

# **Innovative Financing Mechanisms for Education\***

Daniel Altman<sup>†</sup>  
North Yard Economics and New York University

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## **Abstract**

Though most innovative financing mechanisms to date have collected money for global health, there is also scope for innovative financing mechanisms to fund education in developing countries. This paper discusses the mechanisms that may be appropriate for financing different stages of education. Mechanisms that draw funds from the global financial markets are possible at all levels of education, though only tertiary education may be capable of supporting mechanisms that reside entirely in the private sector.

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<sup>†</sup> Department of Economics, Stern School of Business, New York University; 44 West 4th Street, 7th Floor, New York, NY 10012-1126. Email: daltman@stern.nyu.edu.

## **1. Introduction**

Innovative financing mechanisms harness the power of markets to raise money for the purchase of global public goods. Traditional mechanisms such as foreign aid have been unable to garner sufficient sums to make significant progress in areas where money really can solve problems, such as the treatment of curable diseases and the provision of basic education. Though aggregating contributions to global public goods does help to achieve economies of scale, the aggregate contributions made by governments often fall short of the amounts that some citizens would choose (and also, to be sure, exceed the amounts that others would choose). Reaching higher levels of global public good provision thus requires a new or “innovative” set of fundraising mechanisms to supplement the traditional ones.

Improved education in developing countries is a global public good, because it has positive effects beyond their borders. Developing countries with higher education levels tend to have higher incomes and higher economic growth rates as well [Lutz et al., 2008], and thus their residents can buy more imports from the rest of the world. Countries with higher education levels may also have less fragile governments and experience less political instability [Barakat et al., 2008].

This paper attempts to open the discussion of how innovative financing mechanisms might add to traditional sources of funding for education. Several types of mechanisms show potential, but differences in legal, economic, and educational settings will likely require different approaches.

For the purposes of this paper, I will separate innovative financing mechanisms into two categories. In the first category, which I will call “investment mechanisms,” they offer a return to investors based on a set of contractual terms. These include the International Finance Facility for Immunization, which issues bonds in international credit markets to pay for large upfront purchases of vaccines; governments agree to pay the coupons and principal of the bonds over time in lieu of making annual commitments of aid. The second category will contain mechanisms that collect money entirely as donations; the contributors expect nothing in return except for the edification of an altruistic act and the potential benefit from the global public goods (e.g. public health, poverty reduction, clean air) that they are helping to procure. I will discuss the possibilities for each category of mechanism in turn.

## **2. Investment mechanisms**

So far, there are very few innovative financing mechanisms that strictly qualify as investment mechanisms. Part of the reason for this is that the sphere of global health, where innovative financing got its start, offers little scope for a return based on contractual terms. A country that contributes money to fight epidemics in the

developing world could certainly benefit monetarily from that investment – people in the developing world will live longer lives and buy more imports from the contributing country – but the return is too uncertain to be specified in a contract. Also, saving a life does not necessarily mean creating profit; a subsistence farmer cured of disease is still a subsistence farmer. And perhaps most importantly, it may be odious to propose, for instance, that people promise to pay a share of their future income in return for a lifesaving medical treatment.

Investment mechanisms show more potential in the education sphere, however. Educational attainment generally leads to higher incomes (and it is not usually a matter of life and death). The return to backers of an innovative financing mechanism could, in principle, come directly from those increases in income. I will refer to mechanisms that collect a return this way as “non-charitable”. How that return might be measured, collected, and distributed may vary widely based on the stage of education being financed and its political and economic setting.

## 2.1 Tertiary education

Tertiary education (at the university level) is the most straightforward, for several reasons. First, the return on tertiary education becomes available immediately after it is completed. Students leave university and can take higher-paying jobs than those they would have been able to obtain if their education had stopped with a high school diploma. Second, because students generally begin and complete their tertiary education as adults, a return for backers can be negotiated directly with them. Third, students’ future earnings can be inferred with relative accuracy based on their course of study.

There is precedent for financing tertiary education using market-based mechanisms. The United States government backs the Sallie Mae program, which purchases student loans in bulk to lower interest rates in the credit market. By providing liquidity to prospective students, the program allows them to borrow against their future income. As a pool, they insure each other in case some cannot earn enough to repay their loans. Sallie Mae achieves a positive real return on these loans.

On a smaller scale, some private programs have begun to finance tertiary education directly in exchange for a share of students’ future income.\* This is an investment in equity rather than debt. Students sign a contract when they enter university and promise to pay a share of their earnings to investors for a fixed period after they graduate. The main problem with these programs is the enforceability of the contract. Developing countries often have large informal economies, imperfect frameworks tracking payrolls and earnings, and weak legal systems. In addition,

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\* Information about such a program comes from a consulting project whose client must remain confidential at this time.

students who obtain good professional degrees may be tempted to leave their home countries and seek higher-paying jobs abroad. Though this would be good for investors in principle, the students may no longer be bound by their contracts – legally or in practice – once they emigrate.

## 2.2 Primary and secondary education

Financing of primary and secondary education using an investment mechanism is more difficult, because there can be much more variation in the returns from student to student. As a result, aggregation or bundling of risks becomes even more important than in the tertiary setting. There is also extreme variation in the quality of schooling at these levels, and the cost of education may not always be in line with quality.

In order to control these risks, it may make the most sense to finance entire cohorts of students rather than just those that sign up to sell an equity stake in their future earnings. Collecting a return from students whose early education is financed this way would not be easy, either; you cannot contract directly with children, and their parents may or may not be alive or present to enforce the contract when the children enter the workforce. Moreover, not all children – especially in developing countries – will take jobs with standard payrolls.

### 2.2.1 Public, debt-based mechanism

A public innovative financing mechanism for primary and tertiary education may therefore have to operate on a countrywide level. In return for funding an entire cohort of students, investors might receive a share of the income taxes collected from people in that cohort later in their lives. This setup presents additional problems, however. First, the government must be able to make a credible commitment to hand over a share of its tax revenue many years after such an agreement. Second, many developing countries collect tax revenue primarily through tariffs, value-added taxes, or other instruments rather than income taxes.

For these reasons, it may be more effective to offer the investment in primary and secondary education as debt rather than equity. Money could be raised using bond issues attached to the cohorts being financed, e.g., “Angola Class of 2022 at 6 percent, maturing in 2032.” The principal collected would be placed in a fund that would pay the costs of educating the cohort as it progressed towards graduation. The bonds could be structured so that they begin paying coupons after the students graduate or, alternatively, as zero-coupon bonds that mature after the students have worked for several years. The government could repay investors from its general revenue, on the assumption that its revenues had risen as a result of having a more educated population.

### 2.2.2. Private, equity-based mechanism

It may still be possible to use an equity-based financing mechanism for primary and secondary education by moving the mechanism entirely into the private sector. In a private system, the investors might actually finance the infrastructure for providing education and collecting their return. Investors could create their own schools, thus controlling the risks associated with the quality of education and eliminating any free-rider problems (i.e., that students from another cohort will somehow benefit from the funds attached to students in a cohort backed by an innovative financing mechanism). The investors could also devise a way of tracking the students after graduation in order to collect their return; the students would presumably obtain higher-earning positions than their peers, and therefore be more likely to work in the formal economy.

In this setting, entrepreneurs would probably choose to raise money through their own equity offerings or through a combination of debt and equity. The mechanism would be no different from any other private corporation.

Naturally, this mechanism might end up creating a parallel educational system in a country, and that outcome would invoke several questions: who controls the national curriculum, how schools compete for and hire teachers, whether private schools can be held accountable by local authorities, etc.

### 2.3 Lotteries

Lotteries have been proposed as innovative financing mechanisms since the Landau Report, which postulated dozens of possible mechanisms [Landau et al., 2004]. They can qualify as investment mechanisms, because they promise some return to contributors (at least in expectation). They are not specific to education, but there are two reasons to consider them as sources of cross-border financing for education in developing countries.

First, lotteries have already become significant sources of financing for education in the United States. State governments have used them with success to raise money, garnering as much as a third of ticket sales as revenue [Miller and Pierce, 1997]. Some policymakers think of lotteries as a voluntary tax; it may also be the case that the thought of helping children with their education assuages the guilt that some ticket buyers feel from gambling. The claim that ticket money goes to finance education is essentially a marketing ploy, however, since the states' budget monies are clearly fungible. The receipt of lottery money for education means more money can be shifted to other budget items, and empirical evidence suggests that this does occur [ibid.; Stanley and French, 2003].

Second, there is precedent for lotteries that cross jurisdictions. In the United States, there are large multi-state lotteries such as MEGA Millions and Powerball, and the Spanish government's Christmas lottery ("El Gordo") sells tickets all over the world.

### **3. Non-investment mechanisms**

The non-charitable mechanisms discussed above actually offer a return to their backers; any To date, innovative financing mechanisms have targeting markets whose participants are somehow realizing the economic gains of globalization. For example, UNITAID and its sister program MassiveGood raise money from the market for airline tickets, and one of the most popular mechanisms recently proposed for funding the Millennium Development Goals is a tax on currency markets. The motivation behind these choices was that people who have profited from globalization should share those profits with the world's less fortunate, or at least use a portion of the profits to mitigate global problems like epidemics and climate change.

The success of an innovative financing mechanism may also be enhanced if it depends on a market in some way related to the global public good for which money is being raised. Because computers are such fundamental educational tools, and the purchase of a computer usually runs into several hundreds of dollars – not unlike an airline ticket – that market might be an appropriate target for an innovative financing mechanism, such as a voluntary contribution similar to the one used by MassiveGood with travel purchases. So might the market for university textbooks, which was worth \$3.6 billion in the United States alone in 2008. The books often costs more than \$50, and demand is fairly inelastic; a small tax with such a broad base, like UNITAID's tax on airline tickets, might therefore raise substantial funds without distorting the market very much.

### **4. Conclusions**

There are several promising possibilities for innovative financing mechanisms aimed at education in developing countries. Putting taxes aside, the goal of these mechanisms is to provide individuals with an opportunity to finance global public goods to a greater extent than their governments have chosen through official aid. Investment mechanisms and voluntary non-investment mechanisms can provide this opportunity, but they offer the greatest effectiveness when they are attuned to the stage of education being financed.

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