

Making Every Dollar Count

How expected return can transform philanthropy



Prepared for the William and Flora Hewlett Foundation

April 10, 2008

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Making Every Dollar Count: A Summary

Imagine you're a program officer at a foundation devoted to reducing poverty. You get the joy of investing in projects that improve people's well-being. You're also in the painful position of turning down projects that could improve society, or even save lives. Deciding where to allocate resources can be nerve-wracking at best, heartrending at worst. There's an abundance of worthy causes and a limited amount of cash at hand. By saying "yes" to an investment, you could deprive another worthwhile initiative of funding. How do you decide which investments to take on? How can you make every dollar count?

Faced with nearly infinite need but decidedly finite resources, philanthropies consistently grapple with the challenges of funding allocation. Does influencing trade negotiation deserve more money than teaching children to

read? What about improving how government funds are allocated in impoverished countries?

To make matters worse, it's difficult to get accurate information about projects' potential benefits, let alone compare the value of diverse investments.

In spite of these challenges, the desire to do as much good as possible has always driven philanthropies to ask tough questions of themselves when comparing potential grantees. What is the ultimate goal? What are the most effective ways to reach that goal? How much is it going to cost? These questions are as old as philanthropy itself. What is often missing is a systematic method of answering them.

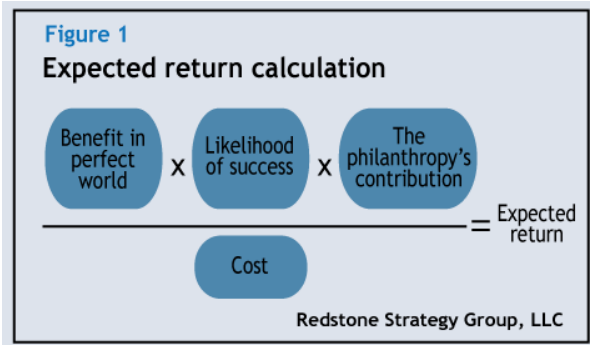
Enter Expected Return, a consistent, quantitative process for evaluating potential investments. Although still in its infancy, Expected Return has the potential to help maximize the return on scarce resources. Flexible, dynamic, and applicable to a broad range of topics, Expected Return asks and answers the right questions for every investment portfolio:

- ▶ What's the goal?
- ▶ How much good can it do?
- ▶ Is it a good bet?
- ▶ How much difference will we make?
- ▶ What's the price tag?

The first section of this paper presents the preliminary benefits of using Expected Return to systematize a philanthropy's grant-making process.

Section two describes the Expected Return calculation, which is comprised of four components (Figure 1): *benefit in a perfect world*, *likelihood of success*, *the philanthropy's contribution*, and *cost*. The result is a systematic estimate of the return on each potential investment and the ability to compare disparate projects.

Section three shows how Expected Return will become more robust through better estimation techniques and new applications.



A quick note on the case example used throughout the paper: In early 2007, the William and Flora Hewlett Foundation decided to experiment with the use of Expected Return in its grant making.

In choosing a test case, Hewlett looked for a program that would push the method's limits by posing difficult-to-quantify investment decisions. Fortunately the Foundation's Global Development program, which pursues the ambitious and complex goal of global poverty reduction, volunteered. Established in 2004 "to promote equitable growth in the developing world," the Global Development program spends more than \$60 million a year on a wide variety of initiatives aimed at reducing poverty.

Of course the Hewlett Foundation recognized that Expected Return is no panacea: its results are only as accurate as the professional judgments and assumptions that drive them. All involved acknowledged that the early

applications of Expected Return described in this paper greatly simplified complex elements of the estimation process (for example, how to quantify interdependencies between investments and how to discount costs and benefits).

Still, Expected Return delivered a valuable process for identifying strategies. It provided structure – in a complex social science setting – in which Program Officer judgment could be codified and applied consistently across investment decisions.

It helped the Global Development program move toward preliminary quantification of the returns to different strategies. Consequently, program officers can now quantify high-level tradeoffs between investments. The next step is to add ground-level, grant-specific measurement and fine-tuning.

The Hewlett Foundation's experiment with Expected Return reflects a longstanding commitment to improvements in the execution of philanthropy, and a strong belief that foundations are responsible for ensuring that their investments maximize benefits to society. While still in the early days, the experiment with Expected Return is clearly helping the Foundation in its commitment to make every dollar count.

1. Why It's Worthwhile

Reaping the Benefits of Expected Return



So many causes, so little funding... Expected Return helps channel investment dollars in the most promising direction by improving the way in which programs choose strategies and program officers make grants. Following a consistent process for identifying high-return initiatives helps stretch philanthropic resources and refine investment portfolios.

Expected return is a quantitative tool for comparing potential investments; it's a process of systematically drawing on existing knowledge to facilitate clear decision-making. Rather than trying to replace professional expertise or eliminate tough judgment calls, Expected Return provides a consistent method for bringing out the best from available information and resources.

Incorporating Expected Return in the Hewlett Foundation's Global Development program systematized the process of choosing the right investments, and led to a portfolio characterized by the following:

- ▶ **The best opportunities** – Expected Return provided a method to go beyond the faddish investments of the day. It systematically identified cost-effective investments, and down-graded those with low returns to philanthropic intervention.
- ▶ **Overarching goals** – Grant-making strategies have to be as multi-faceted as the problems they seek to tackle. Expected Return drew complex, diverse strategies together under a single, measurable goal with a standard metric of success.
- ▶ **Rigorous grant-making** – Expected Return's quantitative nature limited grant-making biases and made explicit previously unidentified risks and unspoken assumptions, changing the way program officers think about grant-making.

- ▶ **Maximum global impact** – Expected Return helped the program find the optimal geographic scope, balancing global and in-country investments to most effectively reach target populations.

Each of these four benefits is described in more detail in the sections that follow.

The best opportunities

Identifying and omitting low-return investments frees up funds to be spent on higher-return investments. Expected Return helped the Global Development program highlight and eliminate dozens of low-return investments. This improved the investment portfolio by:

- ▶ **Rejecting the wrong initiatives.** Some investments weren't logical for Hewlett to pursue. For example, some experts suggested that school feeding programs in developing countries would have high impact. However, large organizations with enormous means, such as the United Nations World Food Programme, are likely to be more effective in the highly decentralized arena of district- and community-level feeding efforts than an individual philanthropy.

In other cases, investments that were comfortable because they drew on existing knowledge proved to be less attractive than alternatives that stretched into new territory.

Thus Expected Return helped to avoid the risk that ‘when you have a hammer, you tend to look for a nail’.

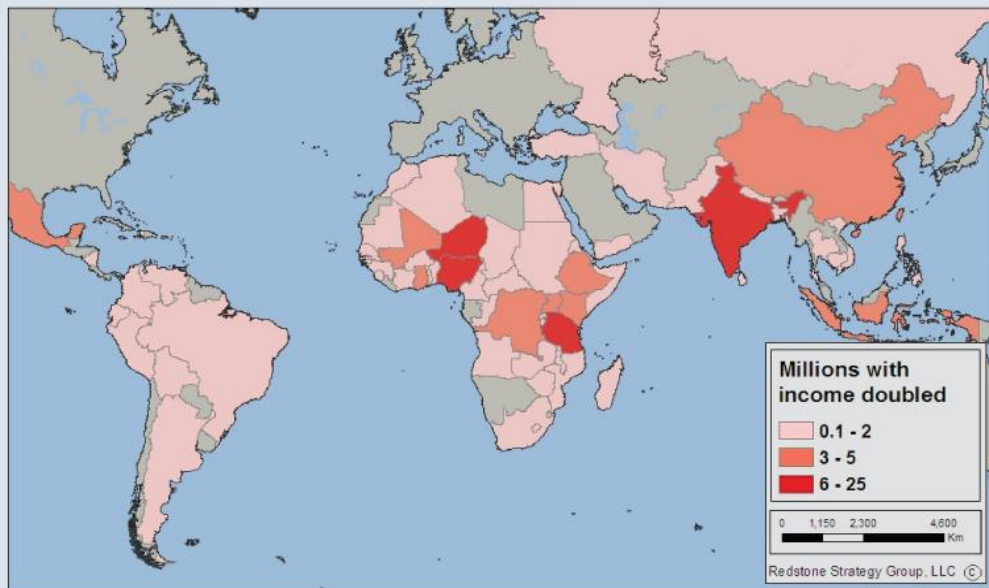
- ▶ **Reducing duplication of effort.** Expected Return helped eliminate strategies that already receive significant investment. For instance, providing microcredit has been shown to raise incomes in some settings, but a recent spate of microcredit initiatives is already addressing many high-return opportunities.
- ▶ **Reallocating funds to overlooked initiatives.** Transparency and accountability efforts have historically received little funding because of limited understanding about their link to poverty reduction. However, recent research shows that improved governance can dramatically improve the lives of the poor, and that philanthropy has high potential to effect change in this field. Expected Return analysis estimated high returns to investments in this area, bolstering the

Global Development program’s decision to be at the leading edge of this movement. Indeed, in many cases Expected Return highlighted the unique role that philanthropy can take by assuming greater risk, but potentially reaping far greater returns, than other more conservative institutional investors.

Focusing on the best opportunities doesn’t mandate putting all resources into the highest-return strategy. Rather, it aims to help a philanthropy make educated decisions on how to diversify investments. Many grantees are only able to productively absorb a limited amount of funding at any one time. Furthermore, strategies often produce diminishing returns on larger amounts (e.g., the second \$1 million spent on some investments may have a smaller effect than the first). Diversification also mitigates the consequences of misestimation of benefits or of investment risk.

Figure 2

Aggregating impact: Millions of poor people who could double income under various granting scenarios



Redstone Strategy Group, LLC

Overarching goals

Expected Return has helped the Global Development program see how a diverse set of strategies contribute to a unified, measurable goal. A program officer trying to choose between increasing the quality of education and influencing trade negotiations will find the task almost impossible without a common yardstick for evaluating both strategies. Explicitly linking all categories of investment to the overarching aim of reducing poverty has helped grantmakers focus on the program's ultimate outcome and given them a tool for achieving it.

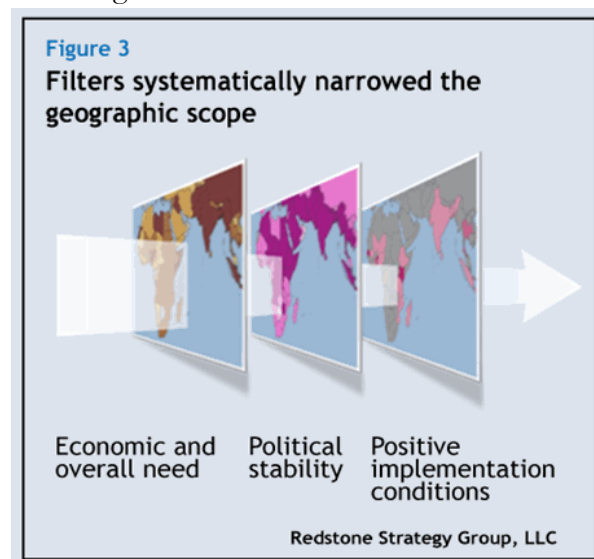
Expected Return, first, requires the translation of missions and (sometimes vaguely-worded) goals into quantifiable metrics and targets.

Through the Expected Return process, the Global Development program began by discussing their objectives during a multi-day workshop, and ultimately decided to set goals of doubling the incomes of people living on less than \$2 per day (Figure 2) and increasing human well-being as measured by a multi-factor index. Although two investments might result in very different accomplishments – say, influencing infrastructure throughout Africa versus increasing government transparency in an individual country – Expected Return allows these very different results to be compared based on their shared ability to reduce poverty and increase well-being.

Rigorous grant-making

Expected Return's ability to organize expert opinions and research to better ferret out opportunities has helped program officers think differently as they weigh potential investments. By assembling standardized, thorough, and explicit assumptions, Expected Return ultimately reduces potential biases in grant selection and makes grant-making more rigorous. The resulting documentation can be examined, challenged, and updated, and consequently leads to better decisions by:

- ▶ **Making assumptions explicit:** Program officers often have a deep understanding of their field and potential grants, and this knowledge is implicit in the decisions they make. However, by making assumptions explicit, Expected Return documents views that can be compared, across diverse strategies.



- ▶ **Reducing unidentified risk:** In the absence of an explicit calculation of likelihood of success, it's common to focus on impact alone. Making the expected probability of success explicit can help manage and mitigate program risk.
- ▶ **Quantifying tradeoffs and goals:** By translating diverse programs into a comparable metric, Expected Return provides a tool for quantifying tradeoffs between investments and a concrete measure of success for grantees. Because the process is dynamic, decisions can be reevaluated as assumptions are updated based on field experience, and failing strategies can be eliminated when appropriate.

Maximum global impact

During the first few years of its life, the Global Development program engaged in exploratory grantmaking based primarily on research in relevant fields, professional judgment, and

expert recommendations. Its goal was to gradually develop strategic plans for future grantmaking. As a new program with limited staff, it emphasized research and advocacy strategies that could achieve global impact by influencing decision-making, particularly within the United States.

As the program grew, it sought to deepen the impact of its grantmaking in the developing world. The program used Expected Return to help identify an optimal combination of global strategies, which can have wide-spread impact, and local strategies, which can be well-targeted toward key populations.

Although the Global Development program maintained its investments in some high-return global strategies, it also systematically narrowed its local focus to a handful of countries in a few regions where it believes it can have significant impact, based on need, political stability, and positive implementation conditions. It further narrowed the scope of particular strategies to sub-sets of these countries where impact is expected to be highest (Figure 3).

Limiting local investments to a specific set of countries helped maximize the program's impact. It also yielded practical program advantages, allowing the Foundation to begin to develop country-specific expertise, link projects on the ground, and streamline travel.

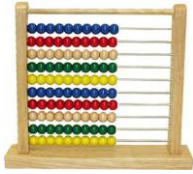
Conclusions

In essence, Expected Return is a way of documenting intended philanthropic impact. Its method is to make the evaluation of individual investments systematic and consistent. By quantifying the goals, benefits, risks, and costs of potential investments, Expected Return changes the way program officers approach grant evaluation by reducing biases, making assumptions explicit, and creating consistency across program areas.

The chapter that follows explains how it works; it describes the process of Expected Return.

2. How It Works

The Process of Expected Return



The previous section touched on the benefits of Expected Return. Now it's time to focus on the process. Expected Return translates five key philanthropic questions into a mathematical equation:

Calculating Expected Return is the process of translating existing ideas and knowledge into consistent, quantifiable forms. Expected Return answers five questions – one program-wide and four investment-specific – using information from program officers, field experts, academic research, data, and past experience.

- ▶ **What's the goal?** *Target* defines the topical and geographic scope of all potential investments and the metric used to measure them.
- ▶ **How much good can it do?** *Benefits in a perfect world* measures an investment's potential results under ideal conditions.
- ▶ **Is it a good bet?** *Likelihood of success* takes risk into account.
- ▶ **How much difference will we make?** *The philanthropy's contribution* describes the philanthropy's share of impact within a potential investment that **includes other sources of funding**.
- ▶ **What's the price tag?** The *cost* expresses the size of a philanthropy's financial investment.

This chapter explains how to define each of these variables and then how to calculate Expected Return using a specific case from the Global Development program: governance reform in Nigeria.

What's the goal? Defining the target

Target describes the ultimate outcome the program is trying to achieve, and defines the geographic and topical scope in which that outcome is to be achieved. The Global Development program used Expected Return to narrow investment options from an initial goal of reducing poverty anywhere in the developing world. The first step in calculating Expected Return was to quantify and define the scope of the program-wide task in more detail.

- a. **Choose a yardstick** – Before impact can be estimated, the program needs to decide on a metric. Creating a standard metric can be the most difficult step in calculating expected return, because it defines the yardstick by which the success of each investment is ultimately measured.

The choice of a metric can strongly influence the specific investments that are eventually selected. The Global Development program approached this choice by reviewing measures used by other organizations focused on development (e.g., the United Nations and the World Bank), and refining them to fit its particular needs.

In the end, the Global Development program focused and quantified their mission of equitable growth and their general goal of reducing poverty to measuring the equivalent number of people living on less than \$2/day whose incomes doubled as a result of Hewlett's efforts.

The program also tracked a multi-dimensional metric dubbed the Hewlett Global Development Index (HGDI) that

included literacy and health indicators, as well as income. This choice reflected the fact that although health and education outcomes are strongly linked to income, some investments can increase income without causing commensurate increases in well-being for the poorest members of society.

For instance, using HGDI as an indicator revealed that some policy investments that increased incomes substantially were concentrated on middle-income people in wealthier countries. As a result, the investments did not contribute to the well-being of the poor living on less than \$2 per day as substantially as other investments with similar average income increases. The difference between the HGDI and income rankings brought out this nuanced distributional effect of investments.

- b. **Define the geography** – Unless a particular philanthropy has the time and resources to evaluate every potential investment in every country in the world, an important step in calculating Expected Return is setting geographic boundaries on the consideration of strategies.

The Global Development program considered the possibility of working in 95 countries with significant poor populations. The program compared countries based on three criteria that were analyzed using a combination of quantitative and qualitative measures. The criteria were: economic and overall need; political stability; and positive implementation conditions. Once these filters were applied, the pool was narrowed to investments in 16 countries. The selected countries still encompassed 40 percent of the world's 2.9 billion poor people.

- c. **Define the playing field** – The Global Development program began the Expected Return process by creating a theory of change and logic model for each category of investment under consideration – quality education, government transparency and

accountability, and markets and trade – and brainstorming all possible poverty reduction strategies that contributed to the theories of change. It then discussed strategies internally and consulted with experts in the field to see if other strategies should be included, and to further narrow the range of investments it would consider.

How much good can it do? Estimating *benefits in a perfect world*

Benefits in a perfect world measures the many different outcomes of potential philanthropic investments – new irrigation systems, vaccinated children, reduced carbon emissions. To ensure consistency, these benefits are expressed in the single metric chosen above for all investments under comparison.

Benefits are estimated by identifying and quantifying the links between an investment and the desired outcome, often based on previous research. For instance, improving the quality of education by investing in teacher training can increase student literacy, which in turn may lead to increased productivity, more job opportunities, and higher wages later in life.

The Global Development program's Expected Return analysis drew on academic research on the relationship between education and income to quantify the benefits of such an investment. This allowed for consideration of direct benefits (e.g., education leading directly to higher incomes) as well as indirect benefits (e.g., education leading to improved health leading to higher incomes).

Is it a good bet? Estimating *likelihood of success*

Likelihood of success reflects the inevitable presence of risk. It takes into account three components that are combined to provide a risk estimate (Figure 4):

- a. **Strategic accuracy:** Likelihood that the hypothesis linking the strategy to the expected outcome is correct.
- b. **Grantee success:** Likelihood that grantees will have sufficient internal capacity, coordination ability, and influence to succeed.
- c. **External conditions:** Likelihood that the political and economic conditions necessary for success will be in place.

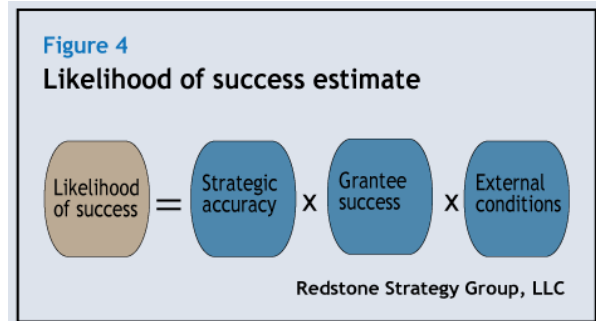
When possible, probability estimates should be based on documentary evidence from similar situations. Alternatively, interviewing experts in the field can serve as a source of information. Over time, refinements can be made to the probability estimates by incorporating additional data and expert opinions as strategies mature. The Global Development program estimated probability of success based both on interviews with experts, and on its own experience and the experiences of others with past investments.

How much difference will we make? Estimating a philanthropy's contribution

A philanthropy's contribution is the extent to which a specific philanthropy's share of a collective investment is responsible for driving the outcome. By measuring philanthropic contribution, a philanthropy can be sure its own investments will really make a difference.

Philanthropic contribution combines two components:

- a. **Financial contribution:** Percentage of an individual organization's contribution relative to the overall philanthropic contribution needed to achieve the outcome.
- b. **Degree of influence:** How essential the investment is to achieving the outcome. This measure can result in philanthropic contribution that is greater than the level of financial share (if the philanthropy is



providing substantial leadership, for instance), or can result in contribution that is less than financial share (if the philanthropy is relying on the leadership of others, and is contributing little other than money).

Since there's no obvious equation for weighing financial contribution and degree of influence, philanthropic contribution is tricky to estimate. Is a small financial investment combined with large political influence a bigger contribution, or vice versa? A grant that is small compared to the total cost of a project might be the tipping point needed to achieve the desired outcome. Similarly, an organization's expertise in a field might be a more powerful driver of success than its financial contribution.

Estimations of the philanthropy's contribution in the Global Development program relied on program officers' judgments and experience, and expert opinions on what was needed to drive the intended change. The program considered factors such as the success of similar grants in the past, the number of other players involved (e.g., other philanthropies, international organizations, national governments), whether the program had any particular expertise or political influence to offer, and what others were doing or planned to do.

Determining the exact impact of an individual philanthropy can be difficult. Yet, provided that over- or under-estimation remains consistent, the relative return of potential investments in comparison to one another will remain accurate. And while imprecise, the effort to estimate contribution can help program officers justify extra leadership efforts in some cases,

and can help them avoid possible temptation to ‘cherry pick’ grants that accomplish little that would not have occurred in any event.

What’s the price tag? Estimating cost

Cost is estimated based on past grants and expected grantee requirements. The cost of an investment has two components:

- a. **Program cost:** Cost to implement a specific strategy (e.g., carry out an advocacy campaign, develop new curriculum materials)
- b. **Overhead cost:** Cost to run the organization and to administer the grants (e.g., office space, staff salaries)

Because the total cost of an investment may be spread across multiple funders, only the share borne by the individual philanthropy in question is considered.

The Global Development program estimated costs based on similar past interventions and country-specific data. For instance, program costs for quality education investments were based on a combination of academic evaluations of programs similar to Hewlett’s proposed education grants in India and country-level data on students, teacher salaries, and class sizes.

In the Expected Return calculation, all other factors are divided by the total cost. This normalizes investments so that they represent a cost-benefit ratio, rather than reflecting benefits alone.

The case study

Because Expected Return calculations can be complicated, case studies are a good way to illustrate the mechanics.

The case¹ describes an investment considered by the Global Development program to improve transparency and accountability (T/A) in Nigeria (Figure 5). It is somewhat simplified, in that it only considers one of the two targets set by the Global Development program – the number of poor people for whom income is doubled.

The case is quite typical of the more than 100 investment categories that were subjected to Expected Return analysis by the Global Development program. The level of complexity and data availability are similar, and the results are at the upper-middle of the Expected Return pack.

Summary: Nigerian governance



In Nigeria, a history of unaccountable public expenditures and extreme poverty go hand-in-hand. Hewlett could promote better public services and higher incomes for the poor by supporting Public Expenditure Surveys that ensure effective public spending from revenue watch activities.

Figure 5

With that as background, here is the case example:

Despite \$50 billion in annual oil revenues and \$1 billion in annual aid, 92 percent of the population of Nigeria (over 120 million people) lives in abject poverty. To determine the expected value of the proposed T/A work in Nigeria, the Foundation relied on the analyses

¹ The case study shown here was developed in collaboration with Paul Brest and Hal Harvey. It appears together with a thorough description of several other social-return-on-investment calculations in their forthcoming book, *Money Well Spent: A Strategic Guide to Smart Philanthropy*.

of development experts and its on-the-ground experience supporting similar work in Mexico.

The ER calculations summarized here yield a pragmatic estimate of what the Foundation could hope to accomplish in Nigeria with an initial commitment of about \$30 million for a multi-year investment in T/A.

That amount covers a suite of grants for T/A support activities – such as expenditure tracking, budget monitoring, and “citizen report cards” on the quality of public services – that combine with significant investments by fellow foundations, multi- and bilateral donors, and others.

Calculating *benefits in a perfect world*

The benefits in a perfect world were the social benefits that would be realized if the proposed theory of change were to succeed perfectly. Cross-country research by Daniel Kaufmann and others at the World Bank and elsewhere, suggests that improving governance increases gross national income per capita and raises the well-being of the very poorest citizens by a relatively predictable amount. Based on the Foundation’s experience in Mexico and trends in Nigeria, the Program estimated that absent risk, the investments by Hewlett and others could double the incomes of about eight million Nigerians currently living on less than \$2/day.

Calculating *likelihood of success*

The likelihood of success reflected the fact that virtually all philanthropic theories of change face strategic, organizational, and external risks, and in this case the history of corruption in Nigeria exacerbated some of these issues. To calculate these risks, the Foundation consulted with experts from Nigeria and elsewhere and again took into account its own experience, particularly with T/A grant making in Mexico. Although staff members had initial confidence

in the proposed strategies, and in potential grantees in Nigeria, they acknowledged that the theory of change relies on many moving parts working together in just the right way. Taking into account all these risks, the Foundation gave its theory of change for Nigerian governance a 25 percent probability of success.

Calculating *the Foundation’s philanthropic contribution*

The Hewlett Foundation’s contribution was an estimate of the portion of success for which the Foundation’s effort could be credited, recognized both as the amount of dollars invested, and the influence of those dollars. Since the theory of change relied on donations by other foundations, and many non-philanthropic investments, Hewlett’s contribution would clearly be only one part of a larger effort. For instance, experience in Mexico suggested that an ongoing government contribution of more than \$200 million in present value could be needed just to fund an agency to administer freedom-of-information requests. All told, compared with other donor and government expenditures, Hewlett’s financial share of the theory of change would likely be less than five percent. However, given that Hewlett’s involvement was intended to be catalytic, the team estimated Hewlett’s contribution at 10 percent for the purposes of the ER calculation.

Calculating *the cost*

The cost associated with the benefits under consideration would include supporting NGOs engaged in budget and revenue monitoring, in expenditure tracking, and in training government officials in the implementation of freedom of information laws. The costs also included the administrative costs involved in making, monitoring, and evaluating grants. As mentioned earlier, the Foundation’s theory of change required that Hewlett invest \$30 million during an eight-year period.

As described in more detail in section four, the Foundation considered, then rejected, the idea of discounting this investment using present value. However, because all of the investments that the Foundation was comparing will operate in a similar time horizon, and because there is little agreement on an appropriate discount rate for efforts to improve human wellbeing, the Foundation assumed a zero discount rate.

Conclusions

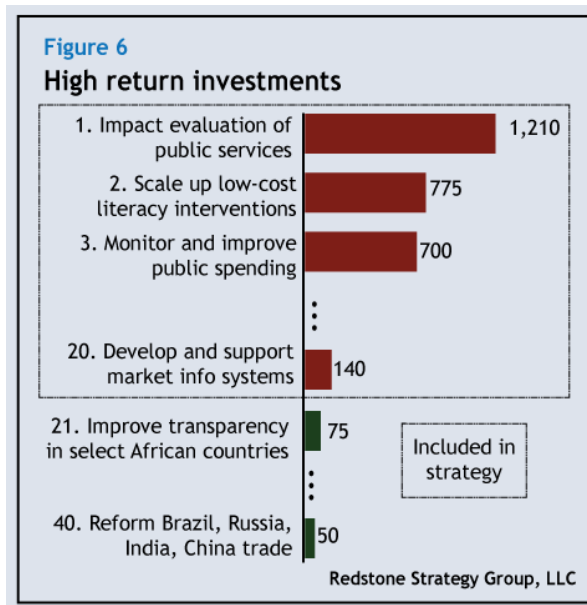
Putting the benefits factors together the Expected Return calculation estimated that the Global Development program's \$30 million investment in T/A work in Nigeria could double the incomes of about 200,000 people now living on less than \$2/day:

- a. *Benefits in a perfect world:* 8,000,000 poor people double incomes
- b. *Likelihood of success:* 25%
- c. *Hewlett contribution:* 10%
- d. *Cost:* \$30 million
- e. *Expected benefit:* 200,000 poor people double incomes

Thus, according to the ER calculation, every \$1 million that the Hewlett Foundation spent on improving T/A in Nigeria would likely contribute to the doubling of income for about 6,700 poor people. When this result was combined with credit for improvements in wellbeing, the T/A investment in Nigeria achieved a score of about 400 against the program's outcome index.

Similar analyses for an array of potential investments resulted in scores ranging from more than 1,200 for supporting impact evaluation of public services, to about 50 for reforming trade regulation in emerging economies such as Brazil and China. With due recognition of the imprecision of these estimates, the Foundation ultimately decided to further investigate a number of strategies with ERs of at least 150 (including T/A in Nigeria

and elsewhere, improving agricultural markets, and education in certain developing countries) (Figure 6). It also rejected a variety of candidate strategies with ERs of less than 150. As we write, the Hewlett Foundation is using this type of analysis to determine where in Africa to pursue certain of these strategies.



Postscript: Calculating Expected Return in dollars per dollar invested

Because the actual measure used by the Global Development Program included well-being factors that were not measured in dollars, the Foundation did not calculate the expected return on a per dollar basis for its decision making. However, with our simplified example this is possible. Just to close the loop, here's how one might do this.

Data suggests that the average income of a person in Nigeria living on less than \$2/day is \$644/year, so doubling his or her income would yield an annual increase of that same amount. Let's assume (conservatively) that the person earns this income for 10 years, yielding a total increase of \$6,440 (not discounted).

Referring back to the expected benefit result (200,000 poor people with doubled incomes) multiplied by the \$6,440, we arrive at a total expected return of \$1.25 billion for a \$30 million investment. This results in an expected

return per dollar invested of \$43 of income, which is substantial but perhaps not unreasonable considering the risks associated with the investment.

3 - What's Next

New Frontiers for Expected Return



The Hewlett Foundation's effort to apply Expected Return to one complex philanthropic program is a significant first step. Looking forward, three specific refinements to Expected Return can increase its utility even further:

- a. **Technical enhancements** – Expected return can benefit from improving the modeling of interdependencies, optimizing investment portfolios based on program constraints, and discounting future benefits.
- b. **In-country assessments** – Development conditions are often intensely local; Expected Return for development investments will require detailed in-country assessments.
- c. **Application to new topics** – Expected Return analysis can be strengthened by learning from applications in other social science fields, as well as by test cases in fields where more hard science is available.

Technical enhancements

As a relatively new analytical tool for the philanthropic sector, Expected Return can benefit from technical enhancements that will more accurately reflect the complexity of potential investments. These include:

- ▶ **Modeling interdependencies between investments** - To make more accurate tradeoffs between investments, the interdependent relationships between specific strategies should be reflected within Expected Return modeling. For example, an investment in keeping teenage girls in school might not make the cut based on its direct links to educational outcomes, but because it also contributes indirectly to population and women's rights outcomes, its overall value

for poverty reduction could be much higher. Common methods for modeling interdependent events include decision trees, Bayesian analysis, and compound probability analysis. These analyses require detailed assumptions of how events are related and the probability that they will occur, but even modestly improved assumptions can enhance the accuracy of Expected Return results.

- ▶ **Optimizing investment portfolios based on costs to foundations** - Funding and staffing constraints and necessary conditions for investment establish boundaries for investment decisions, which were only taken into account informally in the current analysis. Mathematical optimization techniques such as linear or integer programming can dramatically improve the usefulness of Expected Return results where there are multiple, conflicting constraints to be considered.
- ▶ **Discounting future benefits** - Financial theory tells us that a dollar today is more valuable than one received ten years from now. For this reason, future cash flows can be “discounted” to represent the value lost from the deferral of benefits or gained from the deferral of costs. In addition, the current simplifying assumptions that costs and benefits will be affected equally by exchange rates and inflation can also become more nuanced.

As mentioned earlier, this theory can also be applied to social investments with the theory that helping a person today is better than helping a person by the same amount ten years from now. However, selecting an appropriate discount rate for social investments is extremely difficult, and the choice of a rate can have a large impact on the relative value of long-term investments. Making these assumptions transparently is an important enhancement to Expected Return.

In-country assessments

Increasing the accuracy of assumptions for specific investment opportunities is the most important improvement that can be made to the Expected Return work undertaken to date. This is particularly true for potential grants that would take place in specific countries or regions. Because development conditions are often intensely local, detailed assessments at the country and regional levels can significantly improve the accuracy of assumptions about probability, cost, timing, and interdependence. This of course will significantly improve the accuracy of Expected Return calculations.

For example, improving student-teacher ratios may be a good investment overall in Sub-Saharan Africa, but it is important when targeting the exact location of the investment to

know that Malawi has over 70 students per teacher, while Ghana has only 30. Similarly, Mali can benefit from agricultural infrastructure investments, but the need is narrowly focused in the southwest region – the northeast is a desert (Figure 7). Thus, in-country assessments are a high priority in improving the ability to use Expected Return effectively in comparing country-specific development investments.

Application to new topics

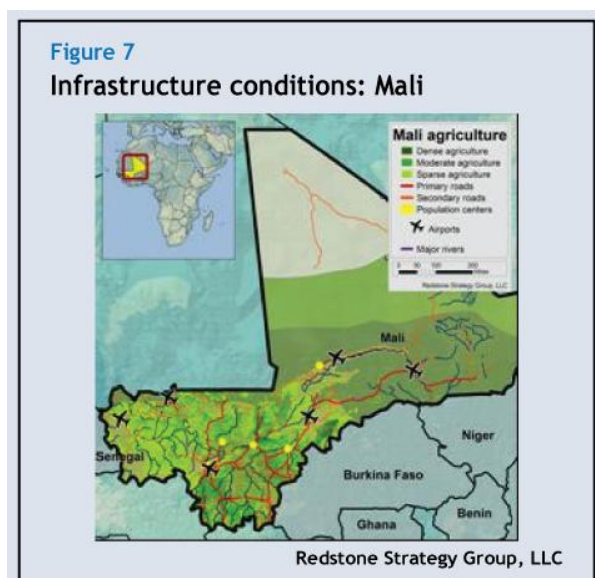
Sometimes the best way to learn is by doing. The Expected Return process was refined significantly during its application to the Global Development program, which faced a number of challenges that made it particularly valuable as a test case:

- ▶ **Diverse strategies** in areas like education, trade, and governance made philanthropic impact difficult to measure and compare. At the same time, the breadth of the program's goal allowed Expected Return to surface a wide range of opportunities, helping the program avoid a potential 'hammer and nail' problem
- ▶ **Multiple and conflicting views** of how development happens led to challenges in formulating clear theories of change and logic models.
- ▶ **Complex interactions** between potential investments made it difficult to analyze individual initiatives.

The initial success of Expected Return analysis suggests that the method may find new and valuable uses in other complex fields such as global health, the environment, or even the arts.

Conclusions

The use of Expected Return helped the Hewlett Foundation's Global Development program hone its investment portfolio and systematize its grant-making. It helped surface the best available information for decision-making, and helped pinpoint where information



that should influence decisions was good, and where more information would be useful.

As Expected Return takes on an expanded role at the Hewlett Foundation and other philanthropies in coming years, its ability to make every dollar count will be tested and strengthened. The current implementation of

Expected Return has significant room for growth. The transformative potential of Expected Return analysis, however, is already apparent.

Sources

- Abadzi, Helen. 2006. *Efficient Learning for the Poor: Insights from the Frontier of Cognitive Neuroscience*. Washington: The World Bank.
- Acemoglu, Daron, Simon Johnson, and James A. Robinson. 2001. "Colonial Origins of Comparative Development: An Empirical Investigation," *American Economic Review* 91(5): 1369–401.
- Adenikinju, Adeola. 2003. "Electric Infrastructure Failures in Nigeria: A Survey-Based Analysis of the Costs and Adjustment Responses," *Energy Policy*. Atlanta: Elsevier Science Ltd.
- Alston, Julian M., Sumner, Daniel A. and Brunke, Henrich. 2007. "Impacts of Reducations in US Cotton Subsidies on West African Cotton Producers." *Oxfam America Research Reports*. Boston: Oxfam America.
- Anderson, Kym, Will Martin, and Dominique van der Mensbrugge. 2006. "Doha Merchandise Trade Reform: What Is at Stake for Developing Countries?" *World Bank Economic Review*. Oxford: Oxford University Press.
- Angrist, Joshua, and Victor Lavy. 2001. "Does Teacher Training Affect Pupil Learning? Evidence from Matched Comparisons in Jerusalem Public Schools," *Journal of Labor Economics*, vol. 19, no. 2. Chicago: The University of Chicago Press.
- Azfar, Omar, and Tugrul Gurgur. 2001. "Does Corruption Affect Health and Education Outcomes in the Philippines?" Discussion Paper. College Park: Iris Center at the University of Maryland.
- Banerjee, Abhijit, Shawn Cole, Esther Duflo, and Leigh Linden. 2006. "Remedying Education: Evidence from Two Randomized Experiments in India," *Poverty Action Lab Working Paper*. Cambridge: Poverty Action Lab.
- Barro, Robert J., and Jong-Wha Lee. 2000. "International Data on Educational Attainment: Updates and Implications." CID Working Paper No. 42. Cambridge: Center for International Development.
- Barro, Robert J., and Xavier Sala-i-Martin. 2004. *Economic Growth*. Second Edition. Cambridge: The MIT Press.
- Bevan, David, and Geremia Palomba. 2000. "Uganda: The Budget and Medium Term Expenditure Framework Set in a Wider Context." Draft, October 2000. Washington: World Bank.
- Brest, Paul and Hal Harvey. 2008. *Money Well Spent: A Strategic Guide to Smart Philanthropy*. Bloomberg Press. Forthcoming November 2008.
- Bureau of Economic Analysis. 2007. "Regional Economic Accounts." Retrieved on March 15, 2007, from <http://www.bea.gov/regional/index.htm>.
- CIA 2006. *The World Factbook*. United States Central Intelligence Agency (CIA), November 2006.
- Clemens, Michael A., Radelet, Steven, and Bhavnani, Rikhil. 2004. "Counting Chickens When They Hatch: The Short-Term Effect of Aid on Growth." Working Paper 44. Washington DC: Center for Global Development.
- Cohen, Daniel and Soto, Marcelo. 2007. "Growth and Human Capital: Good Data, Good Results," *Journal of Economic Growth*. Berlin: Springer.

- De Gregorio, Jose, and Jong-Wha Lee. 2002. "Education and Income Inequality: New Evidence from Cross Country Data," *Review of Income and Wealth*. Oxford: Blackwell Publishing, Ltd.
- Demographic and Health Survey (DHS). 2000. Uganda. Maryland: Uganda Bureau of Statistics.
- DG-Development, Unit B2. 2007. "Advancing African Agriculture: Proposal for Continental and Regional Level Cooperation on Agricultural Development in Africa." European Commission.
- Dollar, David, and Aart Kraay. 2001. "Trade, Growth, and Poverty." Development Research Group, World Bank.
- Dollar, David, and Craig Burnside. 2004. "Aid, Policies, and Growth: Revisiting the Evidence." World Bank Policy Research Working Paper 3251. Washington: World Bank.
- Duflo, Esther and Hanna, Rema. 2006. "Monitoring Works: Getting Teachers to Come to School." Poverty Action Lab Working Papers. Cambridge: Poverty Action Lab.
- Education For All. 2000. "Status and Trends 2000: Assessing Learning Achievement." Paris: UNESCO.
- Education Policy & Data Center. "Country Profiles." Retrieved on March 15, 2007, from <http://www.epdc.org/Reports/CountryProfile/Default.aspx>
- Ellis, Frank, Kutengule, Milton and Nyasulu, Alfred. "Livelihoods and Rural Poverty Reduction in Malawi," *World Development*. London: Elsevier Ltd.
- Fan, Shanggen. 2004. "Infrastructure and Pro-poor Growth." OECD DACT POVNET Agriculture and Pro-Poor Growth, Helsinki Workshop, 17-18 June.
- Fan, Shenggen. Forthcoming. *Public Expenditures, Growth, and Poverty in Developing Countries: Issues, Methods and Findings*. Baltimore: Johns Hopkins University Press.
- Glewwe, Paul. 1999. *The Economics of School Quality Investments in Developing Countries: An Empirical Study of Ghana*. London: Oxford University.
- Glewwe, Paul, Nauman Ilias, and Michael Kremer. 2003. "Teacher Incentives," NBER Working Paper 9617. Cambridge: National Bureau of Economic Research.
- Global Monitoring Report. 2006. "Strengthening Mutual Accountability: Aid, Trade & Governance." Washington: World Bank.
- Hanson, Stephanie. 2007. "Nigeria's Creaky Political System." Council on Foreign Relations.
- Hanushek, Eric A., and Rivkin, Steven G. 2006. "School Quality and the Black-White Achievement Gap," NBER Working Papers 12651. Washington DC: National Bureau of Economic Research, Inc.
- Hanushek, Eric A., and Ludger Woessmann. 2007. "The Role of Education Quality for Economic Growth." Policy Research Department Working Paper 4122. Washington: World Bank.
- Human Development Report. 2006. "Beyond Scarcity: Power, Poverty, and the Global Water Crisis." New York: United Nations Development Program.
- Human Rights Watch. 2004. "Some Transparency, No Accountability: The Use of Oil Revenue in Angola and Its Impact on Human Rights." Retrieved on August 13, 2007 from http://hrw.org/reports/2004/angola0104/5.htm#_Toc60036823.

- Interviews, Transparency and Accountability 2007. Ngozi Okonjo-Iweala, World Bank. Nancy Birdsall, Center for Global Development. Lael Brainard, Brookings Institute. David De Ferranti, Brookings Institute. Rodolfo De la Torre, UIA. Jamie Drummond, DATA. Carlos Elizondo, CIDE. Rossana Fuentes, El Universal. Charles Griffin, Brookings Institute. Juan Pablo Guerrero, IFAI. Helena Hofbauer. Justin Jacinto, Brookings Institute. Larry Knowles. Eric Lief, CSIS. Sergio Lopez Ayllon, CIDE. Issa Luna, CETA. Nora Lustig, UIA. Ana Laura Magaloni, CIDE. Roberto Newell. Juan Pardinás, CIDAC. Steve Radelet, Center for Global Development. Jaime Serra, Santa Fe. Gayle Smith, Center for American Progress. Miguel Szekely, SEMS. Erin Thornton, DATA. Ann Tutwiler, Hewlett Foundation.
- Interviews, Agricultural Markets 2007. Ken Cook, Environmental Working Group. Cal Dooley, Food Products Association. Kim Elliott, Center for Global Development. Shenggen Fan, International Food Policy Research Institute. Paul Green, North American Millers Association. Joe Guinan, German Marshall Fund. Julie Howard, Partnership to Cut Hunger and Poverty in Africa. Gawain Kripke, Oxfam. David Orden, International Food Policy Research Institute. Susan Sechler, German Marshall Fund. Jean-Marc Trarieux, European Commission.
- Interviews, Education 2007. Nick Burnett, UNESCO. Robert Prouty, Fast Track Initiative. Cream Wright, UNICEF. Yolande Miller-Grandvaux, USAID. Penelope Bender. Lester Namathaka, Save the Children. Jordan Naidoo, Save the Children. Feleketch Braharu Gameda, Save the Children. Louis Crouch, Research Triangle Institute.
- IMCO (Instituto Mexicana para la Competitividad A.C). 2006. Punto de Inflection: Situation de la Competitividad de Mexico 2006.
- International Monetary Fund. 2005. Guide on Resource Revenue Transparency. Washington, DC: International Monetary Fund.
- Ingo, M., and John D. Nash. 2005. Agriculture and the WTO: Creating a Trading System for Development. Conference Edition. Washington: World Bank.
- Juhn, Chinhui, Kevin Murphy, and Brooks Pierce. 1993. "Wage Inequality and the Rise in Returns to Skill," *Journal of Political Economy*. Chicago: University of Chicago Press.
- Karl, Marilee. 1996. *Inseparable: the Crucial Role of Women in Food Security*. Manila: Isis International.
- Kaufmann, Daniel, Aart Kraay, and Pablo Zoido-Lobato. 1999. "Governance Matters." Policy Research Department Working Paper 2196. Washington: World Bank.
- Kaufmann, Daniel, and Aart Kraay. 2002. "Growth without Governance." Washington: World Bank.
- Kaufmann, Daniel, and Aart Kraay. 2003. "Governance and Growth: Causality which way? – Evidence for the World, in brief." Washington: World Bank.
- Kaufmann, Daniel. 2005. "Myths and Realities of Governance and Corruption." Washington: World Bank. September 2005. www.worldbank.org/wbi/governance/pdf/2-1_GCR_Kaufmann.pdf.
- Kaufmann, Daniel, Aart Kraay, and Massimo Mastruzzi. 2006. "Governance Matters V." Washington: World Bank.
- Kremer, Michael, Karthik Muralidharan, Nazmul Chaudhury, Jeffrey Hammer, and F. Halsey Rogers. 2004. "Teacher Absence in India." Washington: World Bank.

- Kremer, Michael, Edward Miguel, and Rebecca Thornton. 2007. "Incentives to Learn," Poverty Action Lab Paper No. 42. Cambridge: Poverty Action Lab.
- Kremer, Michael and Edward Miguel. 2001. "Worms: Education and Health Externalities in Kenya," Poverty Action Lab Paper No. 6. Cambridge: Poverty Action Lab.
- Levy, Santiago. 2006. *Progress Against Poverty: Sustaining Mexico's Progresa-Oportunidades Program*. Washington: Brookings Institution Press.
- Lloyd, Cynthia B., Kaufman, Carol E., and Hewett, Paul. 2000. "The Spread of Primary Schooling in South Africa: Implications for Fertility Change," *Population and Development Review*. Oxford: Blackwell Publishing Ltd.
- Lopez, J. Humberto. 2004. "Pro-growth, pro-poor: Is there a tradeoff?" Policy Research Working Paper 3378. Washington: World Bank.
- Ministry of Finance/REPOA. 2004. "Tanzania Public Expenditure Tracking Study – Study of the Financial and Non-financial PEDP flows from Central Government to Schools in 2002 & 2003." The United Republic of Tanzania.
- Moll, Peter G. 1996. "Primary Schooling, Cognitive Skills and Wages in South Africa," *Economica*. London: Blackwell Publishing Ltd.
- Nickell, Stephen. 2004. "Employment and Taxes." CEP Discussion Papers dp0634. London: Centre for Economic Performance at the London School of Economics.
- Nkamba, Manasseh and Kanyika, Joe. 1998. "The Quality of Primary Education: Some Policy Suggestions based on a Survey of Schools—Zambia, An Interim Report." SACMEQ Policy Research Report No. 5. Paris: UNESCO.
- OECD 2006. "OECD International Development Statistics."
- Orden, David, et. al. 2004. "Trading Up: How International Trade and Efficient Domestic Markets Can Contribute to African Development." IFPRI 2020 Conference Brief 5.
- Pinstrup-Andersen, Per. 2005. "Why are so Many People in the Developing World Poor and Hungry?" *Strengthening Rural Communities Hunger Report 2005*, ch. 2. Washington: Bread for the World Institute.
- Poverty Action Lab. November 2006. "Making Schools Work for Marginalized Children: Evidence from an Inexpensive and Effective Program in India," Policy Briefcase No. 2. Cambridge: Poverty Action Lab.
- Pratham Resource Center. 2005. "Annual Status of Education Report: Final Report" Mumbai: Pratham Resource Center.
- Reddy, Sanjay, and Camelia Minoiu. 2006. "Development Aid and Economic Growth: A Positive Long-Run Relation." www.columbia.edu/~sr793/ReddyMinoiuAidandGrowth.pdf
- Reinikka, Ritva and Svensson, Jakob. 2002. "Assessing Frontline Service Delivery." World Bank. www1.worldbank.org/publicsector/anticorrupt/AssessingFrontlineService.doc.
- Reinikka, Ritva and Svensson, Jakob. 2005. "Fighting Corruption to Improve Schooling: Evidence from a Newspaper Campaign in Uganda," *Journal of the European Economic Association*. Cambridge: The MIT Press.

- Robinson, Mark, and Vinod Vyasulu. "Democratizing the Budget: FUNDAR's Budget Analysis and Advocacy Initiatives in Mexico," Lessons from Civil Society Budget Analysis and Advocacy Initiatives. June 2006.
- Roodman, David. 2006. "The Commitment to Development Index: 2006 Edition." Center for Global Development, August.
- SACMEQ. 2007. "Southern and Eastern Africa Consortium for Monitoring Educational Quality." Retrieved on March 15, 2007, from <http://www.sacmeq.org/access.htm>.
- Saito, Katrine A. 1994. Raising the Productivity of Women Farmers in Sub-Saharan Africa. World Bank Discussion Papers. Washington DC: The World Bank.
- Sternberg, R. J., Grigorenko, E. L., and C. Nokes. 1997. "Effects of Children's Ill Health on Cognitive Development," in M. Young (Ed.), Early Child Development: Investing in our Children's Future. Amsterdam: Elsevier.
- Taylor, Michael R. 2007. "Investing in Africa's Infrastructure to Achieve Economic Growth and Poverty Reduction: Opportunities and Challenges." Draft, March 2007. Washington: Partnership To Cut Hunger and Poverty in Africa.
- Timmer, C. Peter. 2005. "Agriculture and Pro-Poor Growth: An Asian Perspective." Working Paper No. 63. Washington: Center for Global Development.
- Tollens, Eric. 2002. "Market Information Systems in Liberalized African Export Markets: The Case of Cocoa in Cote d'Ivoire, Nigeria and Cameroon." Working Paper, no. 71, Department of Agricultural and Environmental Economics at Katholieke Universiteit Leuven.
- Transparencia Mexicana. 2005. Indice Nacional de Corrupcion y Buen Gobierno. <http://www.transparenciamexicana.org.mx/ENCBG/#encbg2005>
- Uganda MoES. 2005. "Education Data Overview." Uganda Ministry of Education and Sport. Retrieved on April 3, 2007, from <http://www.education.go.ug/>.
- UN Millennium Project Task Force on Education and Gender Equality. 2005. "Towards Universal Primary Education: Investments, Incentives, and Institutions." London: Earthscan.
- UNCTAD. 2006. "Overview of the World's Commodity Exchanges." United Nations Conference on Trade and Development.
- UNDP. 2006. "Human Development Report 2006: Beyond Scarcity: Power, Poverty and the Global Water Crisis." United Nations Development Program.
- UNESCO. 2006. "School Fee Abolition Initiative Workshop: Building on What We Know and Defining Sustained Support." United Nations Educational Scientific and Cultural Organization.
- UNESCO. 2007. "Country Profiles." United Nations Educational Scientific and Cultural Organization (UNESCO) Institute for Statistics. Retrieved on May 15, 2007, from http://stats.uis.unesco.org/unesco/TableViewer/document.aspx?ReportId=198&IF_Language=eng
- Urquiola, Miguel. 2006. "Identifying Class Size effects in Developing Countries: Evidence from Rural Bolivia," Review of Economics and Statistics, 88(1): 171-177. Cambridge: Kennedy School of Government at Harvard University.

- Vermeersch, Christel, and Michael Kremer. 2004. "School Meals, Educational Achievement and School Competition: Evidence from a Randomized Evaluation," World Bank Policy Research Working Paper No. 3523. Washington: World Bank.
- Von Braun, Joachim, et. al. 2004. "Making Agricultural Trade Liberalization Work for the Poor." WTO Multilateralism at a Crossroads public symposium. Geneva, Switzerland. IFPRI.
- Watkins, Kevin, et al. 2005. Human Development Report 2005: International Cooperation at a Crossroads. Aid, Trade and Security in an unequal world. ISBN 0-19-530511-6. New York: United Nations Development Program.
- Watkins, Susan C. 2000. "Local and Foreign Models of Reproduction in Nyanza Province, Kenya," Population and Development Review. Oxford: Blackwell Publishing Ltd.
- World Bank. 2004. "Books, Buildings, and Learning Outcomes: An Impact Evaluation of World Bank Support To Basic Education in Ghana," World Bank Operations Evaluation Department Report No. 28779. Washington: World Bank.
- World Bank. 2007. World Development Indicators 2007. Washington: World Bank.
- World Development Report. 2004. Making Services Work for Poor People. Washington: World Bank.
- World Development Report. 2007. Development and the Next Generation. Washington: World Bank.
- World Development Report. 2008. Agriculture for Development. Draft, March 2007. Washington: World Bank
- World Food Programme. 2006. "Fact Sheet: Food for Education."
- World Trade Organization. 2007. "International Trade Statistics 2006." Retrieved May 15, 2007, from http://www.wto.org/english/res_e/statis_e/its2006_e/its06_toc_e.htm.