and school resources). Around 30% of the between-school variance remains unexplained. These results are may be not automatically transferable to developing countries but still inform us of how complex it is to measure the impact of school resources on achievement. The report reveals the crucial need of students' and parents' incentives.

To conclude, what the FTI benchmark does is to ensure some minimum standard level of educational expenditures and educational service delivery. However, it has been shown that increased educational resources do not translate automatically in improved educational outcomes (i.e. achievement), so that quality-, parents-, and management-related factors matter. We would not argue for a quantity-quality trade-off but for a local-specific optimal mix. Two important requisites emerge as crucial for pro-poor growth: (i) better access to high-quality and equitable education (i.e. in all levels); and (ii) greater involvement of parents and community in the process of decision making at educational policy. The first ensures that not only the rich benefit from educational expenditures but also the most vulnerable, while the latter implies that education responds to local demands.

¹⁴ Socio-economic status, gender, age, immigration status, grade level, and type of study programme.

¹⁵ School type, school location, and school average socio-economic status.

¹⁶ School size, index of the school's physical infrastructure, index of the quality of a school's educational resources, proportion of computer available to 15-years-olds, index of teacher shortage, student-teaching staff ratio, and professional development.

¹⁷ Index of disciplinary climate, index of teacher support, index of achievement press, index of teacher-student relations, index of principals' perceptions of student-related factors affecting the school climate, index of principals' perceptions of teachers' morale and commitment, index of principals' perceptions of teacher-related factors affecting the school climate, and index of students' sense of belonging in school.

¹⁸ Instructional time, index of monitoring of student progress, index of school-self evaluation; whether students' performance is considered or not for school admission, index of teacher autonomy, performance information is communicated to local education authority, index of school autonomy, performance information is communicated to the school principal, etc...

3.2.2. Household involvement and school autonomy

Both the UNDP and The World Bank suggest that more household involvement and more autonomous institutions are necessary to increase the quantity, quality, efficiency and equity of educational systems in developing countries. The idea is that institutional problems can be also addressed through parental and community involvement so that schooling meets local priorities and values. School autonomy is expected to facilitate the use of educational inputs (e.g. instructional materials, teachers) according to school and community conditions and to increase accountability to parents and to the community (and not only to central authorities). Increased household involvement and local school autonomy, however, also contain some potential risks. For instance, increased household involvement can obstruct the enforcement of broader national objectives or induce social segregation if schools become polarized between elite schools and schools for the children of the poor, such that inequalities in educational opportunity might increase. Furthermore, school autonomy could fail to adhere to national standards and curriculum. The involvement-related risks can be mitigated through the provision of public funding in such a way that these funds be made available only to schools that follow certain approved practices. For example, funding can be made higher for students from poor families. In addition, the autonomy-related risks can be mitigated by clearly distinguishing school level management and resource allocation standards, curricula and learning assessments at the national or regional level.

Three recent program evaluations implemented by the World Bank shed more light on the importance of school management autonomy and parental involvement. For instance, Jimenez and Sawada (1999) evaluated El Salvador's community managed school program (EDUCO). The program consisted of free registration for students enrolled in EDUCO schools, the provision of uniforms and a package of school materials (e.g. pencils, rulers and markers). In addition, parents in EDUCO schools were made to invest time in school practices, such as providing meals, and building, maintaining and administering the school. The authors found that the program expanded educational opportunities for the poor living in rural areas. When controlling for family background, the average performance of EDUCO students on language tests was found to be greater than that of students from non-EDUCO schools. This experience shows that both overall achievement levels and a rapid expansion in rural education can be achieved without trade-offs between quantity and quality as long as the program is well implemented. They concluded that parental participation in school-based management seems to be an appropriate way of motivating parents to send their children to school and better

monitor teachers in most poor communities. Alternatively, Kim et al. (1999) evaluated the effects of a program designed to stimulate girls' schooling through the creation of private schools in the poor urban neighbourhoods of Quetta, Pakistan. The Urban Fellowship Program encouraged private schools controlled by the community to establish new facilities by paying subsidies directly to schools. Schools were assured of government support for a period of 3 years. The initial subsidy was about \$3 per month and per girl enrolled with an upper limit of \$300 per month (i.e. 100 girls). In addition, each school received \$6 per girl to compensate start-up costs. This subsidy was reduced every year, and by the fourth year schools were expected to operate on the basis of fees and private support. Fellowship schools were allowed to admit boys provided that they made up less than half of total enrolment. In contrast, grants were only calculated by the number of girls enrolled and class sizes had to be at or below 50 boys and girls per classroom; the schools were to hire at least one teacher for each classroom. Parents were asked to form a committee representing the neighbourhood in negotiations, and were allowed to select their school operator from among the proposals or to choose to run the school themselves. The authors observed that the program increased girls' enrolment by approximately 33 percentage points. Finally, Tan et al. (1999) investigated the effects of the Dropout Intervention Program implemented by the government of the Philippines. They found regular parent-teacher meetings together with the provision of multi-level learning materials for teachers to be a cost-effective educational policy for reducing drop-out rates.

3.3. Program-based approaches: basket funding and sector budget financing

3.3.1. Project- vs. programme-based approaches

In previous sections we have shown several educational projects and programmes which have succeeded at improving educational outcomes of the poor in various specific countries. In this section we focus on aid modalities. More specifically, we compare the strengths and weaknesses of available aid modalities and search for best practices in the context of educational policy. Hence, we are concerned with the form in which funding agencies should interact with governments and other funding agencies in order to make educational support more pro-poor and to improve the efficiency of aid in the sector.

Nowadays, there appears to be an impetus in the use of programme-based approaches (PBA) or/and sector wide approaches (SWAp) to financial cooperation (DFID, 1999). For instance, the BMZ position paper from November 2001 argued for an increasing adoption by the German funding agencies of SWAp, especially in the form of basket funding. This

impetus responds to the recognition of the importance of greater ownership, and better alignment, coordination, and harmonisation of aid for efficiently achieve development goals. For instance, the adoption of SWAp to education is expected to increase ownership, and to improve coordination and harmonisation among donors and alignment with partner country systems and policies. In addition, the perception that inappropriate aid modalities may be part of the problem may have led funding agencies to move toward these new approaches.

It has been argued that a proliferation of projects (i.e. in the context of project-based approaches) can lead to policy and strategy fragmentation, duplicated approaches, waste of resources, government-funding agency disagreements over spending priorities, weak sustainability of outcomes in the long-term, and lack of national ownership. For instance, in the context of education policy, it seems to be essential for the success of project-based aid that it be consistent with broad education policy and not conflict with agreed government policies and strategies. Additionally, projects may not be used to allow individual funding agencies to follow their own agendas.

A SWAp to education has been defined (DFID, 1999) as a *process* consisting of three main phases: (i) an initial loose government-funding agency agreement to work together to make education aid more effective (e.g. State of Intent); (ii) a subsequent framework for co-operation outlining individual agendas for education reform; and (iii) a compact operational programme, which must be led and managed by governments (often expressed in a Memorandum of understanding, a common Work Plan or a Code of Practice, formally agreed upon by all parties).

In addition, an education SWAp should include (iv) a sustainable partnership based on a long-term vision and agreed targets for education reform incorporating civil society, government and funding agencies; (v) a well-defined sector and sub-sector, incorporating macro, sectoral, institutional and financial policies and structures; (vi) a forward looking work programme for medium and long-term sector strategy formulation; (vii) common government-funding agency management arrangements and capacity building programmes; and (viii) jointly agreed strategic negotiation and annual sector performance review mechanisms.

3.3.2. SWAp to education: strengths, weaknesses, and learned lessons

A further question in the discussion concerns the potential benefits and risks of implementing SWAp to education. Country-case evaluations (DFID, 1999) stress two

potential benefits: (i) they focus greater attention on education sector performance, outcomes and services quality through a greater emphasis on policy, budgetary and institutional concerns and arrangements; and (ii) they provide an opportunity for more effective relationships between national governments and funding agencies, thus increasing national leadership, ownership of reform plans, revised mechanisms for joint government-funding agency strategic negotiations and performance review.

In contrast, four main potential risks for SWAp to education have been identified (Schäfer, 2004; Klingebiel, 2003; DFID, 1999): (i) a higher potentiality for corruption and mismanagement than in project-based approaches due to the more important role of the government; (ii) the existence of weak national institutions and capacities to deliver programmes, both technical and financial; (iii) the frequent lack of agreement on realistic and achievable performance targets, alongside weak education management information- and monitoring review systems; (iv) perceived complexity, and delay in the process.

In addition, the following lessons has been highlighted from the implementation of SWAp to education (DFID, 1999): (i) the importance of having national governments own and lead the process; (ii) the need for including decentralisation, community mobilisation and effective information exchange in the planning stages; (iii) the need for a long term strategic vision; (iv) the need to build institutional reform and capacity building objectives, targets and processes into the design and planning stages; (v) the need for robust finance/budget planning systems, which must include an operational medium-term budget framework and active participation in annual public expenditure review practices; (vi) the importance of using education ministry management systems by all stakeholders (avoiding parallel management structures); (vii) the importance of setting agreed upon uncomplicated performance indicators and an adequate education management information system, as well as a monitoring and evaluation system.

At this stage, the implementation of SWAp to education represents a chance to overcome the well-documented failures of implemented project approaches. It provides an opportunity to develop more effective relationships between national governments and funding agencies. However, country-specificities should be taken into account. Two pre-requisites appear to be essential to successfully implement SWAp to education: (i) an adequate local institutional capacity (e.g. finance management-, management information- and monitoring and evaluation systems); and (ii) a strong local commitment to achieve poverty reduction in the country. Unfortunately, pro-poor effects from SWAp to education have not yet been well documented

in these studies, so that we can not address the question whether SWAp to education represent the most appropriate instrument to implement educational policy in developing countries.

3.3.3. Budget funding vs. basket funding

Finally, a distinction needs to be drawn between a SWAp as a method of organising a dialogue and planning interventions within the educational sector, and the financing modality (e.g. a common basket fund, general or sectoral budget support). For instance, the need for a SWAp does not imply the need for a common basket fund or sectoral budget support. In this section we aim at comparing aid modalities. The general characteristics of budget support are that it is: (i) channelled directly to partner governments using their own allocation, procurement and accounting systems; and (ii) not linked to specific project activities. Additionally, the literature distinguishes between sector and general budget support. Sector budget support is distinguished by being earmarked to discrete sector or sectors, with any conditionality relating to these sectors. Hence, general budget support's dialogue and conditions focuses on macro and cross-sectoral issues, while sectoral budget support only in sector-specific issues. Regarding the distinction between budget financing and basket financing, budget financing make use of the normal national procedures while basket financing typically uses special arrangements negotiated with donors.

From the German development policy perspective, the BMZ position paper from November 2001 clearly recommends the use of SWAp in the form of basket funding. Regarding the controversial question of implementing basket funding or budget support, the empirical literature remains still scarce. We can only report the results from a recent evaluation, which was commissioned by the OECD-DAC, and which evaluates to what extent, and under what circumstances or in what country contexts, general budget support is relevant, efficient, and effective for achieving sustainable impacts on poverty reduction and growth (IDD and Associates, 2006). The countries studied were Burkina Faso, Malawi, Mozambique, Nicaragua, Rwanda, Uganda and Vietnam. The main message of this evaluation is that under the condition of strong political commitment and willingness to reduce poverty, budget support can be an effective way for donors to deliver aid.

More specifically, the implementation of general budget support: (i) has helped to strengthen the relationship between donors and governments, and encouraged better coordination between different donors; (ii) has helped to strengthen planning and budget systems, making them more transparent and therefore accountable; (iii) has helped to

prioritise areas of expenditure that target the poor like education. In addition, the evaluation found no evidence of increases in the incomes of the very poor as a consequence of its implementation.

Unfortunately the report did not provide evidence neither on the partial effects of other existing parallel aid modalities (e.g. basket funding or project-based approaches) in these countries nor on pro-poor effects of educational expenditures. Under these circumstances, the authors suggest continuing to pursue a mix of mechanisms to deliver aid, and introduce budget support only gradually. It is obvious that more work must be done in order to know more about the pro-poor effects of different aid modalities from a sectoral perspective.

4. Recommendations for financial cooperation programmes

Figure 3 summarize the main policy implications of our analysis. It distinguishes between portfolio choices, priorities and targets, and outcomes. Policy makers can increase the quantity or/and quality of education by combining several portfolio investments. These investments may have different impacts on the poor, which may depend on the pro-poor profile of the designed portfolio. Clearly, in order to reach the highest pro-poor growth effects, the educational portfolio investments should be based on three pillars: (i) universal basic education; (ii) increased and high quality TVET to provide the poor with the required local and specific skills, needed to be employed or self-employed; and (iii) a focus on the most vulnerable and disadvantaged groups of the population. To this connection, women education is critical for generating pro-poor growth. Increased women education should increase their labour productivity, reduce fertility and improve health and nutrition of future generations. Decreasing educational disparities between the poor and the non-poor may decrease income disparities. In addition, the specific target of the poor and of the most disadvantaged groups may help to remove the existing political and social bias against them, and increase their voice in the political decision making process.

From a macro perspective, most authors find a positive correlation between the initial level of education (both quality and quantity) and the country's subsequent economic growth. Additionally, this correlation appears to be stronger in countries, in which the level of education is lowest indicating the crucial of educational expenditures to generating economic growth in most poor countries. Regarding the impact of education on income-poverty, the macro empirical literature concludes that: (i) unequal educational distributions contribute to unequal income distributions; (ii) higher levels of human capital positively affect growth in the income of the poor; and (iii) measures of education, which do not control for education

quality are not found to be significantly correlated with growth in the income of the poor, but that average income growth and growth in the income of the poor are positively correlated in a one-to-one relationship. Unfortunately, no work has been done on the direct impact of non-income factors (e.g. empowerment, vulnerability) on poverty reduction. Additionally, good governance, institutional development and macroeconomic stability seem to be essential for generating pro-poor growth processes, and for reinforcing the impact of education on poverty reduction.

Among educational levels, investments should be directed toward primary education, especially in low- and middle income countries, in which social returns are the highest. On the one hand, public expenditures in education should be focused on general/academic basic education (i.e. primary and secondary education) in which differences between private and social returns to investment in education (i.e. private minus social returns) are the lowest, and in which the poor benefit the most from utilizing the educational system. On the other hand, and regarding the provision of TVET, empirical evidence suggests that the private sector appears to be more efficient and dynamic (i.e. present in most advanced fields of training) than public institutions in most developing countries. Appropriately strengthened TVET should complement investments in general/academic education. It can be a major source of necessary entrepreneurial skills for the most disadvantaged, skills that are necessary for generating self-employment and small enterprises in areas in which wage-labor is scarce.

With regard to project design, the mix of inputs for making learning more effective vary from country to country and school to school according to local conditions (e.g. culture, ethnics). In other words, it is necessary a full participation and without exceptions of the whole society in the implementing process. More specifically, pro-poor projects in the educational sector: (i) should be located in the most underdeveloped regions and reach most disadvantaged groups of population (e.g. indigenous groups, women, the poor), for which returns to education are the highest; (ii) should focus on quality; (iii) should ensure more household involvement and greater school autonomy, which is critical for motivating parents to send their children to school and better monitoring teachers in most poor communities; and (iv) emphasize women's education. Programs in the educational sector, which combine these features, such as the Urban Fellowship Program in Quetta (Pakistan), the EDUCO in El Salvador, or the Drop-out Intervention Program in Philippines, have successfully targeted the poorest areas, and reached most disadvantaged and vulnerable groups of population (e.g. girls

in Pakistan). Therefore, it appears that this type of projects as a promising pro-poor intervention in the educational sector.

Concerning the form in which funding agencies should interact with governments in order to make educational support more pro-poor, the implementation of SWAp to education represents an opportunity to overcome the well-documented failures of previously implemented project and programme approaches. It seems to be essential for the success of project assistance that it be consistent with broad education policy and not conflict with agreed government policies and strategies. Reported experiences suggest that the implementation of SWAp to education provides an opportunity for developing more effective relationships between national governments and funding agencies.

Pro-poor effects from SWAp to education have not yet been well documented in these studies, and therefore we are not able to draw positive statements from the available literature. However, two pre-requisites appear to be essential to successfully implement SWAp to education: (i) an adequate local institutional capacity (e.g. finance management and monitoring and evaluation systems); and (ii) a strong local commitment to achieve poverty reduction in the country. Regarding the controversial question of implementing basket funding or budget support, the empirical literature remains still scarce. It is obvious that more work must be done in order to know more about the pro-poor effects of different aid modalities from a sectoral perspective.

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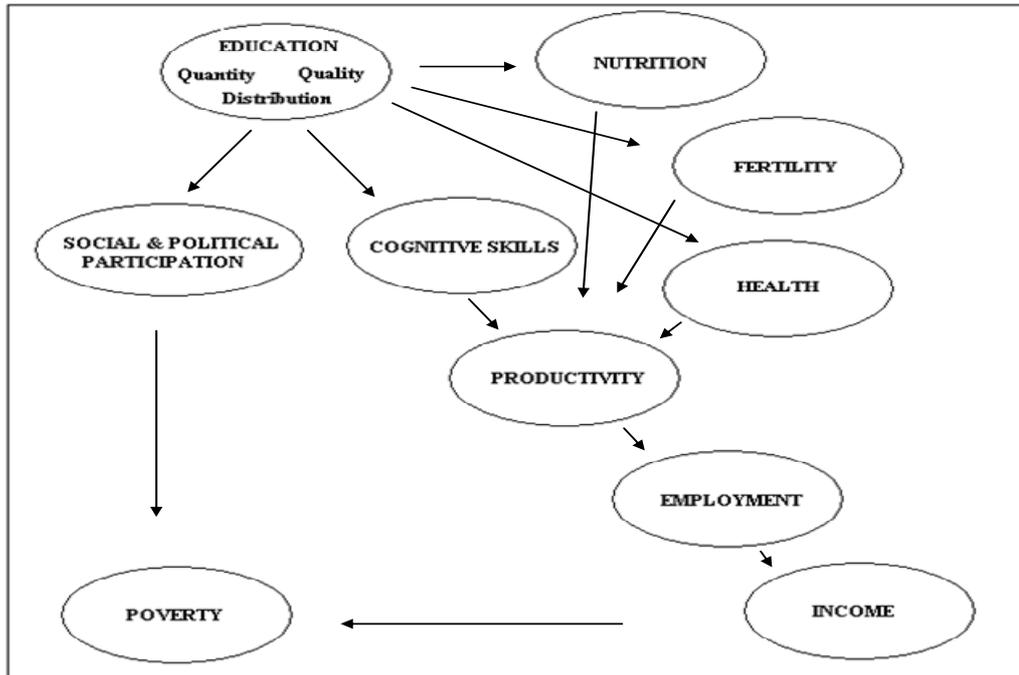
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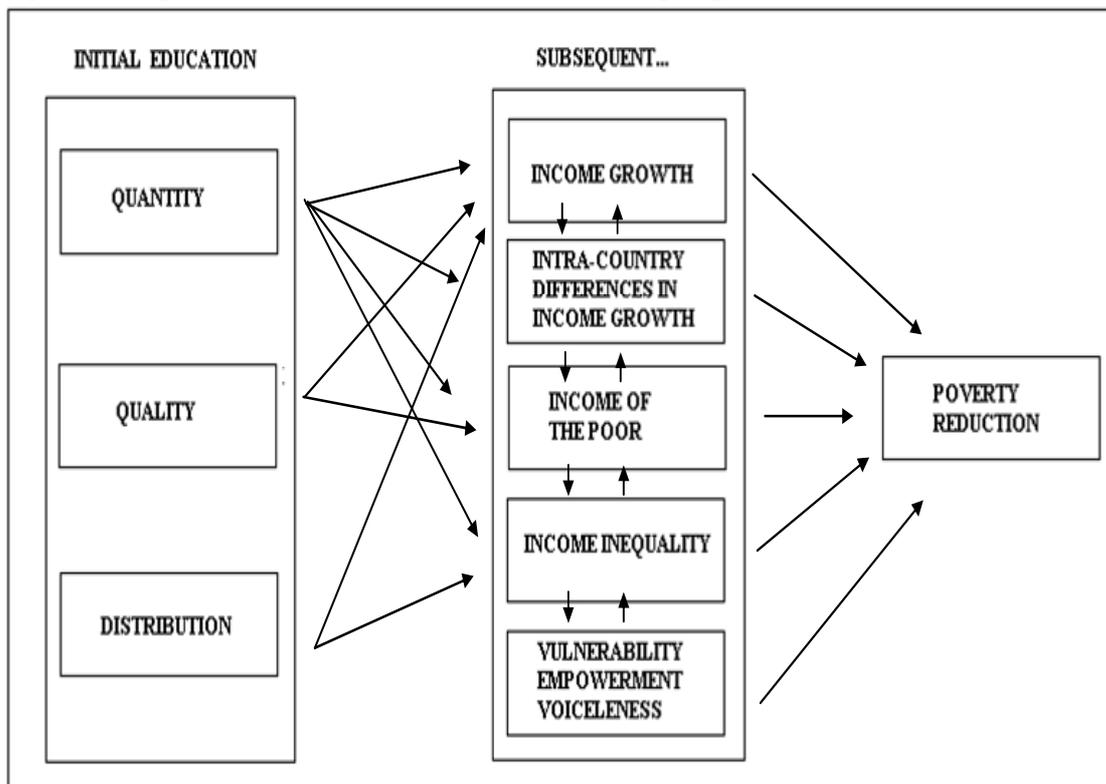
Figures

Figure 1: Impact chains between education and poverty from a micro perspective



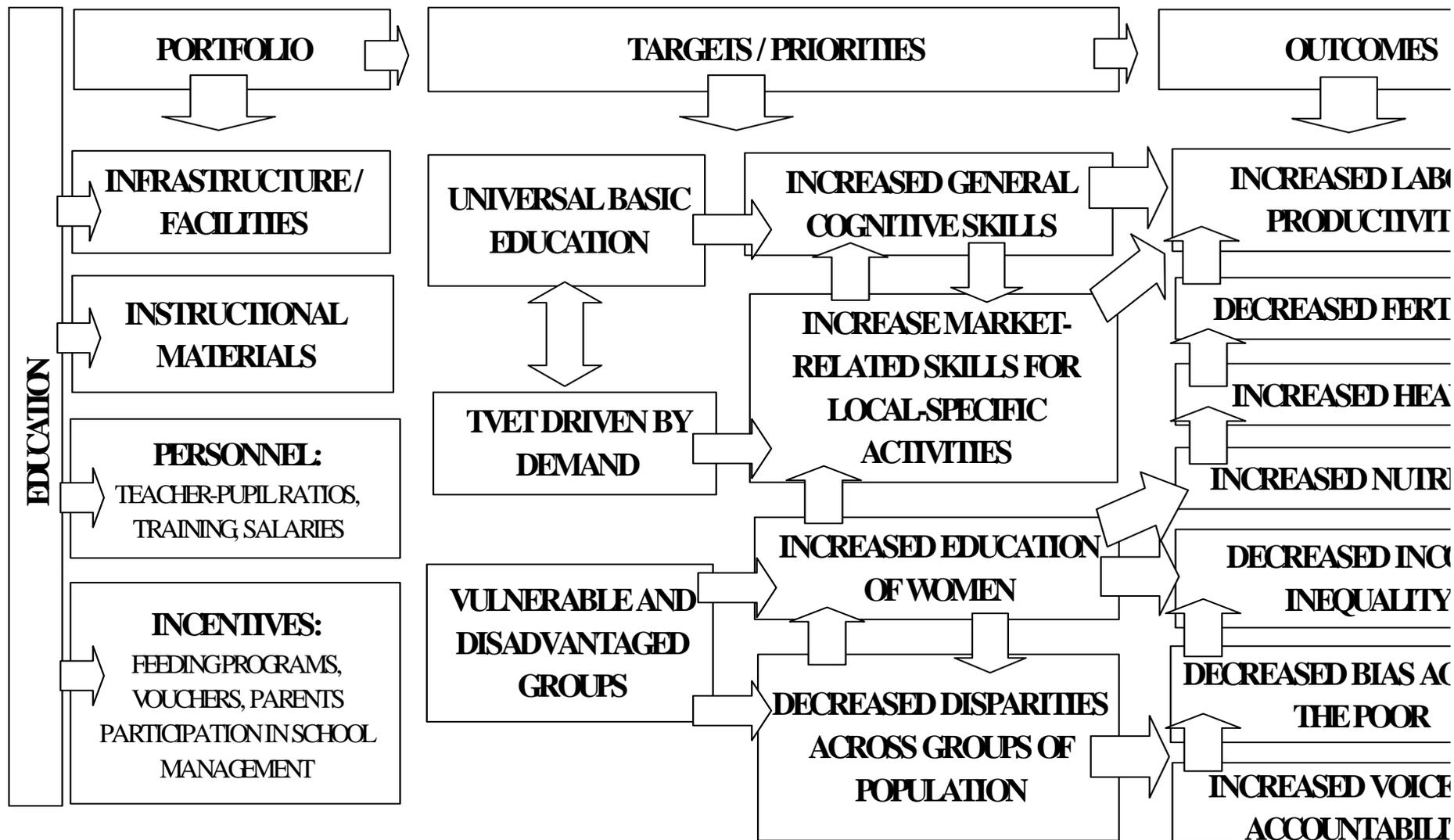
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Figure 2: Impact chains in education from a macro perspective



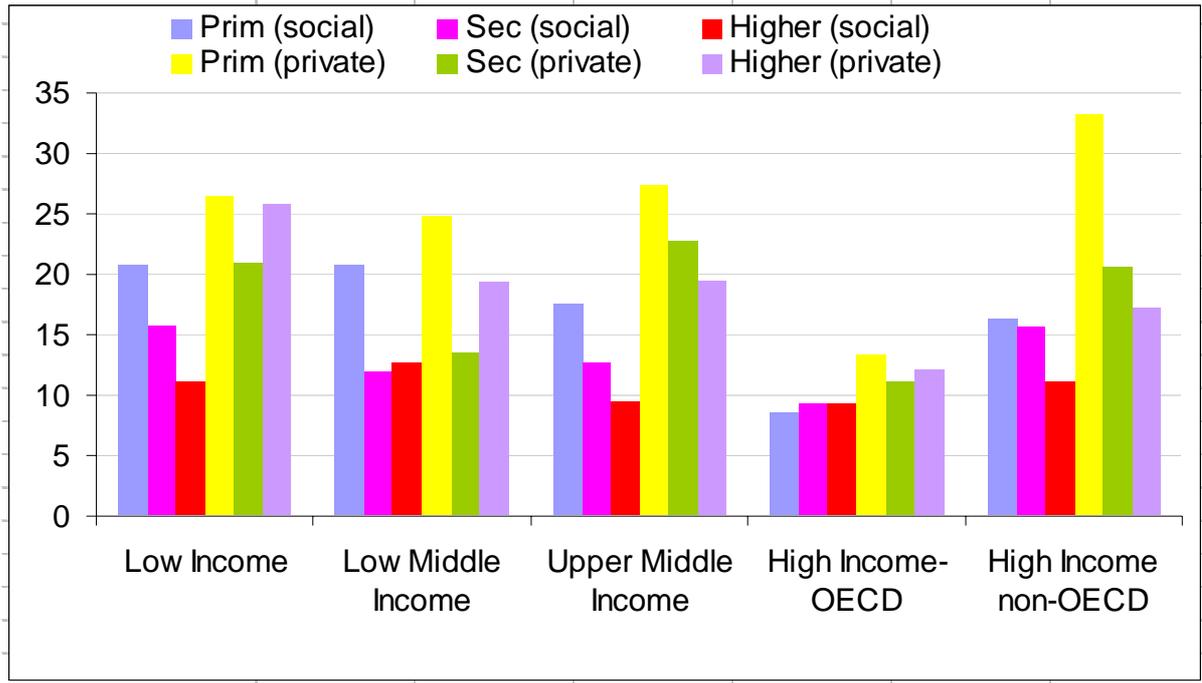
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Figure 3: Education and pro-poor growth



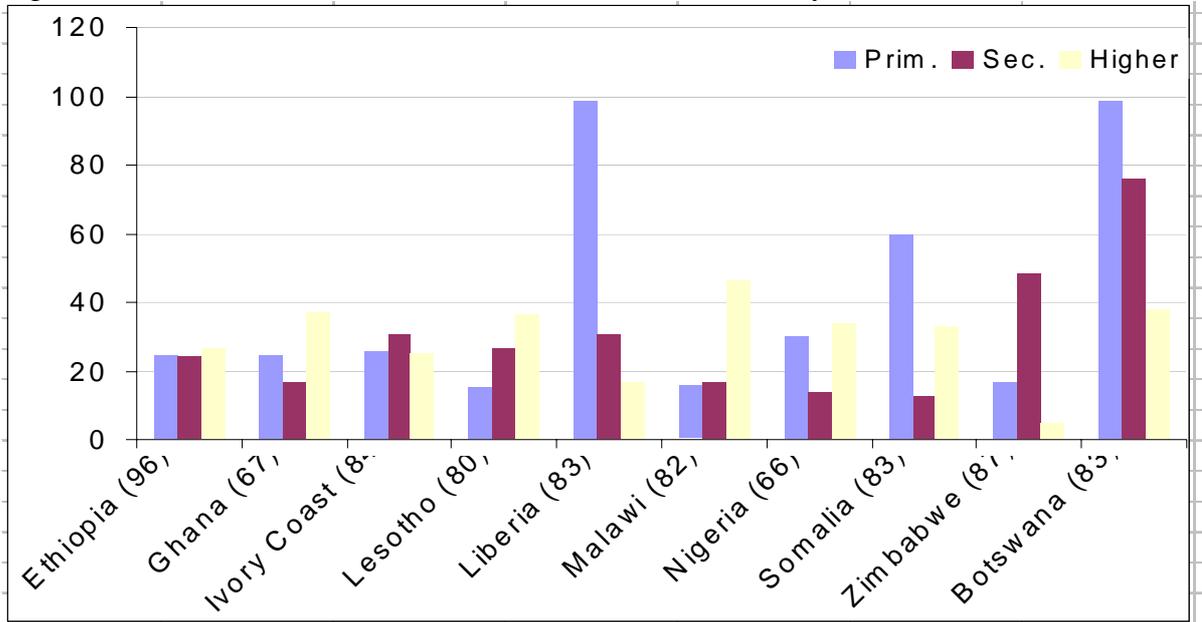
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Figure 4: Private vs. social returns: by educational –and income level



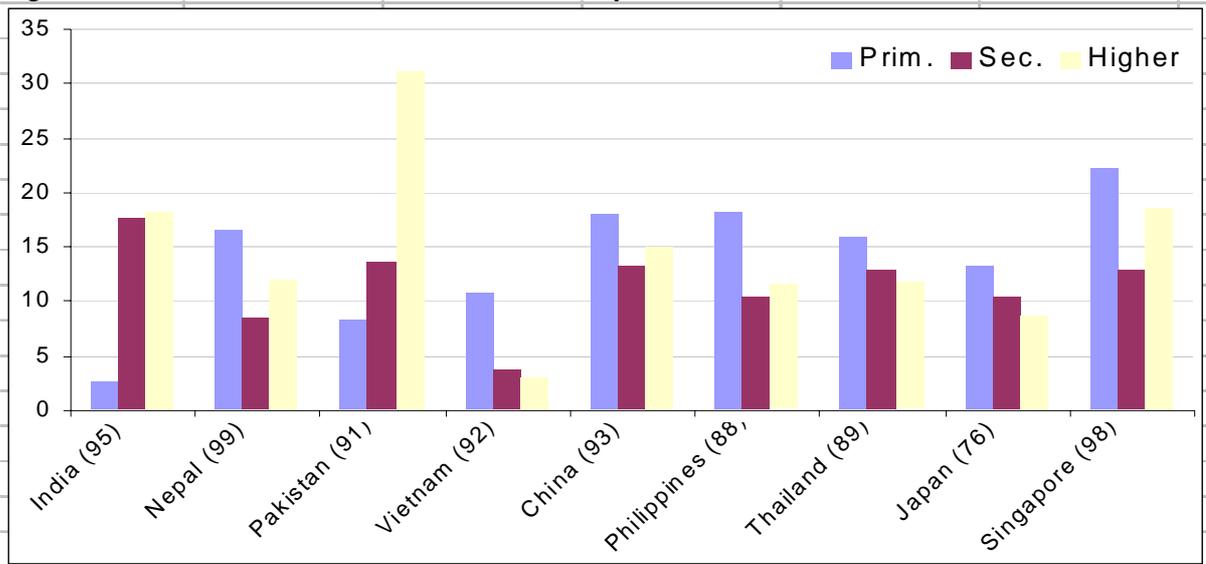
Source: Own illustration based on data from the World Bank’s education database

Figure 5: Private returns to education in Sub-Saharan Africa: by educational level



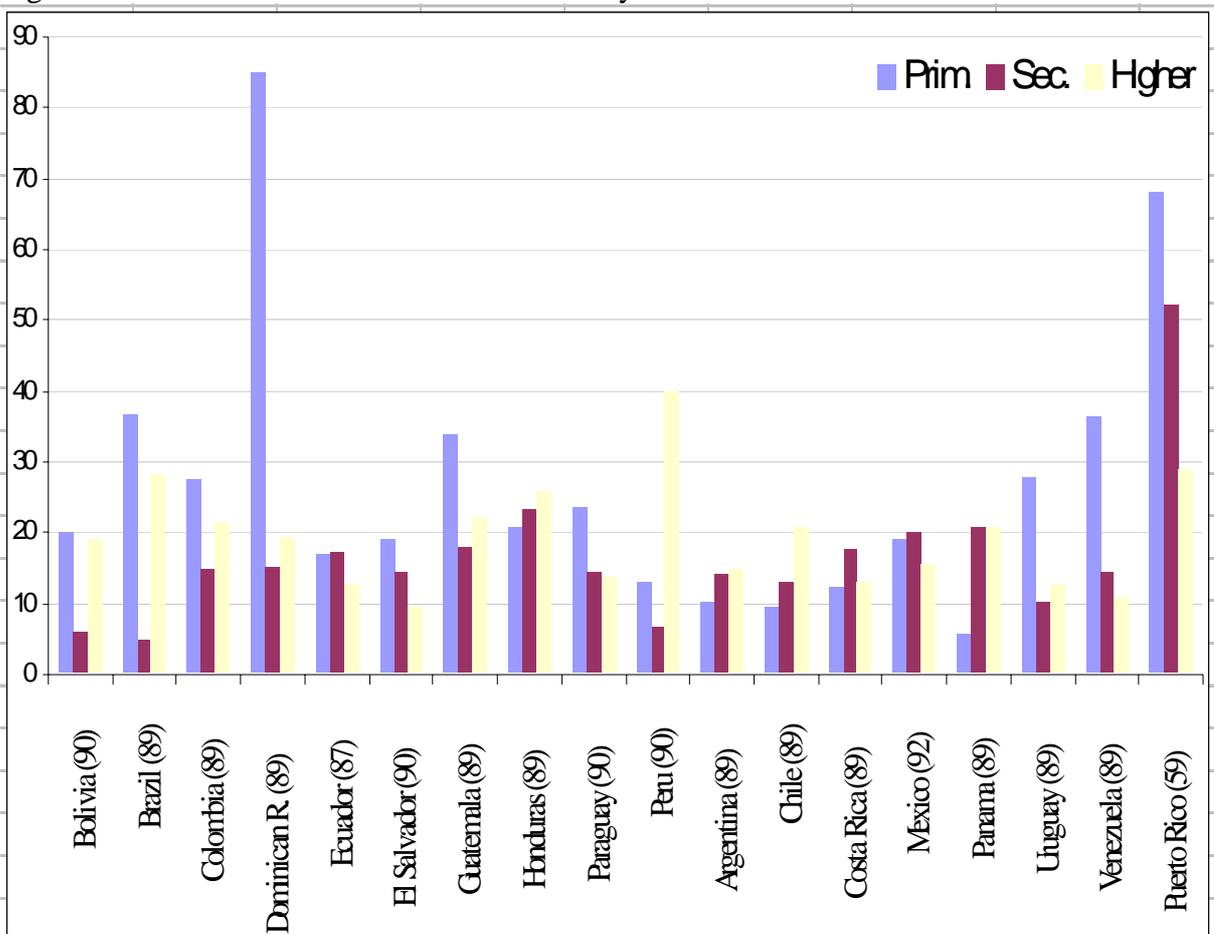
Source: Own illustration based on data from the World Bank’s education database

Figure 6: Private returns to education in Asia: by educational level



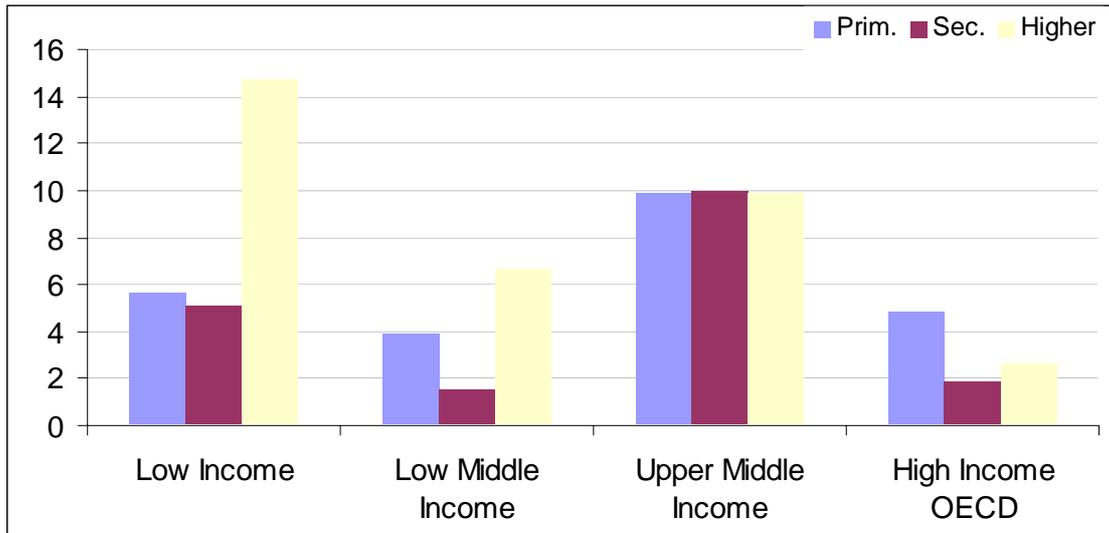
Source: Own illustration based on data from the World Bank's education database

Figure 7: Private returns to education in LAC: by educational level



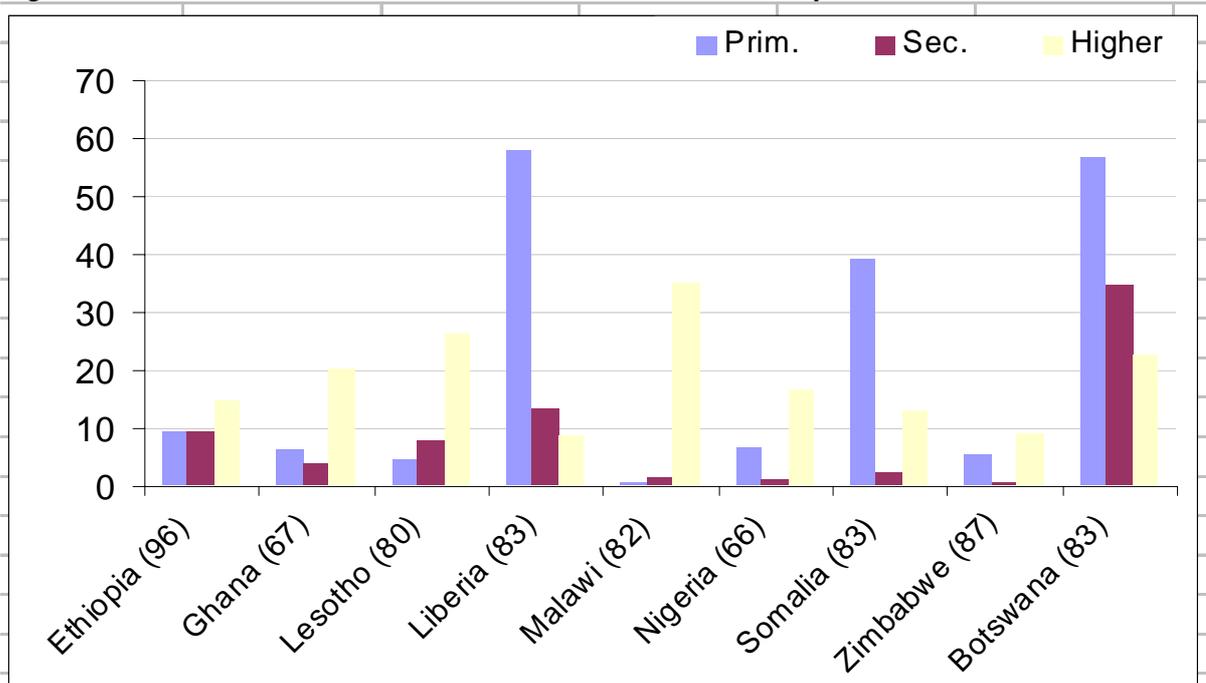
Source: Own illustration based on data from the World Bank's education database

Figure 8: Private minus social returns: by educational and income level



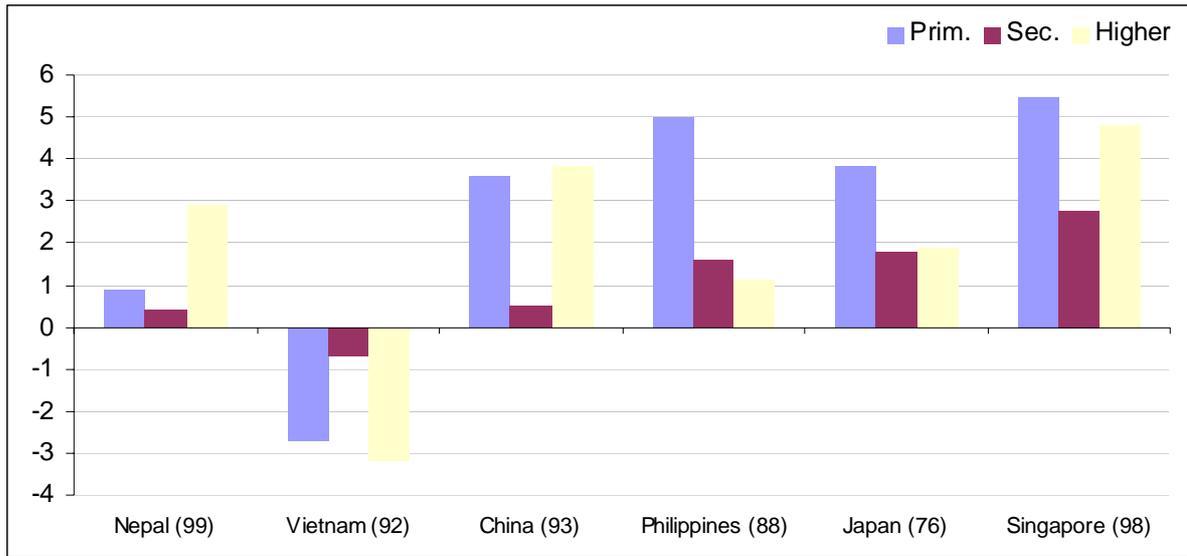
Source: Own illustration based on data from the World Bank's education database

Figure 9: Private minus social returns in Sub-Saharan Africa: by educational level



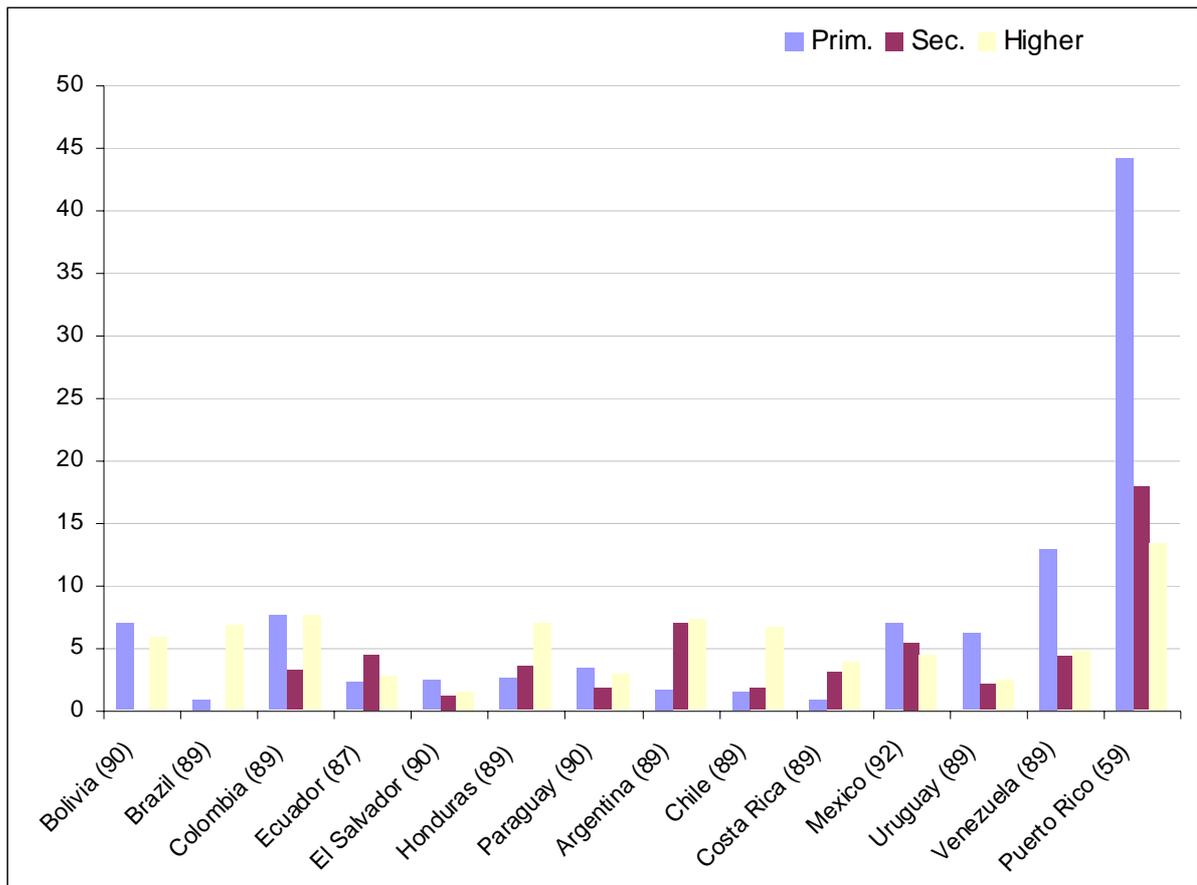
Source: Own illustration based on data from the World Bank's education database

Figure 10: Private minus social returns in Asia: by educational level



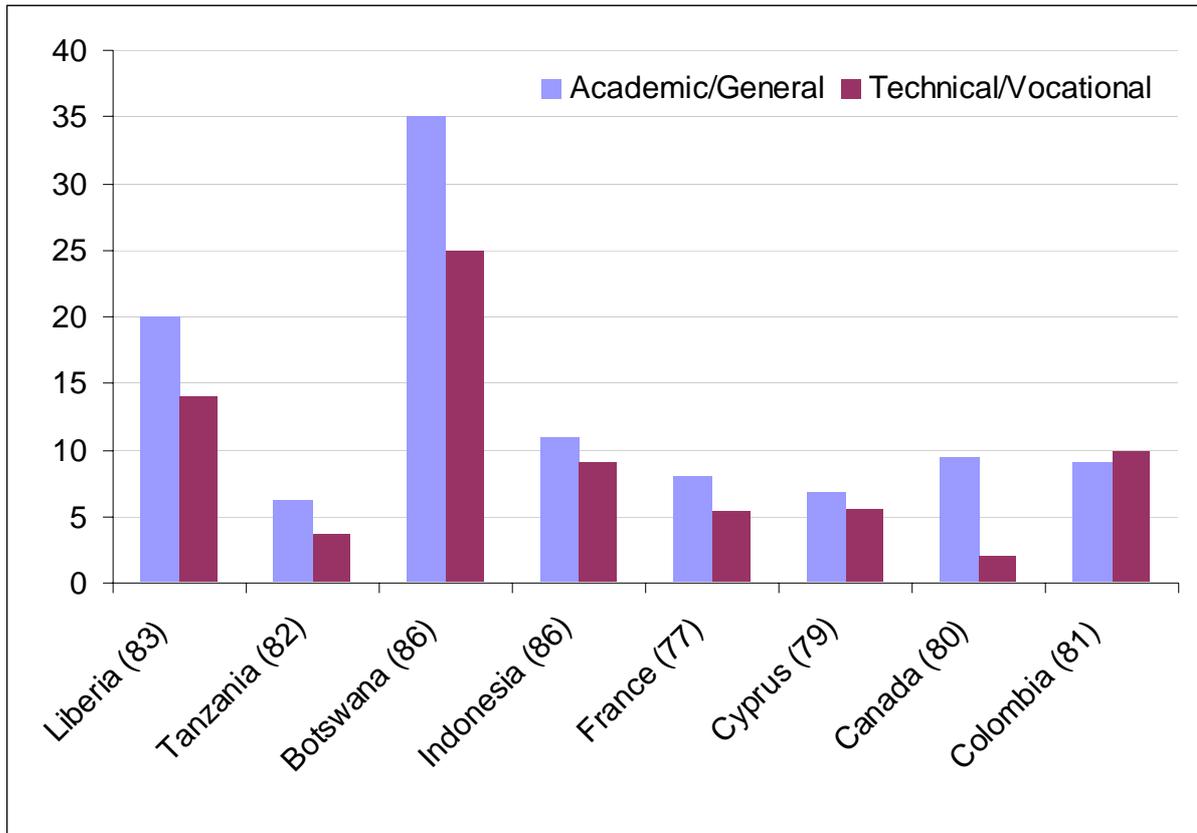
Source: Own illustration based on data from the World Bank's education database

Figure 11: Private minus social returns in Latin America: by educational level



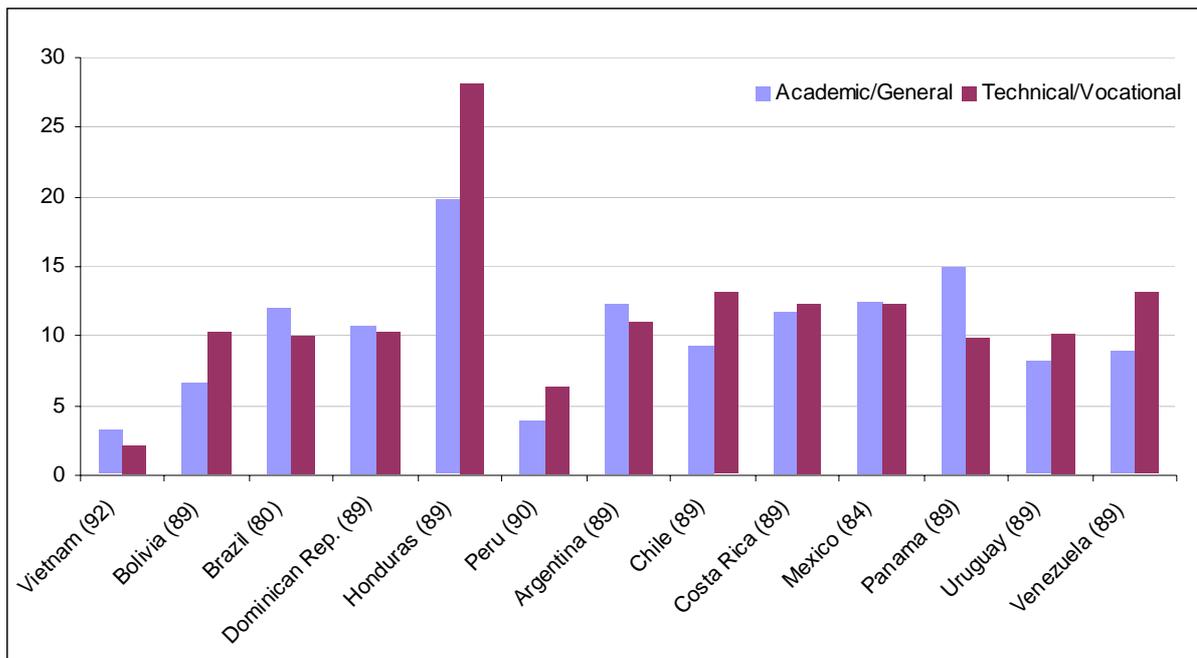
Source: Own illustration based on data from the World Bank's education database

Figure 12: Social returns to investments in academic/general- and technical/vocational education



Source: Own illustration based on data from the World Bank's education database

Figure 13: Private returns to investments in academic/general- and technical/vocational education



Source: Own illustration based on data from the World Bank's education database