

# 2013

ESP Working Paper Series

## **Innovative Financing for Global Education**

Innovative Finance Foundation

2013 No. 58

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# Innovative Financing for Global Education

Innovative Finance Foundation

*2013 No. 58*

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EDUCATION SUPPORT PROGRAM



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## Acknowledgments

This report was written by Robert Filipp and Leonard Lerer with contributions by Diego Filmus and Taya L. Owens.

The authors are indebted to the following individuals for their invaluable advice and support: Adam Short, Aleesha Taylor, Alice Albright, Andrew Lo, Carol Bellamy, Daniel L. Bond, Rt. Hon. Gordon Brown MP, Hugh McLean, Jose-Maria Fernandez, Liesbet Peeters, Liesbet Steer, Philippe Douste-Blazy and V. Srinivas.

The views expressed in this report are those of the authors and the authors bear sole responsibility for the report.

This report was made possible by financial support from the Open Society Foundations.

## Abbreviations

ACT	Artemisinin Combination Therapy
AfDB	African Development Bank
AMC	Advance Market Commitment
AMFm	Affordable Medicines Facility—Malaria
CCT	Conditional Cash Transfer
CSR	Corporate Social Responsibility
DCDB	Debt Conversion Development Bond
DfID	Department for International Development
DIB	Development Impact Bonds
ECCE	Early Childhood and Childcare Education
EFA	Education For All
FTT	Financial Transaction Tax
GAVI	Global Alliance for Vaccines and Immunisation
GEIB	Global Education Investment Bank
GESIB	Girls' Education Social Impact Bond
GPE	Global Partnership for Education
HIPC	Heavily Indebted Poor Countries
IDA	International Development Association
IFC	International Finance Corporation
IFF	Innovative Finance Foundation
IFFIm	International Finance Facility for Immunisation
IPO	Initial Public Offering
MDG	Millennium Development Goals
MDRI	Multilateral Debt Relief Initiative
ODA	Official Development Assistance
OECD	Organisation for Economic Co-operation and Development
OEI	Organization of Ibero-American States for Education, Science and Culture
OLPC	One Laptop Per Child
OSF	Open Society Foundations
SIB	Social Impact Bond
SRI	Socially Responsible Investing
SWF	Sovereign Wealth Fund
UK	United Kingdom
UNESCO	United Nations Educational, Scientific and Cultural Organization
WHO	World Health Organization
WWF	World Wildlife Fund

## About the Author

The **INNOVATIVE FINANCE FOUNDATION (IFF)** is a Swiss foundation dedicated to generating funding for social infrastructure and development. IFF undertakes research and advisory activities, designs campaigns and structures products in the field of innovative financing for health, education, nutrition, sanitation and the environment. By working with governments, government-linked funds, the financial community and organisations in development, IFF provides a platform for the public and private sector to benefit from each other's resources, reputations, expertise and networks.

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## Foreword

Innovative financing has made a real difference in meeting the UN Millennium Development Goals (MDGs), especially in health, by providing more than US\$7 billion in additional financial resources through a range of new institutions and partnerships.

In 2006, thanks to UK leadership at the time, we created the International Finance Facility for Immunization (IFFIm), which has raised almost 4 billion US dollars for the Global Alliance for Vaccines and Immunisation (GAVI) Alliance to vaccinate half a billion children by 2015.

Thanks to the French and Brazilian governments, we established UNITAID, which is mainly funded by an air ticket levy. Since 2006, travelers have raised over 2 billion US dollars, making it possible for 8 out of 10 children suffering from AIDS to get treatment. UNITAID also managed to reduce the costs of pediatric AIDS drugs by 80 percent.

These extraordinary achievements in the health sector must be replicated in global education, but how?

The Innovative Finance Foundation (IFF) presents here a comprehensive yet practical analysis of the current state of innovative financing in global education. The report's tenor is that education is a complex sector characterized by significant barriers to investment. But the report also shows how to break through these barriers using innovative financing such as solidarity levies and private sector investments through a global education investment bank. While I realize that much might be said about the idea for a global education investment bank, I would like to keep the following in mind:

- The world must work together in generating innovative financing for global education to honor our commitment to universal basic education. Given that the cost for a child's education is only US\$150 a year, we should be able to put millions of children into quality schools with innovative financing just like we managed to provide millions of people around the world with life-saving treatments for AIDS, tuberculosis or malaria.

Similar to global health, in global education we will need to consider an appropriate institutional underpinning for innovative financing that meets the requirements of both, the novel revenue streams and the goals of universal basic education.

In conclusion, I hope that this report will unite us all in our desire to put all the world's children into school with the help of innovative financing because education is the best defense against ignorance, conflict, and discrimination—and the ultimate foundation for peace and prosperity.

**Philippe Douste-Blazy**

United Nations Under Secretary-General &  
Special Advisor on Innovative Financing for Development

## Executive Summary

The application of novel financial approaches to generate additional and sustainable funding (innovative finance) for global education is influenced by the unique attributes of the education sector. These attributes determine the attractiveness of education as an investment sector for private and public actors with diverse and sometimes diverging objectives (profit, social impact) and time horizons.

The most relevant features of the education sector shaping the attractiveness of the sector for investment are:

- value chain complexity
- long time period between investment and results (financial or social impact)
- strong interdependency between all parts of the system posing challenges to “standard” interventions and prioritization
- predominant role of the public sector
- complex performance metrics
- low levels of R&D

Unique attributes of the education sector make it challenging to identify propositions that directly link investment to clear, measurable, and sustainable outcomes—unlike in health where, for example, vaccination is a focused, scalable investment with sustainable results.

How can innovative financing best be deployed in the education sector? The value-add of innovative financing to development over the last decade has not necessarily been the invention of entirely new mechanisms and financial technicalities but rather the creative leverage of existing funding and revenue streams, infrastructure, expertise and networks, which created a new impact in terms of:

- financing
- efficiency gains
- reduction of business risk

We reviewed a wide range of innovative financing mechanisms and discussed their utility for education financing, including:

- global taxation/ solidarity levies
- debt contract securitization for bonds
- development impact bonds (DIBs)
- debt swaps
- IDA buy-downs
- debt conversion development bonds
- advanced market commitments

- impact investing
- blended instruments
- microfinance and insurance

A number of these mechanisms have been implemented successfully in the health sector, generating some US\$7.15 billion in new funding since the concept of innovative financing was first introduced in 2002. We found that it would be hard to replicate most of the health mechanisms because of the fundamentally different investment case for education.

The various innovative financing mechanisms have different revenue and risk profiles and will appeal differently to the range of public and private investors. While the traditional development organizations, public-private partnerships (PPPs), and UN agencies are likely to favor public-sector driven mechanisms such as the financial transaction tax (FTT) and debt swaps, mechanisms involving more financial innovation and interventions in terms of how education is delivered are likely to be favored by the private sector (business and financial institutions).

In developing countries, assets worth more than US\$6 trillion are held by pension funds, insurance companies, mutual funds, etc. and these assets are growing by 15 percent per year. How can more private capital be mobilized for global education and what is the most attractive investment case that can be built around investing in education?

Despite the rise of private education in many low-income countries, investment opportunities in private education, especially basic education, remain limited. There are few clear opportunities for investors, especially because of obstacles related to transaction size and challenges leveraging partnership opportunities between public and private funders. The state still carries the brunt of education funding in almost every country.

We believe that the opportunities and limitations of the existing innovative financing mechanisms and the reality on the ground provide an opening for a financial platform in the form of a **global education investment bank (GEIB)**. Why create a GEIB? Because innovation in sustainable, equitable financing of education, especially for the poorest children on our planet, is lagging behind as private education grows and investment in other social infrastructure increases. There is an urgent need to reflect upon, consult with stakeholders, structure, and implement new approaches to education financing and a GEIB offers the opportunity to: provide leadership and inspiration through undertaking feasible innovative financing initiatives; support the panoply of players in the complex global education “system” by raising funds, especially for education innovations; structure and implement innovative financing; and offer governments, aid agencies, philanthropy, and private capital an opportunity for alignment, collaboration, and leverage that lead to more and better education investment.

We have put forward elements of a transaction flow for a portfolio that seeks out “investible” opportunities for public-private partnerships in enabling infrastructure, human capital, and services and technologies for education.

Despite considerable challenges, there are feasible options to deploy innovative financing for global education, not only to generate additional funding but also to advance innovation in the delivery of effective, impactful education.

## 1. Introduction

The concept of innovative financing for development was introduced 11 years ago, at the 2002 International Conference on Financing for Development held in Monterrey, Mexico. The rationale was to encourage novel approaches and initiatives, outside the traditional ambit of official development assistance (ODA), to generate additional, sustainable, and effective funding for the Millennium Development Goals (MDGs).

Achieving universal primary education is the second MDG goal—after alleviation of extreme poverty. In the development context, the term “global education” is frequently used to describe efforts to improve education systems and their many components. The Global Partnership for Education (GPE) is the main international initiative dedicated to advancing global education.

In global education, no scalable, innovative financing initiatives have been implemented as yet. However, over the last few years there has been significant interest in the topic and the first innovative financing mechanisms for education may be piloted soon. In February 2013, the African Development Bank (AfDB) announced plans to offer an Education Support Bond to Japanese retail investors. According to the AfDB, the net proceeds will be used to fund projects in the “field of education.”

In 2010, the Leading Group on Innovative Financing for Development established a task force on education and published a report that listed nine mechanisms to broaden the fundraising base for education: a financial transaction tax (FTT), local currency education bonds, venture funds, diaspora bonds, voluntary contributions from migrants, debt swaps, sports levies, public-private partnerships, and micro-donations from individual bank transactions.<sup>1</sup> Many of the proposed mechanisms have significant revenue generating potential but their implementation is largely dependent on government involvement and therefore on global political processes. This dependence makes them cumbersome to implement in the current economic and fiscal environment and also limits their utility in identifying, unlocking, and exploring truly new and alternative sources of funding for education.

The Open Society Foundations (OSF) supported the analysis and development of innovative financing for education. OSF convened experts from civil society, education, health, and the private sector to advance the understanding and implementation of mechanisms that have the potential to generate significant funding for the education sector and bolster the capacity of developing country governments to deliver quality education. In 2010, OSF published a working paper on innovative financing for education.<sup>2</sup> In addition to this study, OSF has supported the initial development of an education venture fund<sup>3</sup> and exploratory work on diaspora bonds, debt conversion development bonds (DCDBs), and impact investing.<sup>4</sup> OSF also supported a UNESCO Advisory Panel on Debt Swaps and Innovative Approaches to Education Financing, which reviewed a

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1. Writing Committee, 2010.

2. Burnett & Bermingham, 2010.

3. Results4Development, 2011.

4. Dalberg Research, 2012.

number of financing mechanisms with a strong emphasis on debt conversions and development bonds.

In 2011, the Global Partnership for Education (GPE) commissioned a report from the Innovative Finance Foundation (IFF) on the lessons learned in innovative finance and a review of opportunities focused on the collaboration potential with the capital markets and the private sector.<sup>5</sup>

The experience with innovative financing for education to date has been confined to a number of studies largely focused on specific innovative financing instruments with insufficient reflection on the interaction between the various financing mechanisms, potential backers or clients, and the value proposition of such mechanisms in terms of an impactful contribution to improvements in education systems.

What are the characteristics of the education sector that shape the attractiveness of the sector to a range of public and private investors? What is the unique value proposition of innovative financing for the sector and for the range of investors? What can innovative financing achieve that traditional development finance cannot? What are the different innovative financing mechanisms and what is their utility for global education? This report aims to answer some of these questions in the hope that the findings may catalyze action in terms of designing, planning, and implementing innovative finance worthy of the world's aspiration to achieve quality education for all.

The first chapter of this report addresses some of the characteristics of the education sector that are relevant for developing, structuring, and implementing innovative financing in education. The second chapter describes the value proposition of innovative financing, drawing on the experience in other sectors and posing the question of what unique contribution innovative financing can make to global education. The third chapter reviews the range of innovative financing mechanisms and discusses their utility for global education. The fourth and final chapter summarizes the findings and makes recommendations for the way forward.

This report is mainly focused on—but not necessarily limited to—education finance in countries that are eligible to receive funding from the GPE. The vast majority of GPE-eligible countries are International Development Association (IDA) countries, meaning that they have a Gross National Income (GNI) per capita of US\$1,195 (in 2011) or less and lack the financial capacity to borrow from the International Bank for Reconstruction and Development directly.

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5. IFF, 2011.

## 2. Global Education as an Investment Sector

The business case for using novel financial approaches to generate additional and sustainable funding (innovative financing) for global education has to take into account the defining characteristics of the sector. These characteristics shape the attractiveness of the sector as an investment target for a range of private and public sector players who have different objectives (profit, social impact) and different time horizons.

Experience has shown that it has not been possible to replicate in global education some of the successful, large-scale innovative financing activities executed in the health sector. There are structural and systemic differences between the education sector and other sectors that influence the interest in and demand for innovative financing solutions.

### **Box 1. Unique attributes of the education sector that shape its attractiveness for investors:**

- value chain complexity—including strong interdependency between the all parts of the system—poses challenges to “standardization” and prioritization
- long investment time frame
- predominant role of the public sector and low R&D
- complex performance metrics

There is a large body of literature on improving education systems, much of which discusses the relationship between funding, innovation, and outcomes in terms of learning, skills development, and enabling children and young adults to succeed in life. The 2012 *Learning Curve* report,<sup>6</sup> a global index of education attainment covering 40 countries, offers some insights into the characteristics and features of the education sector. Other studies, for example the 2010 McKinsey report *How the World's Most Improved School Systems Keep Getting Better*, describe the common features of education systems that were able to make significant improvements.

### 2.1 Value Chain Complexity

A value chain is a chain of activities performed in order to deliver a value through a product or service in a specific market.<sup>7</sup> A value chain has numerous steps and several components, such as infrastructure, human resources, technology, and procurement.

In global education, how do various parts of the value chain need to work together to deliver the most valuable product, i.e. education and enablement to succeed in life? There are no easy answers. The *Learning Curve* report highlights the small number of correlations between inputs and outputs, confirming that there are no simplistic solutions

6. Economist Intelligence Unit, 2012.

7. Porter, 1985.

in education. The McKinsey report offers the same conclusion about the complexity of education systems and highlights that there is little or no evidence of a “one-size-fits-all” approach to reform implementation.<sup>8</sup> This contrasts with the health sector, where a number of proven standard interventions exist that are assured to achieve the desired results, for example, all the value chain components are quite clear for the delivery of the anti-retroviral treatment against AIDS.

The role and importance of financial resources is viewed as yet another source of complexity when it comes to creating excellent education systems. Most studies acknowledge that money is important but as the *Learning Curve* report suggests, increased funding does not automatically guarantee performance; countries with similar levels of income that spend more on education do not necessarily score higher on international assessments.<sup>9</sup> A similar situation exists in healthcare. For example, the U.S., which spends the greatest proportion of its GDP on health products and services of all OECD countries, scores poorly when it comes to health outcomes such as life expectancy.

With regard to human resources there is a difference in emphasis among the studies. While McKinsey attributes improvements in education systems to ensuring appropriate reward and remuneration structures for teachers and principals, the *Learning Curve* report finds that teacher quality and retention is not necessarily a question of pay. Instead, teachers needed to be treated as valuable professionals, not simply as technicians in a huge educational machine. This approach ensures better teacher motivation, performance, and retention rates.

With regard to technology, it should be firstly noted that education, and primary education in particular, is still generally regarded as a classic “one teaches many” environment. The paradigmatic illustration of education access in the poorest countries remains the photograph of a teacher, a blackboard, and a group of young children under a tree. The “one teaches many” approach tends to frame and limit the potential for global education to truly leverage the remarkable advances in digital technologies. Devices such as tablets and Internet access tend to be regarded as educational tools to be deployed in the service of teachers, rather than technologies that make it possible to deliver quality, customized “one-to-one” education to every child on our planet. We must, however, accept that educational technology development is still quite early in its development. Yes, tablets, wireless, and other options exist, but if one takes the case of university education (well advanced on the digital highway), there is still considerable controversy concerning innovations such as massively diffused online courses. There is little doubt that technology will become more and more attractive as a funding and investment opportunity in education. How much value technology can truly add in terms of real outcomes is and will continue to be a perennial source of debate.

In relation to procurement as part of the education value chain, there is little doubt that opportunities exist to increase efficiency and save costs, but it should be accepted that the physical input costs (teaching materials, classroom equipment, consumables, etc.) are dwarfed by the human resources costs (salaries, training, long-term pension liabilities, etc.).

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8. Mourshed, Chijioke, & Barber, 2010.

9. Vegas & Coffin, 2012.

Given the strong interdependency between of the various parts of an education system, interventions are frequently aimed at all parts of the system simultaneously, creating challenges for prioritization and implementation. These interventions tend to be driven by the public sector, often with the encouragement and support of international agencies such as GPE. Complexity must not mean paralysis, however. Significant improvements in student learning are possible across different countries and different systems irrespective of the starting point, especially when the emphasis is on process—how the instruction is being delivered—rather than on resources and systemic structures.<sup>10</sup> The commonality among different education systems/countries that have managed to move from poor to good performance has been a focus on the “how” and not on the “what.”

### 2.2 Investment Time Frame

The investment time frame is the period between the investment and the return, be it a financial return or social impact. For private investment, this often includes a timeline with regards to the exit from the investment, which is usually tied to specific financial or social impact milestones. Looking at primary education in the poorest countries, it is quite challenging to clearly identify the point at which enduring impact and sustainability has been reached. In health, for example, an investment such as vaccination is a short-term, scalable activity with clear, measurable, and sustainable results. Improvements in education outcomes, on the other hand, require consistent and long-term focus, which means that they have relatively long investment horizons and that the full impact of investments will only emerge after a long period—education requires long-term, coherent, and focused system-wide attention to achieve improvements.

The current crisis related to youth unemployment provides a cogent example of the challenge related to education investment time frames. Young people are often ill-equipped to find gainful employment in many industrialized countries. This is the result of a range of educational decisions made at the primary school level, many linked to government education policy. Long-term investment decisions in education need considerable reflection, as the “output” of educational institutions can make a major difference to economic development. For example, investment in vocational training can provide human resources for sectors generating considerable youth employment.

### 2.3 Role of the Public Sector

In most countries, the role of government and public funding has historically been strong—governments remain the main funders and providers of education, especially primary education. Because of its complex investment proposition, education, especially primary education, is largely regarded as a “governmental game” by investors.

The dominant role of government has led to under-development of private education, especially when compared to private healthcare. Nevertheless, in many countries, including emerging economies, developing countries, and fragile states, a growing

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10. Mourshed, Chijioke, & Barber, 2010.

share of education is being delivered by the private sector.<sup>11</sup> Private enrollment has increased faster than public enrollment in recent years. Enrollment in private primary education grew by 58 percent between 1991 and 2004 (from 39 to 62 million), while public enrollment grew by only 10 percent (from 484 to 530 million) during the same period. Sub-Saharan Africa, the Middle East, and South Asia are the regions with the largest growth in private education.<sup>12</sup> There is also growing interest in private operators to run public education systems, as a recent example from Sweden highlights.<sup>13</sup>

All these developments are likely to offer new opportunities for innovation in the delivery of education and new public-private partnerships in the years to come. What is required is detailed analysis of the stratification of interventions and characteristics of global education, to address who needs financing for what, which are the best financing partners/investors, and what specific financing mechanisms would work best.

## 2.4 Measurement of Returns

The underlying attractiveness of education for a range of investors will inevitably be based on “what is being financed” and the returns in terms of impact, sustainability, economic growth, and earning potential, as well as human development, and—for some—commercial viability. Fundamentally, the foundation for developing an innovative financing portfolio lies in the feasibility and impact of the interventions for which funding is being generated. Similarly, investors want the reassurance that they are backing a winning concept and that implementers are indeed capable of delivering in an effective and efficient manner. Finally, given the complexity of the education sector, investors need comfort concerning governance, control, and—most importantly—measurements and evaluation.

There is a substantial body of research estimating the impact and social return of global education. The GPE offers some data, observing that GPE partner countries have performed better than their peers:<sup>14</sup>

- Repetition rates in GPE countries have declined by 5 percent on average, compared to a 1.3 percent decline in non-GPE countries. The median cost of primary education (as a share of GDP per capita) in GPE countries is not any higher than that of their peers, yet enrollment and completion have expanded while repetition has decreased.
- Primary enrollment in GPE countries grew at a median rate of about 3.7 percent per year, compared to an essentially zero percent growth rate in non-GPE countries.
- Secondary enrollment in GPE countries increased to a 1-to-1 ratio with primary completion rate growth, regardless of direct funding.

Education can be regarded as the archetypical “public good” where society as a whole is rewarded for its investment in future generations. For the poorest families, education has always been thought of as the most effective way to ensure that children have better lives than their parents. This “return” in terms of increased earnings, women’s empowerment, improved health status, etc., is for all intents and purposes not relevant

11. Patrinos, Osorio, & Guáqueta, 2009.

12. Aga Khan Foundation, 2007.

13. Economist, 2013.

14. Crouch, 2011.

to parties seeking pure financial return from educational investments, except to the extent that it is the promise of an improved life for their children that would make parents spend money on private education offerings or that governments may seek efficiencies and savings by conferring public schools to private management companies.

In addition to quantitative results, the qualitative outcomes of education are a frequently discussed concern among education experts. This is an additional challenge in terms of the measurement of return. Experts appear to agree that an emphasis on the “how” rather than the “what” can improve education quality in terms of achieving real enablement of young people. A number of interventions and measurements have been developed to show that it is possible to improve the quality and delivery of educational infrastructure with relatively small incremental investments based on specific identified *enablement gaps* (cognitive skills, for example) in the existing educational systems and then building—and measuring the effectiveness of—*precision interventions* that address these gaps.<sup>15</sup>

Education is regarded as one of the keys to sustainability, as it is vital to long-term social, economic, and even environmental wellbeing. Without education, it is impossible for societies to be responsive and responsible. The link between education and sustainability is a good illustration of the difficulty in measuring the true social return of investment in education, as the values inculcated by a good educational system manifest mainly in adulthood, and especially when people are old enough to make decisions as parents, voters, policymakers, investors, entrepreneurs, etc.

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15. Illumine, 2013.

### 3. Value Proposition of Innovative Financing

Since the concept of innovative financing was first introduced in 2002, there has been a recurrent discussion about the value it adds to global development. What can innovative financing achieve, that traditional aid cannot? Looking back at the contribution innovative financing has made to development and specifically to global health over the last decade, it appears that its novelty is not necessarily the invention of entirely new financing mechanisms but rather the creative leverage of existing funding and revenue streams, infrastructure, expertise, and networks to generate new and desired impact in the domains of financing, efficiency gains, and reduction of business risk.

#### 3.1 Financing

A detailed analysis of the global contribution of innovative financing mechanisms to development finance is hampered by incomplete, un-standardized disbursement data and by the number of instruments and initiatives described as innovative financing.<sup>16</sup> The Brookings Institution has mapped more than 90 examples of financing initiatives classified as “innovative” in the health sector.<sup>17</sup>

While there may be many innovative financing *initiatives*, these should be distinguished from the relatively few innovative financing *activities* that are actually generating substantial and sustainable revenues for development. Since 2002, only the health sector has generated substantial additional revenues—approximately US\$7.15 billion—through a handful of global innovative financing initiatives (see Table 1).

**Table 1.** — Major global innovative financing activities

Initiative	Description	US\$ (billions)
<b>International Finance Facility for Immunization (IFFIm)</b>	Vehicle that uses long-term pledges from donors as guarantees for bond issuance to accelerate vaccinations programs by the GAVI Alliance	3.7
<b>UNITAID</b>	Program financed by an air ticket levy and donor contributions to reduce drug prices and accelerate access in “niches” such as 2 <sup>nd</sup> line ARVs, MDR-TB and pediatric formulations	1.6
<b>Advance Market Commitment (AMC)</b>	Mechanism that allows procurement of a fixed quantity of vaccines at a fixed low price by making funds available upfront and committing suppliers to offer the vaccine at a lower price	1.5
<b>PRODUCT (Red)</b>	Privately owned marketing brand that licenses companies to sell (Red) merchandise and donate a percentage of profit to fighting AIDS in Africa	0.18

16. Sridhar & Batniji, 2008.

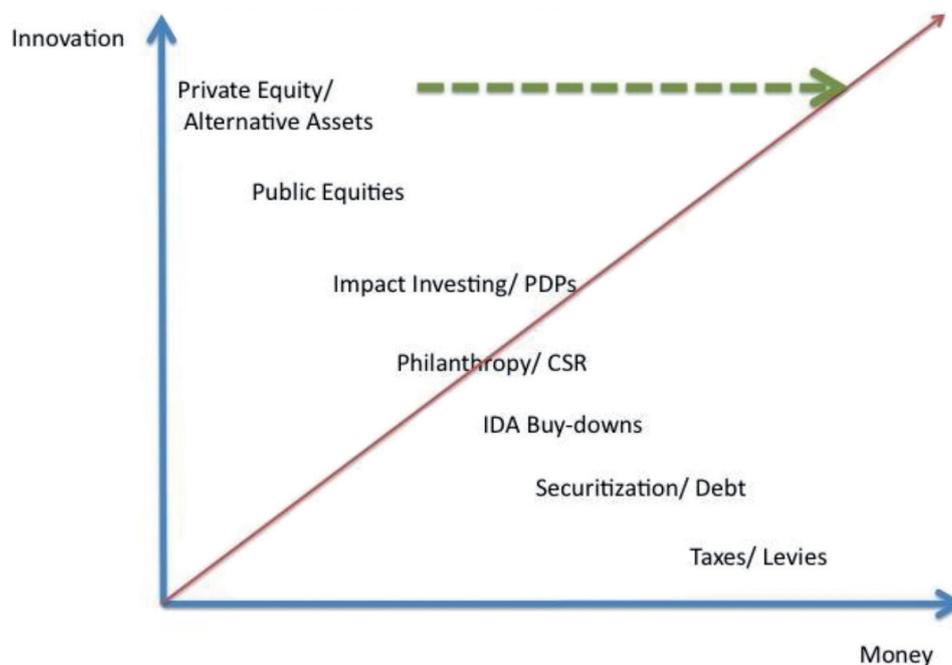
17. Glassman et al., 2008.

<b>Debt2Health</b>	Debt swap program of the Global Fund to Fight AIDS, Tuberculosis and Malaria where donors cancel bilateral debt against debtor counterpart payments to Local Global Fund approved programs	0.17
<b>TOTAL</b>		<b>7.15</b>

To date, the majority of the global innovative financing initiatives have relied heavily on public revenue streams in the form of taxes (airline solidarity levy), government pledges for securitization (bonds), subsidies (Advance Market Commitments), or sovereign debt swaps to generate new funding.

Public revenues and government support is likely to remain important for innovative financing in the future because innovative financing for development is aimed at the social sector, a domain that is largely supported by public money. However, as opportunities to tap into new taxes diminish over time, one can expect to see stronger interest in opportunities further up the innovative financing spectrum that include more sophisticated financial innovation, financial engineering, and the capital markets, as well as new partnerships with private foundations and social impact investors. The more innovative solutions currently remain underutilized—social impact bonds, impact investing, blended instruments, and other public-private mechanisms that work with the capital markets. Successful diversification will lead to more innovative financing revenues (see Figure 1).

**Figure 1.** — *Diversification will generate more innovative financing*



Source: Innovative Finance Foundation (IFF)

The largest private foundations and corporations based in industrialized countries provide an estimated US\$683 million per year to support education in developing coun-

tries.<sup>18</sup> While this is a very small amount when compared with national education budgets, and equivalent to just 5 percent of ODA, private contributions are critical as they have the potential to catalyze innovation, advance policy reform, and address the education needs of marginalized populations.

Within the international aid architecture, structures such as the GPE play an important role in leveraging existing resources such as national budgets, development assistance, philanthropy, and—to a lesser degree—corporate social responsibility (CSR) funding. However, the extent of leverage depends on sufficient and predictable revenue streams.

Given that overall development aid has been declining in real terms since 2011, aid flows to education are expected to stagnate until 2015.<sup>19</sup> If the share of education as a proportion of global aid remains at the current 13 percent, then direct aid to the education sector will remain at its current annual level of around US\$13 billion, which is short of the US\$16 billion per year needed to achieve the “Education for All” (EFA) goals by 2015.<sup>20</sup> The GPE has experienced first-hand the limitations of a resource mobilization strategy that is almost exclusively focused on the largess of a few industrialized countries that have strict limitations as to what proportion of their aid budgets will be devoted to global education. Between 2001 and 2011, donor contributions to the Global Fund to Fight AIDS, Tuberculosis and Malaria totaled US\$22 billion—around 10 times as much as those made to the GPE. In addition, global health receives contributions directly from foundations and corporations, as well as through innovative financing mechanisms such as the IFFIm, UNITAID, Debt2Health, and Advanced Market Commitments. While these sources contribute only about 7 percent of total pledges to global health, hardly any similar revenues are realized in education.

The system-wide funding approach of the GPE appears to have had positive leverage on domestic government resources. A number of GPE countries have committed to increase spending on education from a cumulative total of approximately US\$7.4 billion in 2011, up to US\$8.4 billion in 2012, US\$9 billion in 2013, and US\$9.8 billion in 2014.<sup>21</sup> Real spending on primary education in 21 countries increased on average 6 to 9 percent per year between 2000 and 2008, exceeding GDP growth in these countries.

Can domestic revenue streams be used in order to mobilize additional, innovative financing for education? Most GPE-eligible countries do not offer any real opportunities for significant leverage due to their weak financial capacities, but a few—especially resource-rich GPE-eligible countries—could use revenue streams from future natural resource sales income to guarantee bonds and social impact bonds (see chapter 2).

### 3.2 Efficiency Gains

The role of innovative financing in strengthening the value chain has been well documented, especially for the large multilateral public-private partnerships in health such as GAVI, the Global Fund, and UNITAID. These partnerships have “tightened” the value

18. van Fleet, 2012.

19. UNESCO, 2012b.

20. OECD, 2012.

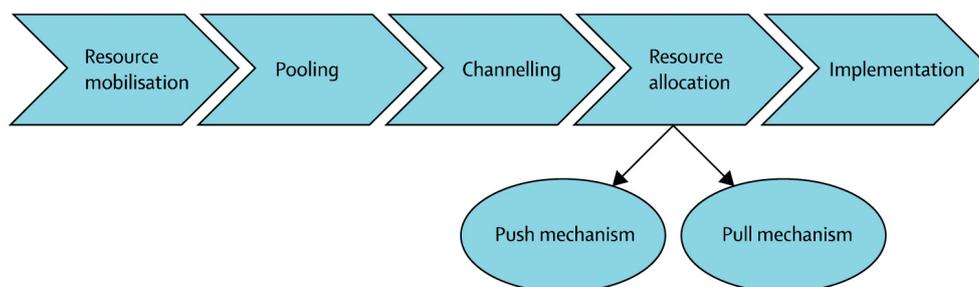
21. GPE, 2011.

chain in different respects.<sup>22</sup> GAVI and the Global Fund have innovated by improving resource allocation by including civil society and the private sector in decision-making and by allocating funds according to need and results with a performance bonus to create incentives for program implementation improvement. UNITAID has strategically targeted areas where it could best leverage its funds, by substantially affecting prices of medicines and diagnostics and by funding medicines to treat multi-drug-resistant tuberculosis and anti-retroviral treatment for children in initiatives supported by the Global Fund, reducing the cost of quality second-line anti-retroviral treatment by more than 50 percent.<sup>23</sup>

The terms of innovative financing, particularly duration, predictability, and whether or not it is tied to specific uses, affects intervention efficiency within recipient countries. Through tying aid to quantitative performance indicators, these innovative financing mechanisms have contributed to efficient program management and accountability.<sup>24</sup> By extending the duration of their aid support and analyzing longer-term financial sustainability issues, GAVI and the Global Fund have developed economies of scale.

Recently, forms of bridge financing have been deployed in the context of procurement of commodities such as anti-malaria bed nets in order to speed up the business process from approval of a program to the actual procurement of a commodity. The NetGuarantee vehicle of the Malaria No More initiative offers payment guarantees to manufacturers before grant recipient countries actually receive the approved funding from international donors. NetGuarantee claims that the average procurement time of bed nets has been reduced from 18 months to 12 months with the payment guarantee to manufacturers.

**Figure 2.** — *Efficiency gain in global health value chain*



Source: Atun et al., 2012

Within education, a space exists for innovative financing to increase the efficiency of the value chain by pooling, channeling, and targeting resources that maximize impact on education outcomes. Using innovative finance to target initiatives with a comparative advantage can complement local governmental resources rather than displace them. A review of education aid in 26 sub-Saharan countries concluded that “innovative ideas, applicable within established education systems, and the resources to finance them, are more likely to emerge from cross-fertilization of approaches across

22. Atun, Knaul, Akachi, & Frenk, 2012.

23. UNITAID, 2011.

24. Writing Committee, 2010.

international boundaries than from within the structure of the education ministries.”<sup>25</sup> In low-income countries, a very high share of public education budgets is used for teacher salaries, resulting in fewer funds for teaching materials and quality inputs other than teachers. A detailed review of studies with rigorous evaluations of public-private partnerships shows that privately funded initiatives can generate substantive support for non-salary inputs, such as building school infrastructure, expanding equitable access, and improving learning outcomes.<sup>26</sup>

Finally, innovative financing initiatives can address education goals beyond primary education. Universal primary education has created greater demand not only for secondary education, but also for pre-primary or early childhood and childcare education (ECCE). Evidence also shows that although increased participation in pre-primary school programs results in increased system efficiencies through higher quality learning outcomes and primary school completion rates,<sup>27</sup> ECCE has yet to be included in most public policy agendas.

### 3.3 Reduction of Business Risk

The problem of high business risk and market failures is especially prevalent when attempting to replicate innovative education initiatives from middle-income countries, particularly those related to the use of information and communications technology (ICT) in the poorest countries. It is here where innovative finance can create synergies with *disruptive innovation* to revolutionize the access and quality of education for children in areas lacking quality schools and teachers.

Clayton Christensen has coined the term *disruptive innovation* as a “game-changer” for an industry or sector. According to Christensen, a disruptive innovation occurs when a provider of goods or services finds a way to deliver a simpler, more affordable product that opens a market to consumers who find existing products too expensive.<sup>28</sup> Christensen has highlighted online education as a game-changer and a growth industry.<sup>29</sup> The game-changer in education is the possibility to provide free educational content to anyone anywhere via the Internet and myriad other devices. An example of such a disruptive innovation is Khan Academy. Started in 2008, the Academy is an online not-for-profit that provides free education for anyone anywhere with Internet connection and a computing device. Khan Academy has developed a library with over 4,100 videos in various topic areas and some 244 million lessons have been delivered. It continues to grow rapidly, thanks in part to support from the Bill and Melinda Gates Foundation, Google, Bank of America, and other private sector sponsors.<sup>30</sup> To further the reach of Khan Academy, the Latin American Network of Education Portals (RELPE), the Inter-American Development Bank (IDB), and Intel Corporation have joined to translate Khan Academy courses into Spanish and

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25. Marope & Sack, 2007, p. 17.

26. Patrinos, Osorio, & Guáqueta, 2009.

27. Bruer, 1999.

28. Christensen, 1997.

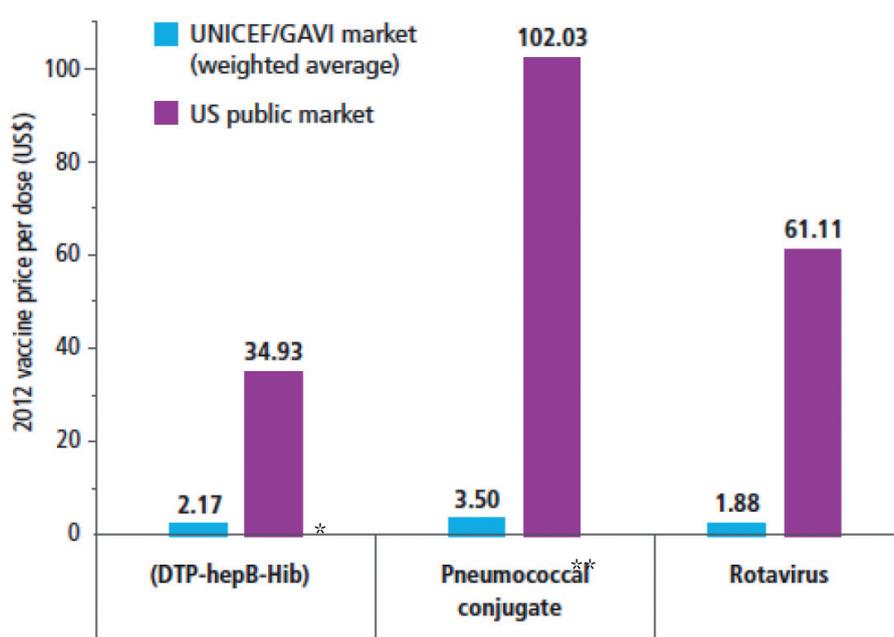
29. Christensen & Horn, 2008.

30. Khan Academy, n.d.

Portuguese and to make these available on the devices of various 1-to-1 programs in the region.<sup>31</sup>

In the health sector, Advance Market Commitments (AMCs) have tackled the longstanding problem of persistent market failure in the development and production of vaccines due to perceptions of insufficient demand or market uncertainty. An important benefit of AMCs is more equity in terms of access to the latest R&D and technology in developing countries. This is made possible as a result of AMC principles, which impact the availability of a product at affordable prices.

**Figure 3.** — *AMCs shape the market and narrow the equity gap*



\* The UNICEF/GAVI price is the weighted average across suppliers and presentations of pentavalent vaccine and reflects the cost of whole-cell pertussis vaccine; the US public market price is the lowest total price per dose for separate DTP, hepB and Hib vaccines and reflects the cost of acellular pertussis vaccine.

\*\* The UNICEF/GAVI price is the tail price under the Advanced Market Commitment (AMC); the US public market price is for 13-valent vaccine.

Source: UNICEF Supply Division, CDC Vaccine Price List

The AMC principles could be applied to the production of affordable technology devices, infrastructure, and services that suit the education sector of developing countries. Intel's white paper *Funding Models for eLearning in Education* promotes two risk-reducing approaches.<sup>32</sup> Firstly, government-backed loans protect lenders and allow borrowers to secure lower interest rates. Secondly, bundled service agreements with ICT companies are widely used to allow education systems to obtain technology equipment and services

31. RELPE, 2012.

32. Intel Education Technology Adviser, 2012.

at very competitive prices. In Argentina's Conectar Igualdad, the largest 1-to-1 program in the world, the national social security fund, ANSES, is financing the program in exchange for government bonds, having secured \$300 million in 2010, and \$1 billion for 2011 and 2012/13, respectively.<sup>33</sup>

Global education has indeed entered an exciting era. There are a range of business opportunities related to the diffusion of digital technologies and, therefore, there are real business risks. There is little doubt that organizations committed to ensuring that every child has access to good quality education should be doing more to encourage entrepreneurial activity in the delivery of education.

### **Box 2. Transformational innovation in global education**

Charles Leadbeater and Annika Wong's 2010 *Learning from the Extremes* report notes that to get learning at scale to hundreds of millions in the poorest countries, "transformational innovation" will be needed—creating new ways to learn new skills outside formal schooling. These programs have the following features:

- Pull families and children to learning by making it attractive, productive, and relevant.
- Rely on peer-to-peer learning rather than formal teachers.
- Create spaces for learning where they are needed, rather than just using schools.
- Start learning from challenges that people face rather than from a formal curriculum.

*Learning from the Extremes* describes transformational innovation being pioneered by social entrepreneurs such as Sugata Mitra, whose work shows how, with the help of a non-teacher mediator, computers can promote self-organized learning, especially in places where teachers are hard to recruit. In 2013, Sugata Mitra's School in the Cloud project earned top prize at TED. The prize provided the initiative with US\$1 million to build a learning laboratory based on the plan to "recruit technology, architecture, creative, and educational partners to help design and build the School in the Cloud in India designed to test a range of cloud-based, scalable approaches to self-directed learning."

With sustainable, long-term funding and closer integration with public sector education, initiatives like School in the Cloud can promote disruptive innovation and, once scalable, can be rolled out to regions still lacking quality schools and teachers. Effective planning and implementation of major technology initiatives can result in significant cost savings to schools and education budgets, and offer excellent opportunities to improve the effectiveness of global education.

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33. Intel Learning Series, 2011.

## 4. Innovative Financing Mechanisms and Utility for Global Education

Innovative financing offers a wide range of mechanisms and vehicles, some of which have been tested in other social infrastructure sectors and some of which are only emerging. The majority of the existing mechanisms have been conceived as global initiatives, driven by the public sector to support global public-private partnerships. While global initiatives tend to be the natural focus of international development organizations, there are numerous other excellent opportunities that tend to fall to the wayside because they require more of a “stretch” in terms of expertise, partnerships, and risk.

To date, there has been only limited financial innovation in the global education arena. We have outlined the reasons, particularly that education is still perceived to be mainly a public good and a public sector game. In the long run, as opportunities for global, public-sector-driven initiatives diminish over time because only so many taxes, subsidies, and government commitments can be realized, financial innovation and untapped domestic opportunities are likely to play a greater role. Using all opportunities optimally is one of the challenges for any innovation-focused resource mobilization strategy.

### 4.1 Global Taxation

Global taxation as an instrument of finance development aid has a long and controversial history. In the area of innovative financing for development, the breakthrough was the introduction of the airline solidarity levy to fund global health in 2006. The airline tax is collected at a number of airports in nine participating countries.<sup>34</sup> The most significant share—about €350 million per year—comes from France, where fliers are charged €1 for domestic/intra-EU economy class, €4 for international economy, €10 for domestic/intra-EU first and business class, and €40 for international first and business class. In January 2013, France announced that the tax had collected 1 billion Euros since its inception in 2006. Underpinning the tax is the notion that global solidarity could provide additional finance for urgent global health challenges—HIV/AIDS, tuberculosis, and malaria.

Airline tax revenue is paid out to UNITAID, an independently governed initiative administratively hosted by the World Health Organization (WHO). UNITAID disburses the funds as grants to eligible countries, mainly for medicines and other commodities in the three disease areas. In order to differentiate itself from other organizations in global health, UNITAID developed a special focus on “niches,” such as pediatric formulations of anti-retroviral treatment and treatment for multi-drug-resistant tuberculosis and a focus on patent pooling and price negotiations.

Another example of global taxation is the financial transaction tax (FTT). In 2011, motivated by the global financial crisis and to the surprise of many observers, 11 EU mem-

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34. Cameroon, Chile, Congo, France, Madagascar, Mali, Mauritius, Niger, and the Republic of Korea.

ber countries<sup>35</sup> agreed to a proposal of the European Commission to introduce the EU financial transaction tax (EU-FTT) by January 1, 2014. The tax would be due on financial transactions between financial institutions, charging 0.1 percent against the exchange of shares and bonds and 0.01 percent across derivative products every time a trade takes place if one of the trading institutions resides in an EU FTT member state. Projections of revenue are about 57.4 billion Euros.<sup>36</sup> Despite this development, there is concern among development advocates about the use of the tax. Already in 2011, the G-20 at their Cannes summit rejected an FTT proposal to finance development and there has been no binding commitment from the EU countries to dedicate part of the FTT revenues to funding development aid. France has been the first country to formally commit 15% of the FTT to development, mainly to finance its commitments to the Global Fund to Fight AIDS, Tuberculosis and Malaria and anticipated commitments to the new Green Climate Fund (CGF).

Promising for the global education sector are on-going efforts by the United Nations Special Advisor on Innovative Financing and the IFF to put in place a global solidarity levy funded the extractive industries.

Potential: There is a persuasive case to be made for solidarity levies and an FTT revenue allocation to global education based on the somewhat limited opportunities for private capital, the pre-dominant role of government in the sector, and the need to sustain the positive leveraging effect of the GPE on national education spending. Advocacy for a development allocation of at least 15% and an education allocation of at least 50% is recommended with the G-20 through the Leading Group on Innovative Financing for Development.

## 4.2 Debt Contract Securitization for Bonds

Securitization is a financial practice of pooling contractual debt and selling it in smaller tranches to investors as a debt instrument including bonds. A bond is an investment in a debt, whereby the investor receives a fixed return on the principal and interest of the underlying security. Borrowing from investors in the capital market involves the issuance of a bond certificate that states the interest rate (coupon) and the time when the funds (bond principal) will be returned (maturity date). The key determinants of a bond's interest rate are credit quality (credit rating) of the borrower and duration of the loan. Bond maturities can range from very short (90 days) to very long (30 years).

Debt issuance for social purposes and development has been part of the bond market for many years, largely driven by the need for funding in areas such as water, sanitation, climate, and health. The paradigmatic innovative financing mechanism in this space is the vaccine bond issued by the International Finance Facility for Immunization (IFFIm). Under this innovative financial structure, governments provided long-term, contractually binding pledges to a special purpose vehicle, the IFFIm, which in return securitized those pledges for a bond issue to investors in the capital market. This financial engineering process allowed IFFIm to “frontload” aid to finance a scale-up in vaccinations based on the rationale that there would be tangible benefits in lives saved and health system

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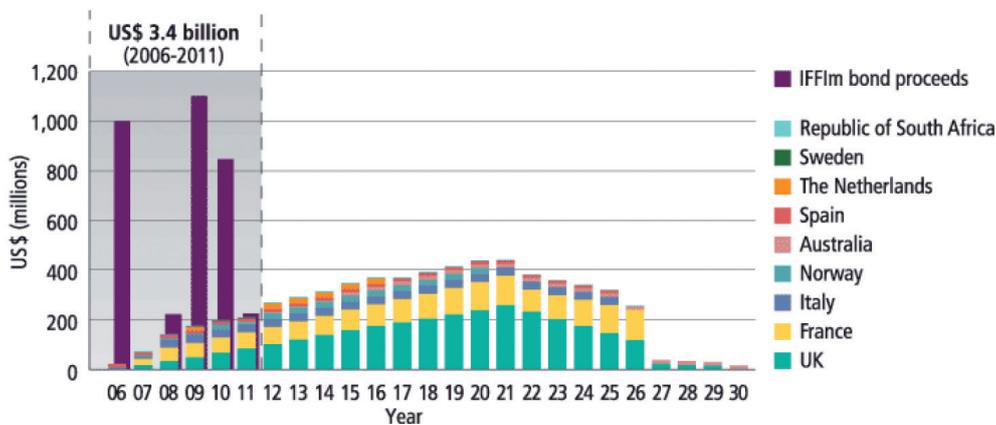
35. Austria, Belgium, Estonia, France, Germany, Greece, Italy, Portugal, Slovakia, Slovenia, and Spain.

36. European Commission, 2011.

savings. Moreover, given that government debt of most of the IFFIm supporters was rated very highly at the time of the first IFFIm bond issues, the bond could attract the best rating of “AAA.” Since the financial crisis, the rating of the IFFIm bonds has been downgraded to AA+.

Launched in 2006 by the United Kingdom (UK) government, the IFFIm has received pledges of US\$6.3 billion over a 23-year period. To date, the IFFIm has issued bonds worth US\$3.7 billion. Funds raised by the IFFIm bonds are earmarked for GAVI, a public-private partnership that works to reduce the number of vaccine-preventable deaths and illness among children under five.

**Figure 4.** Binding long-term pledges securitized for vaccine bonds



Source: World Bank

Given the success of vaccine bonds, many have been wondering if one could create an IFFIm-type vehicle to finance a push in global education. Generally, the requirements for an IFFIm-type innovative financing mechanism are:

- persuasive business case for “frontloading”
- available contractual debt for securitization
- institutions that use the funding in a manner that ensures the desired impact
- measurement of results

The existing innovative financing debt issuance vehicles, such as the IFFIm, used development aid for securitization. In a number of resource-rich countries that receive support from the GPE, closer collaborations with sovereign wealth funds (SWFs) and similar government funds could be a development finance goal. While historically SWFs have steered clear of social missions and maintained that their legal mandate is to protect and grow sovereign wealth for future generations based on capital maximization principles, there has been an encouraging trend towards a Sovereign Development Fund (SDF) approach. The original SDFs, such as Mubadala in Abu Dhabi, were created to encourage local industrial development. Recently, with the establishment of a number of SWFs in Africa, the line between SWFs and SDFs has become blurred, as these countries have urgent health, education, and other social and physical infrastructure challenges that need to be addressed. Hence, there appears to be more readiness to discuss in-

novative financial arrangements that would use the significant wealth that these funds manage for investments in social infrastructure as means of investing in future generations. It is conceivable that the revenue streams that such funds generate could be securitized under an innovative financing mechanism and partly used for education. This proposition will require a major shift in the vision of and thinking on the role of SWFs and SDFs in development, especially of those funds that belong to countries that are classified as low-income countries.

Direct comparison (see Table 2) between a vaccine bond and an education bond to finance girls' education, as an example, illustrates some differences in the frontloading argument and the challenges that need to be overcome that are related to the unique attributes of education investments (see chapter 1). Particularly relevant attributes include a very long gap between investment and result/return, and a very high degree of interdependence between the various parts of the system and the resultant lack of a "signature intervention." The complexity of education systems makes it challenging for potential donor guarantors to achieve and report quick, impactful results—unlike the health sector.

**Table 2.** — *Comparison of a health and girls' education bond*

	Vaccine Bond	Girls' Education Bond
Product	Vaccine	Systems, teachers, materials
Intervention	1-3 times during infancy/early childhood	Early childhood to young adult
Service Providers	Public health systems	Public and private education providers
Impact	Vaccine delivery; measurably reduced mortality and morbidity	Improved delivery quality with range of social, economic, and related outcomes
Savings	Quantifiable costs savings to health systems	Contribution to economic development; indirect savings due to better health
Sustainability	Generally lifelong after vaccination	Learning is an on-going process hence repeated interventions required

Source: Innovative Finance Foundation (IFF)

**Potential:** While bonds are the most ubiquitous of education financing instruments (as they essentially provide unencumbered money), there are substantial barriers to a successful global issue in today's economic climate. In the current economic and financial environment, characterized by downgrades in the credit ratings of potential donor guarantors, the cost of borrowing from the market increases as debt investors are compensated with a higher interest rate for taking on additional risks. To be able to launch and market social guarantee bonds in today's market a number of enhancements have been proposed,<sup>37</sup> including using guarantees from multilateral agencies and a range of strategies to limit the risk of default or donors renegeing on their pledges.

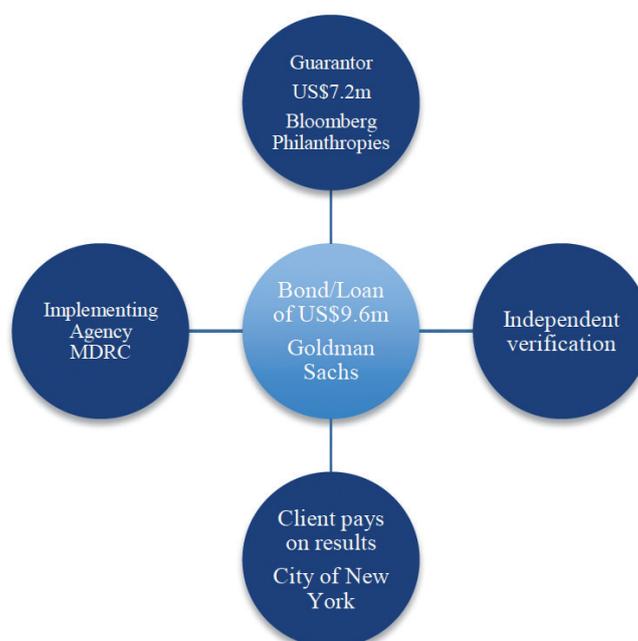
37. Ketkar, 2012.

### 4.3 Social Impact Bonds/ Development Impact Bonds

A more suitable option for debt financing for global education, again using the example of a girls’ education bond, could be a social impact bond (SIB). An increasingly popular mechanism, social impact bonds (strictly speaking not bonds but more accurately pay-for-success loans or contracts) are fund-raising mechanisms under which investors advance money to a promoter (usually a public sector entity) to finance a promising but unproven social or developmental intervention on the condition that should the specified benchmarks/social impact be achieved, investors are paid out the principal invested and possibly a financial return. While social impact bonds operate over a fixed period of time, they differ from bonds as they do not offer a fixed rate of return and cannot be traded. They are not bonds in the conventional sense. The dominant feature of social impact bonds is risk and reward sharing, an element that is absent in the IFFIm-type bond.

The social impact bond “sector” is still very young and owes much of the attention it currently garners to the work of the UK-based organization Social Finance, which pioneered the methodology and implemented the first project in 2010. This project raised £5 million, with a 13 percent expected return in case of success within an 8-year timeline, for a counseling service targeting a reduction of re-offending rates among short-term prisoners in Peterborough, UK. The bond is currently a work in progress, given the time it takes to work with the prisoners and measure success. Goldman Sachs has announced that it will invest in a social impact bond to bear partial risk for a social program to reduce recidivism among juvenile prisoners incarcerated on New York’s Riker’s Island.<sup>38</sup> In Australia, social impact bonds are being developed in areas of recidivism and children in out-of-home care by civil society organizations and the Government of New South Wales.

**Figure 5.** — *Simplified model of a social impact bond in the City of New York*



Source: Innovative Finance Foundation (IFF)

38. Olson & Phillips, 2013.

While there is considerable variation in the financial structuring of social impact bonds, thanks to the work of Social Finance there is a clear and transparent process for the development and commissioning of these instruments. Recently, the Center for Global Development, in partnership with Social Finance, formed a Working Group to explore Development Impact Bonds (DIBs). The Working Group will examine contexts in which this new mechanism could be applied, with the aim of establishing a business model to be initially tested in two to three settings. The idea is based on the model of social impact bonds, recently piloted in the UK as a way to shift incentives and accountability to results, transfer performance risk to the private sector, and increase efficiency in program implementation. The working group will investigate whether a similar model can be used to improve international development outcomes and will produce recommendations for the design of DIBs.<sup>39</sup>

Social impact bonds highlight the importance of an outcomes-based relationship between the investor and the implementing organization—a priority if “social investors” are indeed to be convinced that the funding is going to be used in an efficacious, transparent, and sustainable manner. While classic “results based funding” requires that the money be available to the funding organizations “up front,” there may be opportunities to consider various forms of advanced commitments (loosely based on the health sector Advanced Market Commitments) and cash-on-delivery approaches.

Potential: The strong community development aspect of social impact bonds offers an opportunity to leverage domestic business and philanthropy for investment in education and to generate co-financing for bilateral or multilateral assistance or provide performance-based funding for transition or graduation from multilateral funding. Because the social bond sector is still in its infancy, the first initiatives in education would need to be small, high-impact pilots. With this in mind, perhaps a promising starting point would be a social impact bond focused on girls’ education, given that there is documented social impact (economic, empowerment, health, etc.) and strong interest among potential investors and guarantors? Appendix 1 outlines some of the key features of such a social impact bond.

### 4.4 Debt Swaps

Debt swaps or debt conversions were first conceived by Thomas Lovejoy of the World Wildlife Fund (WWF) in 1984 as a strategy to deal with the problems of developing-nation indebtedness and associated negative effects on the environment. Debt-for-nature agreements have generated over US\$1 billion for conservation in developing countries but in recent years the volume of debt-for nature swaps declined, partly because conservation organizations could purchase relatively large debt obligations on the secondary market at highly discounted rates and partly because of large global debt restructuring and cancellation agreements, such as the Heavily Indebted Poor Countries (HIPC) initiative and the Multilateral Debt Relief Initiative (MDRI). Debt conversions in other sectors enjoyed popularity throughout the 1990s and are still used today by several creditor donors as an instrument of development policy.

Typically, debt swaps for development are bilateral agreements between a creditor and debtor whereby the creditor agrees to cancel an agreed amount of debt on the condition

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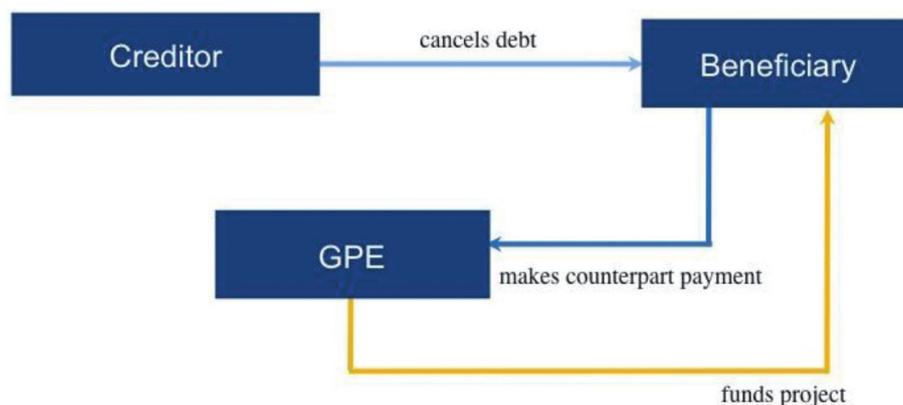
39. Center for Global Development, 2012.

that the debtor spends an agreed amount (counterpart funds) for development or social purposes. Generally, creditors have the option to offer discounts on the counterpart funds to be paid for the debt. In most cases, a special counterpart fund is created to manage the disbursement process. There is a range of accepted ways to manage the process and ensure that the counterpart funds are actually spent for the agreed purposes.

The intention of debt swaps is to allow a debtor country to use freed-up fiscal space—created through savings on interest and a reduced principal—for development and social purposes. An additional benefit of debt swaps is that the counterpart funds can be in local currency.

In 2007, the Global Fund pioneered a debt conversion program, Debt2Health, as an innovative financing mechanism for health. The program essentially works like a bilateral debt conversion but entails a cash payment of the counterpart funds to the Global Fund, which is earmarked for approved programs in the debtor country. This assures impact and performance-based management of the counterpart funds. This program has successfully converted US\$300 million in old debt into US\$170 million new cash for Global Fund health programs. A program like Debt2Health faces three important limitations. First, the challenge of scalability as many poor highly indebted poor countries cannot participate because their debt has been cancelled already as a result of large debt cancellation initiatives such as HIPC and MDRI. Second, there is the challenge of the “deal flow” as donors increasingly reduce allocations for debt swaps or leave existing allocations unutilized. Finally, such a program does not help to substantially reduce the debt burden on poor countries.

**Figure 6.** — *Debt2Education could convert old debt into new resources for education*



Source: Innovative Finance Foundation (IFF)

In order for a multilateral debt conversion initiative based on the Debt2Health model to work, three general conditions would need to be met:

- available debt
- available creditors to act as champions
- designation of a suitable institution for implementation (the GPE or another credible entity working at the country level)

Potential: In the education sector, only bilateral debt swaps have been undertaken to date, mainly by Spain in Latin America. Given that a few donors such as Germany, It-

aly, and Spain have active debt swap programs with combined worth of approximately US\$500 million a year, it would be conceivable to propose and implement a Debt2Education program (see Table 3). This model has the clear advantage that it is proven, but as previously noted coverage and scale of such an initiative would be somewhat limited.<sup>40</sup> A special effort would be required to reach the poorest countries by targeting completion point HIPCs through selected bilateral programs.

**Table 3.** — *Debt2Education potential*

Creditor	Experience	Swap Volume*
Australia	D2H Indonesia AUS\$75m	case-by-case
France	Debt Reduction-Development Contract (C2D)	€300 m p.a.
Germany	D2H Champion. Cote d'Ivoire, Egypt, Indonesia, Pakistan	€150 m p.a.
Italy	Bilateral program	€130 m p.a.
Spain	Bilateral program in education	€150 m p.a.

\* m p.a. – million per annum

Source: Innovative Finance Foundation (IFF)

## 4.5 IDA-Buy-Downs

The International Development Association (IDA) is a World Bank Group that makes funds available to the poorest countries. The main feature is the highly concessional nature of funding provided by IDA: IDA financing bears very little interest and repayment is stretched over 25 to 40 years, including a 5 to 10-year grace period.

An IDA buy-down is an agreement under which a third party agrees to buy the debt of an IDA borrower that was incurred as a result of an IDA-financed project. The rationale for buy-downs is provide incentives to the poorest countries to effectively undertake projects that contribute to *global public goods*, meaning the solution of a problem that benefits many people at the same time (in economic terms public goods are “non-excludable” and “non-rivalrous”). The buy-down is triggered when the project is certified by an independent audit to have achieved agreed upon outcomes.

An IDA buy-down was piloted in 2003 for polio eradication in Nigeria; the Bill & Melinda Gates Foundation agreed to buy back Nigerian debt incurred in connection with a polio program.

Designing and implementing IDA buy-downs for education confronts the question of whether education is a global public good. The prevailing view on the provision of global public goods recognizes global climate stability, communicable disease control, peace and security, institutional architecture of international trade and finance, global communication and transportation, and global norms such as basic human rights.<sup>41</sup> Education

40. This initiative was also explored as Debt4Education in Filmus and Serrani, 2009.

41. Kaul, 2013.

advocates argue that education is a global public good because it plays a key role in benefiting everyone through the free movement of human capital. However, there are problems in the “non-rivalrous” part of the definition. For example, in countries like India, the government invests in excellent higher education facilities but because of brain drain the return on that investment occurs in another economy such as the U.S.

Discourse about global public goods aside, it is clear that education is a challenge in every economy and that people would be better off if they were well educated and had every opportunity to participate in life in a productive manner. In the end, it will be a matter of feasibility. There are 81 countries in IDA, of which 39 are in Sub-Saharan Africa. Although IDA financing has more than doubled over the last decade, it has decreased by 11 percent in GPE countries.<sup>42</sup> This suggests that a substitution is taking place with a preference for 100 percent grants, rather than a mix of concessional loans and grants. In 2012, Cote d’Ivoire and Mozambique were the only GPE countries that had new education commitments approved, and the FY 2013 pipeline containing US\$600 million is expected to go to Ethiopia (US\$318 million), Nigeria (US\$180 million), Angola (US\$75 million), Rwanda (US\$18.75 million), and Madagascar (US\$7 million).<sup>43</sup>

Potential: Provided a third party is willing to step up and buy back some of the debt incurred in pursuit of these education programs, IDA buy-downs are a feasible option to generate some innovative financing but the interest rates and discounts applied will be key to understanding the actual impact of IDA buy-down for the GPE.

### 4.6 Debt Conversion Development Bonds

The Debt Conversion Development Bond (DCDB) is a model developed by AMF Guarantee and recently put forward by UNESCO.<sup>44</sup> It is based on the idea that a government receives a bilateral debt swap and uses freed-up fiscal space created through debt cancellation to issue a bond for development and social infrastructure in the local capital markets and then leverages funding by placing debt with domestic institutional investors such as pension funds, life insurance companies, or mutual funds. DCDBs can allow for larger size debt conversion programs without distorting or straining the recipient government’s domestic spending budgets. DCDBs also allow donors to fund large projects but spread the impact on their own budgets over time (similar to the IFFIm). As a number of countries now have sufficient domestic monetary credibility (i.e. low inflation) and functioning capital markets, government bonds with a relatively long maturity (10+ years) can be attractive to investors.

The clear advantage of DCDBs lies in the opportunity for engagement with the rapidly growing domestic assets in developing countries (US\$6 trillion, excluding China) to fund local development priorities. The DCDB model does add a new level of complexity to the innovative financing space because it requires that a number of requirements and transaction elements come together to create a nexus that is untested in financial markets to date.

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42. Results, 2012.

43. Results, 2012.

44. UNESCO, 2012a.

Conditions for a successful DCDB include:

- available debt for conversion
- available creditor(s) ready to cancel debt
- successful legal approval of a new type of debt conversion arrangement
- sufficient monetary credibility to achieve acceptable rates of interest
- relatively mature bond market

Potential: DCDBs are interesting for countries that have relatively mature capital markets and are also eligible for debt swaps. A significant limitation of the DCDB approach is scalability; the poorest countries will not be able to benefit from it because they do not have significant amounts of convertible debt on their books as a result of large-scale debt cancellations by Paris Club creditors. There may also be higher combined transaction costs (debt swap and interest on coupon) and administrative complexity (for donors) of merging debt conversion agreements with new debt issuance.

### 4.7 Advance Market Commitments

The Advance Market Commitment (AMC) is a contract mechanism used by GAVI that incentivizes research and development for new vaccines by guaranteeing a viable market for the new products. The idea is that governments or organizations commit to buy or subsidize the purchase of a fixed quantity of vaccines at a given price and suppliers commit to offer the vaccine at a lower price after the subsidy ends. Initiated in February 2007 with Italy's announcement that it would establish an AMC for a new pneumococcal vaccine, additional pledges totaling US\$1.5 billion have been made by Canada, Russia, Norway, the UK, and the Bill & Melinda Gates Foundation. The AMC is governed by an Independent Assessment Committee (IAC) comprised of 11 members representing expertise in public health, health economics, vaccine business development, vaccine industry economics, contract law, public-private finance, and clinical performance and delivery systems. The AMC is typically criticized for having offered few enhancements to the original underlying value proposition aimed at enticing the pharmaceutical industry to invest in dedicated capacity in a scenario of relatively limited competition.

The Affordable Medicines for Malaria (AMFm) facility created in 2008 to supply publicly subsidized drugs for public and private-sector demand is similar to, but entirely independent of, the AMC. Hosted by the Global Fund and working in collaboration with the World Bank, UNITAID, DfID, the Dutch government, the Roll Back Malaria Partnership, and Bill & Melinda Gates Foundation as partners, the AMFm has attracted US\$ 216 million (60 percent of total funding) from UNITAID. By requiring that the benefits of the subsidy be passed down the supply chain, the AMFm intends to reduce the retail price of artemisinin combination therapy (ACT) from about US\$4–11 to about 20–50 cents.

Potential: AMCs essentially “act” on the market to ensure a certain outcome such as product development or lower prices. The clearest opportunities in education lie in new technologies such as digital devices (tablets, computers, etc.) that offer centralized content delivery, distance student support, and monitoring/evaluation. AMCs have good potential when it comes to possibly “correcting” some of the inequalities related to the growth of private education in the poorest countries. One can imagine situations where

the creation of a public-private education “market” is subsidized through up-front investment—the creation of schools that have the best attributes of the private sector in terms of efficiency and operations while remaining accessible to all children and maintaining the highest quality standards.

## 4.8 Impact Investing

The role of the private sector in innovative financing for development is only emerging but it is clear that it has significant, largely untapped potential, simply due to the size of the global capital markets, currently estimated at US\$212 trillion, not counting private equity and other forms of alternative investment.<sup>45</sup>

### **Box 3. The future of innovative financing lies in better leverage of public and private capital**

We believe that an untapped opportunity exists to work with the financial markets and cater to the varying risk appetites of asset managers, offering the opportunity to “do good while investing well.” The deployment of attractive innovative finance offerings for the global financial markets, while no panacea for education financing, at least offers an opportunity to engage with a wider range of potential supporters and constructively contribute to the development of sustainable, robust, and long-term funding solutions for major education challenges.

In addition to engagement with the global financial markets, there is growing potential to work with the emerging and developing country economies in funding education when one considers that while Europe accounts for 25 percent of the world economy today, 90 percent of economic growth is taking place outside of Europe.

Growth in the emerging markets and developing countries offers unprecedented opportunities for financial innovation in development and social infrastructure. The challenge is to formulate approaches, models, and investment offerings capable of attracting a larger portion of global assets into social infrastructure finance, including education. One approach for engaging the private sector in meaningful innovative financing activities has been developed by the Innovative Finance Foundation (IFF) and is based on a methodology of mapping “investible attributes” of social causes to standard investment vehicles.<sup>46</sup> Within this wide yet nascent field, specific areas stand out in terms of their relevance and utility for global education—impact or value-based investing and private equity.

Impact investing is an investment approach that uses a wide range of tools of commercial capital deployment such as equity, debt, working capital lines of credit, and loan guarantees to create measurable social value. Social value creation includes improvements in social infrastructure such as health and education. Impact investments can be

45. Roxburgh, Lund, & Piotrowski, 2011.

46. IFF, 2011.

in companies, organizations, and funds. Impact investing theory indicates that impact investors are prepared to put social impact over financial return. However, a survey conducted by JP Morgan and the Rockefeller Foundation showed that 60 percent of impact investors said they thought impact investments could earn market returns while generating social benefits.<sup>47</sup> Impact investing is distinguished from *socially responsible investing (SRI)*, which generally refers to an investment approach that aims to minimize the negative societal impacts of investments by applying so-called negative screens (for example, with alcohol, tobacco, gambling, pornography, and military) to investment decisions.

The number of funds engaged in impact investing has grown quickly and the impact investing industry will increase from its present US\$50 billion in assets to US\$500 billion within the next decade.<sup>48</sup> The growth is partly a response to criticism of traditional forms of philanthropy and development, which have been characterized as unsustainable and driven by short-term priorities, and partly a response to criticism of the financial sector in the wake of the recent financial crisis.

Impact investing attracts about 6 percent of global assets; within that share, education impact investing is still a small part with very few specialist investors and relatively small transaction sizes. Most investments relate to specific schooling and training operations or to new technologies that can extend the breadth and efficiency of education delivery. Wider-ranging, potentially scalable initiatives have found it challenging to get off the ground, for example the US\$50 million Education Venture Fund promoted by Results4Development. Despite the current limitations, the longer-term outlook for education impact investing is positive as the deal-flow continues to increase due to growing private education and public-private partnership models.

The potential for impact investments in primary education is estimated at US\$10 billion during the next 5 to 10 years, while the potential for other parts of the education sector could be equally high, if not higher.<sup>49</sup> Dalberg reviewed the topic of education impact investing in a report<sup>50</sup> commissioned by the Open Society Foundations (OSF) that highlighted the fact that education impact investors have gone for the low hanging fruit—established private schools networks and to a far lesser extent, new educational technologies. The ingredients for a thriving private education sector exist in many countries, namely the combination of a gap in provision due to poor public sector service delivery and demand from poor and middle class families who seek better education and supply from entrepreneurs willing to provide quality education at a reasonable price. Dalberg’s report called for more concessionary finance to create an ecosystem where education becomes more “investible.”

The key challenge in impact investing remains reconciling social impact goals with financial return goals. There is some effervescence in the education impact investment space partially fuelled by multilateral financing organizations’ and charitable foundations’ appetites for transactions in this space. The challenge is to find the appropriate equilibrium between public and private sector education, given challenges related to access and social equity. Strengthening public sector education through public-private partnerships

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47. O’Donohoe et al., 2010.

48. Monitor, 2009.

49. O’Donohoe et al., 2010.

50. Dalberg Research, 2012.

and performance-linked funding is vital to ensure that private sector education is of a good standard. Similarly, investment is required in teacher training, governance, academic inspections, examination boards and standards, and educational research to ensure that private sector education investment is truly impactful and sustainable.

Private equity is an asset class consisting of equity securities in companies that are not publically traded on a stock exchange. A private equity investment will generally be made by a private equity firm, a venture capital firm, or an angel investor whereby investors pool their money in a partnership and jointly provide capital to a target company to nurture expansion, new product development, or restructuring, management, or ownership. Among the most common investment strategies in private equity are leveraged buyouts, venture capital, growth capital, distressed investments, and mezzanine capital. Capital for private equity is raised mainly from retail and institutional investors (governments and multilaterals can also sponsor developmental funds). Private equity investments often demand long holding periods to allow for company growth or a liquidity event such as an IPO or sale. The attraction of a private equity investment is the potential for substantial long-term gains. A private equity fund is generally set up as a limited partnership, with a private equity firm as the general partner and the investors as limited partners. Private equity firms typically charge substantial fees for participating in the partnership and tend to specialize in a particular type of investment.

To date, the focus of emerging market private equity education investment has been on established private schools and higher education “chains” that require growth capital. There are few such opportunities and they generally offer relatively expensive tuition options.

Potential: There is an urgent need for discussion and engagement between the small cohort of impact investors interested in education and organizations such as GPE, UNESCO, etc. As Dalberg observes, there is potential to make parts of the global education landscape more amenable to private investors and this would offer opportunities to impact investors outside their traditional focus of private schools. This brings numerous benefits to the public education sector and may open the door to innovative public-private partnerships.

### 4.9 Blended Instruments

We use the term “blended instruments” to describe a fairly novel approach using financial engineering aiming to leverage different types of capital such as grants, loans, and various forms of private investment (impact, private equity, etc.) to achieve the widest possible scale, diversification, and risk adjustment. Researchers have promoted this approach to fund cancer research.<sup>51</sup> They propose a “megafund” to raise money for a portfolio of cancer drug development projects, thereby mitigating risk and offering a range of risk/return profiles to meet individual investor needs. The EU has also developed innovative approaches to blending mechanisms for development finance, mainly by optimizing the interface between grant and loan facilities.<sup>52</sup>

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51. Fernandez, Stein, & Lo, 2012.

52. Nunez-Ferrer & Behrens, 2011.

Potential: In global education, blended instruments (equity and debt) also offer interesting opportunities to “securitize” an education investment portfolio by repackaging a range of equity and debt instruments for specific markets, such as the multi-lateral sector or social impact investors. The aim of blended instruments is to achieve diversification and scale in order to ensure a market-compatible return. In education, one has the possibility of spreading investment over a number of regions and interventions. The challenge, however, is to quantify future risk and return given the lack of precedent. Blended instruments are new and therefore investors would be more comfortable if they were structured using a bundle of proven investment products. If blended instruments were to be pioneered in education it is likely that they would need a guarantee from a creditworthy government or a large philanthropic foundation.

#### 4.10 Microfinance and Insurance

The provision of financial services to the poor and underserved has profound implications for global education. A body of research shows that families who receive access to microfinance tend to keep their children in school longer and that these children perform better in school. There are a range of microfinance interventions that influence schooling, including loans, savings, and supporting local entrepreneurship related to education provision. One should also mention social insurance (government sponsored programs), but this is generally focused on health and old age, rather than education. Given the fact that, in the face of deficiencies in state schools, private sector education provision is flourishing in many poorer and emerging market countries, there is a strong case to be made for encouraging the development of a savings/insurance sector devoted to helping families cover education costs.

To date, there has been only limited financial innovation in the global education arena. We have outlined the reasons for this, primarily that education is still perceived to be mainly a public good and a public sector game. Investors do not generally see the same upside as they do in health care, where there are developed private markets alongside public provision.

Potential: There is considerable potential to strengthen the role of microfinance institutions in education. As we have observed, education is a public sector area whereas microfinance is generally best at filling in the holes in public and social services, especially for the poorest of the poor. In order to work well, microfinance has to generate robust returns with a short-term horizon. Hence, it is much easier to envisage a situation where a microfinance institution lends money for livestock or vocational training than for primary education. Microfinance institutions are, however, a good conduit for conditional grant funding to promote school attendance or as a partner for an education savings scheme. There is currently very little resource allocation towards developing insurance instruments linked to education. There is good potential to link education to the growing insurance market in poorer countries. For example, offering support for school attendance as part of a life or disability policy (in the case of the aforementioned, the policy will provide money to ensure that dependents can continue their schooling). Similar schemes could be developed for other insurance instruments, for example for extreme weather.

## 5. The Way Forward

### 5.1 The Case for Innovation in Education Investment

There is a need for more funding given that almost a billion children do not have adequate access to quality education. Currently, about 80 percent of all funding for global education comes from the public/ODA sector. While private education provision is growing, even in the poorest countries, it often remains a substitute for inadequate public sector education offerings. The impact of GPE on global education is substantial and has been well documented; given that we believe GPE offers a good solution set, especially for the poorest countries, a key challenge is how to increase the scale of funding for global education.

There is a strong, articulated interest in the deployment of innovative financing mechanisms, especially various types of debt instruments, to generate substantial money for global education. As we note in this report, these initiatives are still at an early stage (pre-implementation). Similarly, activities such as impact investing in the education sector remain relatively limited. We could present at-length the reasons why global education has not been able to emulate the vibrancy of global public health, but there is little utility in dwelling upon what are essentially structural (and hence largely unchangeable) differences between these sectors. It is perhaps more important to look at the attributes of global education that make it “investible,” that is, amenable to innovative financing initiatives.

**Figure 7.** — *Identifying innovative financing opportunities*



Source: Innovative Finance Foundation (IFF)

While social responsibility investment (SRI) now accounts for an estimated 6 percent of global investments, its orientation remains philanthropic due to the low returns investors tend to receive. We present examples of engagement models to mobilize sustainable and growing revenue streams for education based on accommodating the primary objective of large pools of capital, such as the global financial or asset management sector (which is estimated to exceed US\$100 trillion). We believe that an untapped op-

portunity exists to work with the financial markets and cater to the varying risk appetites of asset managers, offering the opportunity to “do good while investing well.” The deployment of attractive innovative finance offerings for the global financial markets, while no panacea for global education financing, at least offers an opportunity to engage with a wider range of potential supporters and constructively contribute to the development of sustainable, robust, and long-term funding solutions for education.

Private sector investors in education are interested in risk, return and impact. There is little doubt that the work of GPE has been impactful, but to date it has not had any mechanisms whereby it could directly engage with the private sector through innovative financing instruments. Impact investors have a limited range of investing options, should they wish to support global education. Generalist impact private equity funds devote a small part of their portfolio to education and the few education funds that are currently raised tend to be quite small. Investment opportunities in GPE priority areas, such as primary education, tend to be limited and specialist education funds tend to spread their bets over technology, vocational training, soft-skills, and established provider networks.

We have stressed that global education is a complex interaction between human capital, infrastructure and services. From a generalist investing perspective, this complexity is challenging. For example, investing in building schools is very different from investing in a bridge, dam, or mobile communications tower. It is difficult to imagine that build-operate or other public-private investment models will be enthusiastically received in education, especially by the public sector. Similarly, it is hard to believe that it would be possible to implement any sophisticated financial instruments for global education when even the most basic innovative financing approaches are so thin on the ground.

## 5.2 Segmentation by Client

In order to get innovative financing off the ground, champions are required. Champions can come from the public and private sector. Most existing innovative financing mechanisms have been created by government donors and the Bill & Melinda Gates Foundation. While G-20 donors represent the greatest diversity and potential to seed fund and promote innovative financing, there are other players that could promote and support certain mechanisms based on their existing priorities and business models (see Table 4).

**Table 4.** — *Innovative financing mechanisms and champions*

Client	Suitable innovative financing mechanisms
G-20	Solidarity levies, taxes
	Bonds
	Social impact bonds
	Debt swaps
	IDA Buy-downs
	Microfinance & Insurance
	Impact investment
	Blended instruments

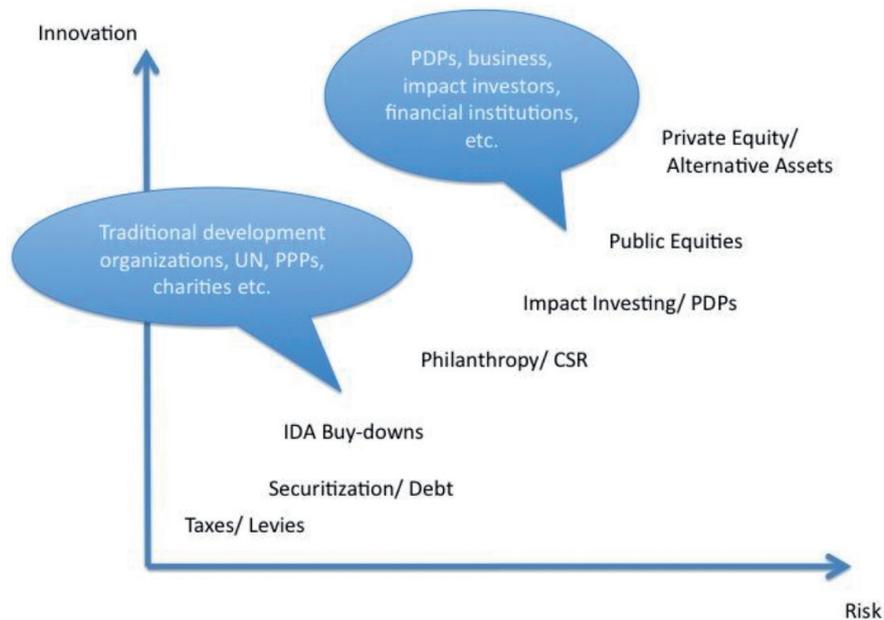
<b>BRICS SA</b>	Solidarity levies
	Social impact bonds
	Impact investing
	Blended instruments
	Microfinance & Insurance
<b>Middle-income</b>	Bonds
	Debt Conversion Development Bonds
	Insurance
	Blended instruments
	Microfinance & Insurance
<b>Low-income, IDA</b>	Social Impact bonds
	Microfinance & Insurance
<b>Fragile states</b>	Social impact bonds
<b>Philanthropy/ foundations</b>	Bonds
	Social Impact Bonds
	IDA Buy-downs
	Microfinance & Insurance
	Blended Instruments
<b>Business</b>	Solidarity Levies, taxes
	Social Impact Bonds
	Microfinance & Insurance
	Impact Investing
	Blended Instruments

Source: Innovative Finance Foundation (IFF)

### 5.3 Segmentation by Risk Profile

One of the greatest challenges in developing and structuring innovative financing is to align a variety of expectations and risk profiles and to build partnerships between highly diverse groups of public and private investors. Different countries and different organizations are likely to identify different vehicles as the most “suitable” for them, considering their mandate, capacity, innovation drive, and risk appetite (see Figure 8).

Figure 8. — Innovation, risk profiles, and likely partners

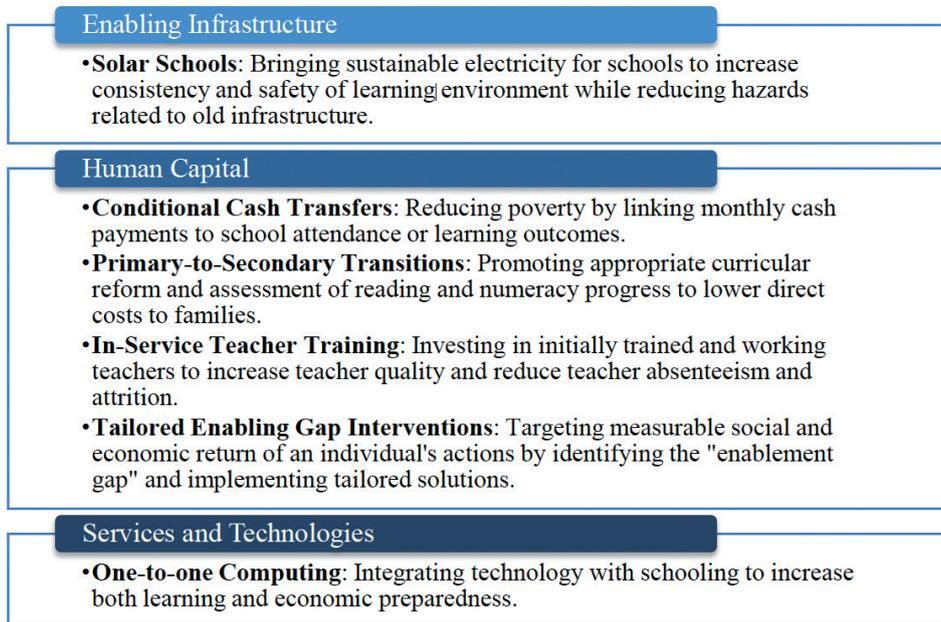


Source: Innovative Finance Foundation (IFF)

We have reflected at length about the viability (in terms of mobilizing the requisite support from governments, donors, multilateral organizations, and recipient countries) of a range of the more “classic” innovative financing approaches that exist in the health sector. Our view is that many of the basic elements that drove and still drive health innovative financing are neither extant nor fully developed in global education. We are particularly concerned about the near absence of institutional capacity for the deployment of financial innovation to fund global education. Many of the large health sector organizations already have specialized innovative financing teams; large philanthropic organizations actively participate as investors, sponsors and capacity-builders; and organizations such as OECD, Milken Institute, Rockefeller Foundation, and large investment banks are actively driving thought leadership and new initiatives in health. We have reflected on how global education can indeed, in some small way given the structural differences we have outlined, emulate global health.

In order to move from discourse to examples of concrete investment opportunities, we take a portfolio approach (see Figure 9), loosely based on the model proposed by Dalberg, focusing on *enabling infrastructure*, *human capital development*, and *services/technologies* to provide illustrative examples of “investible” education interventions. The aim is to bridge the perceived gap between what are narrowly regarded as public and private sector exclusive investment domains and focus instead on return—social, economic, and financial. Our rationale is based on experience from sectors such as healthcare, where as soon as “investible” opportunities come to the fore, entrepreneurial activities commence. In education, it is still difficult to discern what is “investible,” that is, what is amenable to the full gamut of investment activity ranging from private equity to public sector to individual entrepreneurs.

Figure 9. — Portfolio of “investible” education interventions



Source: Innovative Finance Foundation (IFF)

## 5.4 Enabling Infrastructure

*Solar Schools.* An estimated 1.5 billion people in developing countries have no access to electricity; more than 80 percent of them live in sub-Saharan Africa or South Asia.<sup>53</sup> For these populations, access to a small amount of electricity would lead to improvements in agricultural productivity, health, education, communications, and access to clean water. The hundreds of thousands of schools that are still without electricity continue to face the unresolved challenges of the 20<sup>th</sup> century: lack of universal primary education, elevated dropout rates, poor teacher training, and poor infrastructure, while also facing the growing challenge of the 21<sup>st</sup> century: the need to adapt education to continuous changes in information and communications technology (ICT). In today’s information society, lack of connection to the Internet is a critical factor of social exclusion and marginalization.

In 2011 the Organization of Ibero-American States for Education, Science and Culture (OEI) garnered support from all 22 Ibero-American Ministers of Education to launch its Lights for Learning initiative to “bring electricity through solar panels, computer equipment and Internet connection to all Ibero-American schools (over 60,000) which still lack these resources, while guaranteeing teacher training, sustainability of the initiative, and community engagement.”<sup>54</sup> The OEI has developed a Solidarity Support Fund to finance approximately a quarter of the initiative, prioritizing the least developed countries of the region, and the remaining three quarters of funding corresponds to partnership

53. Legros, Havet, Bruce, & Bonjour, 2007.

54. OEI, 2011.

between individual governments, civil society, and the private sector. An estimated 1.8 million children, their families, and local communities will be reached with this initiative by 2015.

In Africa, Samsung has launched the Solar Powered Internet Schools program to provide a technology-rich learning and teaching environment to K-12 classrooms across five countries (South Africa, Kenya, Nigeria, Senegal, and Sudan) as a pilot, with the aim to reach 2.5 million learners by 2015.<sup>55</sup> The program aims to provide mobile learning infrastructure, electricity via solar panels, computers, and connectivity to rural areas in countries lacking these resources. The central objective of the program is to provide the ICT tools required to bridge the digital divide and facilitate e-learning and distance education, as well as in-service teacher training.

**Table 5.** — *Enabling infrastructure: solar schools*

Bring sustainable electricity to schools to increase consistency and safety of learning environment while reducing hazards related to old infrastructure.	
<b>Features</b>	Given the urgent demand to provide sustainable infrastructure and technologies to schools and communities, these programs bring solar panels, computers, and ICT tools to schools while developing local renewable energy programs.
<b>Impact on GPE Strategic Goals</b>	Goal 1. Access for all
	Goal 2. Learning for all
<b>Challenges</b>	Goal 3. Reaching every child
	Goal 4. Building for the future
<b>Challenges</b>	Despite technological advances and lowering prices, the costs of solar panels remain considerable and they are a comparatively inefficient source of electricity. Moreover, the greatest challenge for achieving universal Internet access is acquiring service for rural users.
<b>Initiatives</b>	Lights for Learning (Latin America); Samsung program (South Africa, Kenya, Nigeria, Senegal, and Sudan); SolarAid (Kenya, Zambia, Tanzania, and Malawi)

## 5.5 Human Capital

Human capital is the sum of knowledge, skills, competencies, and other attributes required for all stakeholders in education to contribute and benefit and create social and economic value. We include examples of conditional cash transfers, teacher training, and transition from primary to secondary school.

*Conditional Cash Transfer (CCT).* CCT programs make monthly cash payments to families in poverty, conditional upon the parents enrolling their children in public schools, getting medical check-ups, receiving vaccinations, etc. The 2011 EFA Monitoring highlights that “they work, they are relatively low cost and they deliver results. Though the transfers are often very small, they can make a big difference to the poorest. And because the stipends are often linked to school attendance, they create incentives that protect education.”<sup>56</sup> CCTs are widely used across Latin America and pilot projects are being carried out in other regions.

55. Samsung, n.d.

56. UNESCO, 2011.

Unlike many development initiatives, CCT programs recently introduced in the Latin America and Caribbean region have been subject to rigorous evaluations of their effectiveness.<sup>57</sup> The Brazilian CCT program started in the 1990s, Bolsa Familia (formerly Bolsa Escola), has become the model for this type of intervention. Across the country, some 12 million families receive the benefit. The money is generally given to mothers, who get up to US\$115 a month, depending on their income and how many children they have. In return, children must attend school and receive the proper vaccinations. Mexico’s conditional cash transfer program has been associated with improvements in enrolment and gains in average years of schooling achieved.<sup>58</sup> While much of the evidence on cash transfer program comes from middle-income countries in Latin America, more recent studies in low-income countries suggest that they may have a far wider application.<sup>59</sup> In Ethiopia, the Productive Safety Net Programme has provided cash or food transfers to poor households since 2005. Among households headed by women, the money has been used to pay for school registration fees, and 69 percent of households using cash payments for education are able to keep their children in school longer as a direct result of the program.<sup>60</sup> One study in southern Malawi using randomized evaluation techniques looked at the role of cash payments in weakening the link between school dropout and early marriage. Cash transfers ranging from US\$5 to US\$15 were given to unmarried girls aged 13 to 22 who were attending school. After a year, their dropout rate was 6.3 percent, compared with 10.8 percent for girls who were not receiving cash transfers. It appears that a relatively small financial incentive to delay marriage had a significant effect on household decision-making.<sup>61</sup>

**Table 6.** — *Building human capital: conditional cash transfers*

Reduce poverty by linking monthly cash payments to school attendance or learning outcomes.	
<b>Features</b>	By linking conditions for cash transfers to poor families, CCT programs increase enrollment, reduce dropout rates, and can also be targeted to promote gender equity, yielding significant changes in women's empowerment and participation in economic networks. While many programs are administered by the public sector, several notable examples are funded and administered by nonprofit private partners.
<b>Challenges</b>	Successful implementation is vulnerable to changes in political leadership, changes in program administration, and economic downturns. The extremely poor may also be excluded due to an inability to access schools or clinics.
<b>Initiatives</b>	Bolsa Familia (Brazil); Familias en Acción (Colombia); Keluarga Harapan (Indonesia); Oportunidades (Mexico); Opportunity NYC (U.S.)

*Primary-to-Secondary School Transition.* There is a growing realization that more years of schooling leads to greater economic growth and increased income levels for individuals, particularly when education extends into adolescence and includes a greater emphasis on math and science.<sup>62</sup> Data projections indicate that the number of secondary school pupils worldwide will rise to 583 million in 2015.<sup>63</sup> Despite these

57. Rawlings & Rubio, 2003.

58. Behrman, Parker, & Todd, 2009; Schultz, 2004.

59. UNESCO, 2010a.

60. Slater et al., 2006.

61. Baird, McIntosh, & Özler, 2010.

62. Verspoor, 2008.

63. EdStats, 2009.

increases, access to secondary education will remain inadequate, especially in many countries in sub-Saharan Africa, South Asia, and North Africa and the Middle East. Currently, approximately 40 percent of the eligible school-aged population does commence post-primary education. Of those children who do enroll in secondary schools, a high number drop out or repeat years.

Gaining access to lower secondary school entails high direct and opportunity costs for low-income families. In addition to paying tuition fees, households must find money for school-related costs such as uniforms, textbooks, and transportation. Once students are in school, interventions are required that address retention and dropout rates, vocation training, and curricular reforms that address students' needs, respond to changing social and economic circumstances, and recognize resource constraints.

Primary-to-secondary interventions could facilitate higher secondary enrolment rates at affordable costs and diminish gender inequities. If well planned and adequately resourced, secondary education has the potential to provide an environment where large numbers of adolescents can gain the skills and knowledge needed to better participate (economically and socially) in a peaceful, democratic society, as well as develop the necessary knowledge to avoid risky behavior and thereby lead a healthier life.<sup>64</sup> Defining what secondary curriculum content and delivery will best prepare school leavers for paid work or self-employment will at some point lead to discussions about the relative relevance of academic curricula and the place of technical and vocational education in the formal secondary education cycle.

**Table 7.** — *Building human capital: primary-to-secondary transition*

Promote appropriate curricular reform and assessment of reading and numeracy progress to lower direct costs to families.	
<b>Features</b>	As more children complete primary education, pressures for access to lower secondary schools increase. Primary-to-secondary transition interventions incorporate financing reform to reduce the direct costs to households, national curricular and promotion-policy reform, and school-level strategies to prevent dropout and retention.
<b>Challenges</b>	Interventions vary widely in scale and content. Financial reform, curricular reform, and selection and promotion policies and appropriate learning assessments require comprehensive structural reform at the ministerial level. School-level programs with private partners face sustainability challenges.
<b>Initiatives</b>	Donkey Canvas Project (Malawi); Hariri Foundation Our Right to Succeed (Lebanon); Mission International Rescue (Dominican Republic); Total Child Project (Namibia); USIKO (South Africa)

*In-Service Teacher Training* will help an estimated 200 million school children to get quality education. Low quality teachers lower the likelihood of primary school completion by contributing to poor scores on tests, grade repetition, and dropouts. Issues of inadequate initial preparation, salaries, HIV/AIDS, professional development, absenteeism, and attrition all impact the quantity and quality of teachers available in poorer countries. Teacher absenteeism rates reach up to 25 percent in some urban settings while attrition rates are substantial in rural areas.<sup>65</sup> Studies conducted by the World Bank between 2006 and 2007 found attrition rates ranging from two to ten percent.<sup>66</sup>

64. Jacob & Lehner, 2011.

65. Muclcahy-Dunn, Herstein, Dunn, & Sevilla, 2003.

66. Mulkeen, 2010.

The balance between the time and money spent on initial recruitment and training as compared to subsequent in-service teacher training is a critical policy question. If most investment is front-loaded, if teacher absenteeism and attrition is high and rising, if teacher career lifetimes are shortening, it may make sense to shorten periods of initial training in exchange for more in-service training, better career opportunities, and a culture of respect for teachers.

The precise causes of low teacher quality and teacher absenteeism or attrition vary by country, but the flexibility of this model of intervention allows for adaptation to the particular circumstances of each local school system. The critical component of this intervention entails capitalizing on existing investments in teachers who are already initially trained and working, instead of focusing resources on new teacher recruitment. Limitations include the high costs of investing in human capital, which already accounts for more than 50 percent of most education budgets in developing nations. Existing programs have addressed the high costs associated with investing in human resources by using a training-of-trainers model that targets head teacher training; head teachers in turn train teachers back at their local school. Other programs have focused on ICT and distance education in order to deliver services efficiently.<sup>67</sup>

**Table 8.** — *Enabling infrastructure: in-service-training*

Invest in initially trained and working teachers to increase teacher quality and reduce teacher absenteeism and attrition.	
<b>Features</b>	In-service teacher training interventions have the benefit of directing more investment of training resources towards those on the job and likely to remain so. Existing programs use a training-of-trainers model that targets head teacher training; head teachers in turn train teachers back at their local school. Other programs have focused on ICT and distance education. These programs can be addressed through national and regional policies, as well as civil society partners.
<b>Challenges</b>	Poor infrastructural implementation and poor management. Programs that rely on ITC modes of delivery are at risk of the technological limitations of the host country, especially brownouts and blackouts.
<b>Initiatives</b>	Escuela Nueva (Colombia); Interactive Radio Instruction (many countries); National Education Capacity Building Program (Angola, Sri Lanka, and Afghanistan); Teacher Development Management System (Uganda)

## 5.6 Services and Technologies for Global Education

One-to-One (1-to-1) digital technology programs provide each child with a digital device, most often a laptop/netbook/tablet, to facilitate learning. The introduction of technology in education is gaining momentum worldwide. From an economic perspective, technology is seen as playing a major role in both the production processes and the results that these processes yield. Through the introduction of effective laptop programs, students can be better prepared to enter a technology-saturated workplace and maintain a level of economic competitiveness. From a social perspective, laptops in schools are seen as a way to help bridge social and digital divides. They also have the potential to provide computer and Internet access to families and community members who would

67. UNESCO, 2010b.

not otherwise have access. From an educational perspective, it is believed that laptops can facilitate new educational practices that are student-centered. They may also support the development of new skills and abilities required in the 21st century.<sup>68</sup> Two types of devices have been most commonly distributed: the XO laptop by the One Laptop Per Child (OLPC) initiative, at over 2.4 million units, and the Intel Classmate and similar Intel devices, of which well over 2 million units have been distributed.

1-to-1 projects have been identified in the following GPE member countries: Haiti, Afghanistan, Rwanda, Sierra Leone, Ethiopia, Ghana, Cambodia, and Mongolia. The way these 1-to-1 programs have been designed, implemented, and evaluated are very diverse. Thus far, research has been inconclusive with regards to the economic, social, and educational impact of 1-to-1 programs due to short time spans, lack of appropriate evaluation methodologies, and lack of commitment to study impacts.<sup>69</sup>

**Table 9.** — *Services and technologies: one-to-one computing*

Integrate technology with schooling to increase both learning and economic preparedness.	
<b>Features</b>	Digital technology programs provide each child with a digital device, usually a laptop, to facilitate learning, enable student-centered teaching practices and prepare students for a technology-based economy.
<b>Challenges</b>	The manner by which 1-to-1 programs have been designed, implemented, and evaluated are very diverse. Thus far, research has been inconclusive with regards to the economic, social, and educational impacts of 1-to-1 programs due to short time spans, lack of appropriate evaluation methodologies, and lack of commitment to study impact, among other reasons.
<b>Initiatives</b>	One Laptop Per Child (global); Plan Ceibal (Uruguay)

The selected education interventions can be mapped against the range of innovative financing mechanisms and vehicles (see Table 10). There is considerable cross-over as some vehicles, for example impact bonds, have a wider utility than others, for example impact investment. While bonds, specifically guaranteed bonds, are the most ubiquitous of education financing instruments (as they essentially provide unencumbered money), there are substantial barriers to a successful global issue in today's economic climate (for a detailed discussion, see chapter 1).

**Table 10.** — *Matching interventions to financial vehicles*

Intervention	Possible innovative financing mechanisms
<b>Solar schools</b>	Bonds Social impact bonds Impact investment Blended instruments
<b>Conditional cash transfers</b>	Social impact bonds Blended instruments
<b>Primary-to-secondary transition</b>	Bonds Insurance Blended instruments

68. Severin & Capota, 2011.

69. Severin & Capota, 2011.

<b>In-service teacher training</b>	Bonds Social Impact bonds
<b>One-to-one computing</b>	Bonds Social impact bonds

A concomitant approach involves matching the needs of the range of stakeholders in global education to investment options based on their needs.

### 5.7 A Proposal for a Global Education Investment Bank (GEIB)

Given that global education does not currently present a propitious ecosystem for the spontaneous growth of innovative financing activities and recognizing the immaturity of innovative finance in this sector, it would be inadvisable to focus on one or other large innovative financing initiative in the hope that this will “drive by example” the growth of global education innovative financing. As we saw in the case of the vaccination bonds, the primary driver was a specific, measurable idea accompanied by strong political support. The financial mechanics, fine-grained details of the investment case, and implementation are relatively straightforward and closely aligned with existing structuring approaches in the financial sector.

Education, especially basic education, is generally perceived as a public sector game with a complex value chain that is delivered using a one (teacher) to many (students) model. If our perception of global education is limited to this model, then the main innovative financing options available appear to be a range of debt instruments that include securitization of debt, write-offs, and social impact bonds. The aim is purely to generate money for the public sector to spend on education.

As we note in this report, this is not the most promising moment to raise public sector debt—but should a real willingness exist among major industrialized country donors, then such initiatives can indeed be considered. We have reflected on how to engage emerging market countries in education debt issuance, given that many policymakers in these countries are skeptical about the “traditional” ODA model and unlikely to be interested in the classic debt issuance, which is essentially frontloaded ODA. Perhaps it is possible to consider fixed income innovative financing models that cater for the more mercantile view of development in some of the rich emerging market countries?

We believe that the urgent priority is for the global education sector to build capacity to sustainably drive the growth of a nascent innovative financing capacity. The best approach would reflect the philosophy of a *global education investment bank (GEIB)*, though we do not believe it would be necessary, at this stage, for such an institution to actually have a banking license. At this initial juncture, it is more important to outline what the mission and activities of a GEIB would be, rather than advocate that it be a stand-alone institution or incorporated within structures such as GPE.

We propose that a GEIB be created to:

- Promote, facilitate, and implement innovative financing initiatives in the global education sector.

- Work in close cooperation with local and international financial institutions, with local and international investors, and with a range of institutions with an interest in strengthening the education sector including the World Bank, GPE, IFC, UNESCO, OECD, UN and related bodies, and any entity, whether public or private, concerned with the global education sector.
- Support GPE, governments, multilateral organizations, investors, and the private sector in fundraising, doing research and giving advice, and assisting in negotiations and deal structuring for innovative financing products.
- Work closely with public and private sectors as a sponsor of impact investment funds for global education.
- Build up innovative financing capacity for global education through training and other activities.

Should it be decided that a GEIB be a stand-alone institution operating as a registered investment bank and subject to capitalization, regulatory, statutory, and other requirements within specific jurisdictions, its activities could include:

- Capital raising (equity and debt) for global education.
- Providing investment banking services to government, business, and multi-lateral agencies in cooperation with state banks, providing consulting and advisory services for government transactions in the education sector (PPPs, privatization, decentralization, loans, and concessionary finance negotiations) including assisting in and advising on economic reforms to enhance and develop the education sector.
- Mergers and acquisitions in the education sector.
- Setting up its own private equity and venture capital education investment funds and operating as a fund-of-funds.

Perhaps the most important role of a GEIB lies in transforming the scattered “strands” of research and ideas related to financing global education into something real—that is, developing thought leadership and a robust discourse of education financing. This is something that investment banks do well—creating financial instruments and investment concepts and packaging and marketing them to investors.<sup>70</sup> There are ample opportunities and crosscutting ideas in global education that could be “investible” if appropriately researched and coordinated across sectors and markets, including girls’ education, public-private partnerships, and technologies.

A number of questions and perceived limitations of the GEIB approach should be addressed. Is it worthwhile creating yet another structure in the already crowded global education institution space? What about the inevitable strong resistance from many stakeholders who will perceive such an initiative as an attempt to shift global education funding away from industrialized country governments to emerging market countries, recipient countries, and the private sector? What about the reserve of the multi-lateral and bi-lateral and other international organizations, who perceive a danger to their myriad of education experts and consultants and advisors? What guarantee do we have that that GEIB will generate funding for global education and not just be a waste of money? Why create an independent structure—would it not be more efficient to just build up

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70. For example, concepts such as BRICS and impact investing are largely the product of investment bank research.

capacity within GPE? These questions are valid, but need to be considered against the backdrop of the fact that there is so little currently underway in global education innovative financing that there is a real need to ensure “critical mass” in terms of thought leadership, strategy, and implementation.

We contend that unless there is some real innovative financing capacity within global education, most initiatives have little chance of succeeding to the fullest possible extent. What is needed is consensus building and advocacy that is focused on meeting the real needs of donors and investors and this requires capacity, expertise, and a certain level of independence. For example, we have identified the strong potential of social impact bonds as an innovative financing tool for global education. The implementation of such an instrument requires considerable resources for research, structuring, and execution. Given that the financial sector and investment community do not have sufficient exposure to the education sector and given that education is not regarded as a priority investment sector, the GEIB can play a vital role in creating a “market” for financial innovation in education. For GPE, building up innovative financing capabilities through a close relationship with a GEIB sends a clear signal to its donor base that the organization is committed to sustainability and long-term impact.

Rather than bewail the fact that innovative financing is currently mainly a health sector game, it is timely to build on experiences—both good and bad—from health. The most important lesson is that of sustainability. It is clear that in education this is a priority, given that every year children enter school and hopefully continue in an educational system until young adulthood. It thus makes eminent sense for the global education sector to devote resources and effort to ensure sustainable, long-term revenue streams. A thought leadership, coordination, advocacy, and mobilization resource-base is needed to transform financial innovation from a scattered aspiration into an integral part of the global education landscape.

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## Appendices

### Appendix 1. Key Terms and Features of a Girls' Education Social Impact Bond (GESIB)

<p><b>Investment Rationale</b> (social impact bond investors want to clearly understand the impact of their investment)</p>	<p>What is the overall measurable target and what are the aims and objectives of the GESIB? What is the business case for focusing investment on girls' education? Who are the main sponsors and why are they engaging in this innovative financing initiative? Have the main sponsors set up an initiative (investment vehicle) that has the capacity to attain the stated aims and objectives—ensuring implementation, governance, evaluation, etc.?</p>
<p><b>Issuer</b> (who has legal and tacit ownership of the bond “vehicle”?)</p>	<p>Who will own the Special Purpose Vehicle (SPV) that will issue the GESIB? Incorporation and jurisdiction of SPV in terms of on-offshore/tax efficiency/special agreements and all issues related to legal structure of the SPV. How will the funds be raised—private placement, public offer, single issuer, loan-bond structure?</p>
<p><b>Guarantors/Funders</b></p>	<p>Who are the guarantors of the GESIB—countries, multi-laterals, foundations, sovereign entities, government-linked funds, etc. and what is the level of each commitment? Are the guarantors the “final payers” or do they just act as guarantors? What is the role of the government in the countries where the GESIB will be deployed—are they going to “pay for impact” and if so, partially or in full?</p>
<p><b>Use of Funds</b></p>	<p>Clear business case as to the effective and efficient application of the funds raised and clear, measurable outcomes. Who is the implementing party and who will undertake the evaluation of the impact? What are the appropriate impact metrics and what is their link to economic and social returns, women's empowerment, health and wellbeing, etc.?</p>

<b>Guarantee Mechanism</b>	<p>Description of the guarantors' commitment to unconditionally finance the coupon payments on the notes issued by SPV with designation of up to a maximum amount. Does the coupon change with level of impact?</p> <p>Principal:</p> <p>Description of the guarantors'/borrowers' commitment to providing SPV with up to X of conditional/unconditional grants to redeem the Aggregate Nominal Amount to Investors, subject to any terms and conditions to be described. If any guarantor makes a principal repayment commitment conditional upon some or other target being attained, then description of commitment of another guarantor(s) to provide the difference (up to a maximum amount to be designated) to ensure that the full Aggregate Amount will be redeemed in any event on the redemption date. Variations on this based on measurable impact attained/or not?</p>
<b>Maximum Grant Amount/Aggregate Nominal Amount</b>	Total amount of funding made available to the SPV/total amount of funding disbursed?
<b>Ratings/Currencies/Maturities/Coupon/Tranches</b>	Financial structuring of debt instrument
<b>Target Investor Base</b>	Social impact investors/philanthropic institutions; multi and bi-lateral agencies with interest in education sector; public and private parties with strategic initiatives in global education
<b>Funded Programs and Initiatives</b>	<p>Programs funded based on the following criteria:</p> <ul style="list-style-type: none"> <li>• Decision of expert investment committee</li> <li>• Measurable target and outcomes</li> <li>• Impact</li> </ul>
<b>Role of Project Advisor</b>	<ul style="list-style-type: none"> <li>• Undertake full GESIB research, development, and validation activities (as per Social Finance framework).</li> <li>• Propose overall structure and key participants/partners—geography, impact targets, implementation and evaluation agencies, expert committee, etc.</li> <li>• Select optimal jurisdiction and legal form of SPV</li> <li>• Identify suitable investment bank ("Arranger") for arranging social impact bond and inaugural note issue.</li> <li>• Identify relevant parties, in cooperation with Arranger: legal advisor, paying and transfer agent, registrar, listing agent, auditors, etc.</li> <li>• Manage establishment of GESIB.</li> <li>• Manage fundraising, establishment, arrangers, book-runners, legal firms, auditors, etc.</li> <li>• Manage GESIB operations, expert committee, implementation and evaluation, etc.</li> </ul>

## Appendix 2.

### Underlying Assumptions for GPE Impact Calculations

1. Estimating cost for these programs varies considerably according to program design, scale, available infrastructure, and implementation. The GPE has provided a guideline for estimates of cost (Crouch, 2011).
2. Average per pupil teacher cost at primary and secondary levels is \$90. It is assumed that GPE leverages 80 percent of salary recurrent cost in all cases on average, or, alternatively, that in 20 percent of the cases 100 percent of the salary cost is met by GPE funds but that in the other 80 percent of the cases no salary costs are paid by GPE.
3. Teachers are assumed to cost \$3,500 per year.
4. In-service training of all teachers is assumed to cost \$40 per teacher. This is driven by the assumption that trainers cost \$500 per month and can train and coach 15 groups of 20 teachers per year, and that salary costs are 50 percent of in-service training costs. Teachers are assumed to be trained once in the GPE funding cycle, when they come on-stream.
5. No provision is made for pre-service training. It is assumed either that teachers are already trained, or that their training will be in-service or provided via other means. This does not mean that programmatically the funding cannot be used for this purpose; it is simply a numerical assumption.
6. It is assumed that classroom costs are at \$10,000 per classroom and classrooms hold on average 50 children, but that classrooms last for 15 years and thus that this cost is amortized over 15 years. This is a simplified way of driving the assumption that the enrollment made possible by the surge in funding actually spreads out over 15 years, and thus that the real cost of the surge in enrollment should all not be attributed to the year in which it takes place.
7. Books are assumed to cost \$4, each child gets two, and they last three years.
8. It is assumed that only 1/10th of current enrollment is in the last year of the primary cycle, due to internal inefficiencies (repetition and dropout).
9. It is also assumed that there is a 1 for 1 expansion in the gross enrollment ratio at the secondary level in response to the expansion in the primary completion rate. However, it is assumed that 20 percent of the enrollment expansion financed by GPE does take place at the secondary level. This assumption is fully consistent with historical experience; in fact, it is based on an equation estimated using historical data.
10. The assumption is that countries ramp up their use of GPE funds, or their improvement, over three years, rather than enrollment increasing suddenly in the first year of the effort and then staying level thereafter. It is assumed also that countries then either get replenished or that they themselves sustain the funding needed to continue with enrollment and completion levels that peaked at the third year of the boost in enrollment. This is important, because in translating the number of “student-years” purchased (total funding/cost per student), if one spreads the total number of student-years evenly through the three years, the enrollment (or completion) achieved in the last year (and hence to be sustained) is lower than if one ramps up.



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