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On Evaluating Socially Responsible Investment Projects-Creation of an Index of "Goodness"

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Many philanthropists, charitable foundations, and aid agencies are interested in impact investing, a method of investing that focuses on return to society, as opposed to return on investment. Investment projects that cater to societal needs are abundant, but there is no accepted yardstick, like an ROI, for such "impact" projects. In this paper, we create a mechanism that can help decision makers evaluate investments with a social benefit. We develop an index of the "goodness" of a project that can help investors rank projects. This "index of goodness" is easily understood, with its number representing the percentage of human population that will benefit from such an investment. By providing a comprehensive method for selecting among social projects, we help in allocating capital to its most socially beneficial purposes.

Keywords: Investment Projects, Index, Goodness

JEL Classification: C51, D61, D63, G31, M14

I. Introduction

Investing with the additional benefit of creating social good is now in vogue, with different terms being used, such as socially responsible investing, impact investing, responsible investing, corporate social responsibility, blended value, and economic, social, and governance investing. There are several academic papers on the pros and cons of such investing, as well as metrics used in measuring the "impact" or "social good." See, for example, Freeman and Reed (1983); DiMaggio and Powell (1983); Rogers (1995); Mulgan *et al*. (2011); Thornley *et al*. (2011), and Freireich and Fulton (2009), just to name a few. Many studies discuss the various metrics employed in evaluating the impact of such investments (Chew *et al*., 2011; EBAN, 2011; Ruttmann, 2012, and Grabenwarter and Liechtenstein, 2011). However, researchers agree there is a lack of uniformity and standardization among metrics used in all investments that purport to do "good" (Godeke and Pomares, 2010).

Impact investments may have different objectives, which makes developing metrics to evaluate them a difficult task. For example, Table 1 illustrates various impact objectives as defined by the Impact Reporting and Investing Network (IRIS). The Global Impact Investing Network (GIIN) and IRIS are widely recognized sources of measurement and reporting of impacts.

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Table 1: Impact Objectives

Increase incomes and assets for low-income or excluded people	Improve basic welfare for people in need	Mitigate climate change
Access to energy	Access to clean water	Biodiversity conservation
Access to financial services	Affordable housing	Energy and fuel efficiency
Access to education	Conflict resolution	Natural resources conservation
Access to information	Disease-specific prevention and mitigation	Pollution prevention and waste management
Agricultural productivity	Equality and empowerment	Sustainable energy
Capacity-building	Food security	Sustainable land use
Community development	Generate funds for charitable giving	Water resources management
Employment generation	Health improvement	
Income/productivity growth	Human rights protection or expansion	

Source: IRIS. As defined at iris.thegiin.org.

In a 2015 GIIN study**,** "Introducing the Impact Investing Benchmark," impact themes were classified into six categories:

(1) **Financial inclusion:** The provision of financial services to populations that otherwise lack access. This includes investments in microfinance, small and medium enterprise (SME) finance, and community banking.
(2) **Employment:** Strategies that focus on job creation in areas of need, job quality improvement, and workforce development.
(3) **Economic development:** Investing in sectors that promote the improvement of economic conditions and standards of living. This includes companies contributing to basic infrastructure, such as transportation or telecommunications.
(4) **Sustainable living:** Improving access to healthy and environmentally friendly products and services. This includes organic health products and locally sourced foods.
(5) **Agriculture:** Investments along the food and agricultural value chain that are oriented towards efficient and sustainable practices and yield improvements to help feed more people at a lower cost and improve livelihoods of smallholder farmers.
(6) **Education:** Investing in innovations or business models that improve education outcomes or expand access to education.

In traditional investments, net present value, internal rate of return, return on investments, and payback periods are commonly used to evaluate and rank investment projects. The issue with impact investments is that the returns are not only financial, but are also socially beneficial. This makes evaluation of such investments very difficult. If no financial return is expected from such investments, then they take on the nature of "charitable donations." However, many impact investors do want a financial return as well as a social return.

In this paper, we construct an index that measures the "goodness" of impact investments. This index does not strive to evaluate investments using traditional metrics such as ROI, net present value, or profitability measures. If impact investors are only concerned with maximizing the social benefit, without regard to financial returns, then this index will give them a way to rank projects. The index captures the "goodness" aspect of investments by measuring the potential benefit to a segment of the human population. The greater the potential benefit to humanity, the greater will be the ranking of such an investment among all impact investments. An index of goodness will be able to answer questions such as if it is more beneficial to find a cure for prostate cancer, help

children in the African continent be literate, or develop a vaccine to cure AIDS. In the interpretation and use of such an index, one has to necessarily make assumptions about the number of the potential beneficiaries, as well as the duration of the impact for current and future generations.

This "index of goodness" is vastly different from and superior to existing socially responsible metrics. This index is more general and is widely applicable to all socially responsible investments. It does not limit itself to one specific area of social investments, as the existing metrics do. Due to its simplicity and construction, this index can be useful for measuring the impact of all social investments.

This paper is organized as follows: After the introduction is a section on index construction. Then there is a description of real life data used in the construction of the index, as well as a discussion on limitations and shortcomings of the index. The paper ends with our conclusions and suggestions for future research.

II. Construction of the Index of Goodness

It is generally agreed that any socially responsible investment should do the maximum good, or help the greatest number of people, or touch human lives in a positive way. In this respect, given two investments, the one that benefits the greater number of people deserves to be funded first. In this regard, the term "people" includes adults and children, regardless of gender, age, and nationality. It is also assumed that financial returns from such investments are of secondary importance compared to their potential benefit to humanity.

To determine the size of the potential beneficiaries of any socially responsible investment, we make use of population data available from the World Bank's Data Bank[1].

The index of goodness for any investment is computed as follows: Potential beneficiaries times duration of benefit/total population with duration of benefit times 100.

For example, if an investment has its main goal of finding a cure for prostate cancer, then we can develop an index that can evaluate its goodness based on certain assumptions. If we assume males may develop prostate cancer at reaching 60, and average life expectancy of a male is 75 years, then the cure for prostate cancer will lead to an expected increase in life span of 15 years per male. If we multiply that by the total male population, and divide it by the total population, we will get a measure of what percentage of humanity will benefit from this investment. In other words, the index for such an investment will be: (Average life expectancy of a male minus age at which prostate cancer develops, say, 60)/(total population times average life expectancy of a human) X 100.

It is to be noted that the computed index in this example will be a very small percentage of humanity as this type of cancer affects (a) only males (b) and only males over a certain age.

Let us contrast this with another investment that focuses on children's education in, say, Africa. The benefit of such an investment will be equal to the product of the number of children in Africa times (average life expectancy of an adult minus the age at which a child is inducted into the literacy program). This benefit is then divided by the total population times life expectancy of a human and multiplied by 100 to yield a percentage. In both investment examples that are listed above, the ranking of those investments will be determined by the percentage of humanity that will benefit, or the value of the index of goodness. Once such indices are compiled for various

[1] Available at databank.worldbank.org.

investments, investors can gauge which socially responsible investments have the biggest "bang", and then evaluate them using traditional cost-benefit analysis.

III. Numerical Example of Index Construction

Goal of investment: Finding a cure for prostate cancer in the U.S. (assuming males develop cancer at age 60).
Life expectancy of male at age 60 years (2012 data): 21.763 years (see Appendix B)
Life of male with prostate cancer (assumed): 60 years
Impact of investment (assuming prostate cancer was cured, and male lived up to his average life expectancy at age 60): 21.763 years
Life expectancy at birth in the U.S.: 71 years (2012 data) (see Appendix A)
Index = (21.763 years times 155,510,557)/(7,089,309,348 times 71 years) X 100 **= 0.67 % or 0.00672. This index is useful when ranking projects from all over the world.**

Index = (21.763 years times 155,510,557)/(314,112,078 times 78.7 years) X 100 **= 13.69 % or 0.1369**
This index is useful when ranking projects within the U.S.

Another example (data in Appendix C):
Goal of investment: Reduce the number of out of school primary school children in the Arab world
Impact = Reduce the number of out of school children from 6,461,655 to zero.
Index = 6,461,655/7,089,309,348 X 100 = 0.0**9 % or 0.00091**

IV. Limitations of the Index

The construction of indices to be used in evaluating various investments is heavily dependent on data availability and is very data intensive. Assumptions need to be made on data reliability and during the interpretation of results. Consequently, indices can be easily misused to promote certain areas of investment.

Another limitation of an index of goodness is data availability. Most data used in the examples was for 2012, the latest year for which data was available in the World Data Bank resource.

The interpretation of the index can also lead to misleading conclusions. For instance, the very small value of the index may lead investors to believe that the impact of such an investment is too small to undertake. However, the benefits of reducing the out of school children population to zero may have far reaching societal implications, not only for the region, but also for the world. If investors take the leap of connecting the number of terrorist incidents in the world with number of out of school children, then this investment may not seem so bad.

Some may argue that costs, financial returns, and risks must also be considered while constructing an index. It is true that those are valid factors to be considered, but if only a small segment of the population benefits from an investment, we need to question whether the investor really wants to achieve maximum "goodness" with his investment.

V. Conclusions

In this paper, we attempted to create a method of evaluating socially responsible investments by quantifying their impact on humanity. By using actual data, we created a yardstick by which we can measure the "bang" of the investment, and subsequently decide if these investments are worth undertaking. The underlying assumption of such an index is to maximize overall "goodness" without giving importance to dollar returns, risks, and costs.

Further research needs to be conducted on typical mainstream socially responsible investments to see if they have the most reach. If they do not, then the investor needs to question if his resources are better served in some other area, where the impact can be larger. After creating indices for various impact activities (such as childhood literacy, reducing harmful pollution, curing illnesses, etc.), one can then attempt to influence policy makers to adopt policies that do the most good, rather than what is trending in popular opinion.

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Appendix A: Gender Statistics Data

	2011	2012	2013	2014
Life expectancy at Birth (total years)*	70.7	71	71.2	
Life expectancy at Birth (total years)-Males*	68.7	69	69.2	
Life expectancy at Birth (total years)-Females	72.8	73.1	73.3	
Life expectancy at Birth (total years)- U.S.	78.6	78.7	78.8	
GNI PER CAPITA (PPP)*	13,379.50	13,925.80	14,373.30	14,931.30
POPULATION 0-14 FEMALE*	895,852,368	901,931,359	909,005,656	916,342,189
POPULATION 15-64 FEMALE*	2,265,482,900	2,292,245,153	2,318,807,119	2,344,729,432
POPULATION 15-64 MALE*	2,321,389,779	2,349,807,924	2,378,282,538	2,406,232,155
POPULATION 15-64 TOTAL*	4,586,872,483	4,642,052,979	4,697,089,557	4,750,961,575
POPULATION 65+ FEMALE*	299,155,716	306,420,100	314,624,353	323,802,185
POPULATION FEMALE*	3,460,490,888	3,500,596,515	3,542,437,126	3,584,873,998
POPULATION MALE*	3,546,979,913	3,588,712,833	3,632,084,233	3,675,836,679
POPULATION MALE (U.S.)	154,259,286.	155,510,557	156,764,793	157,999,184
POPULATION (TOTAL) U.S.	311,721,632	314,112,078	316,497,531	318,857,056
POPULATION TOTAL*	7,007,470,801	7,089,309,348	7,174,521,359	7,260,710,677

Source: World Data Bank (Gender Statistics Database).
Note: Life expectancy data for 2014 is not yet available.
* Applies to world.

Appendix B: Life Expectancy at Age 60 in Years in Various Countries (2012)

Afghanistan	14.9491239
Albania	19.22597183
Algeria	20.89253439
Angola	15.0893177
Antigua and Barbuda	19.954
Argentina	18.5829794
Armenia	17.03729826
Aruba	17.99876122
Australia	23.27622727
Austria	21.80329846
Azerbaijan	16.42822687
Bahamas, The	20.43457611
Bahrain	18.91558015
Bangladesh	18.23685586
Barbados	17.7612355
Belarus	14.51231983
Belgium	21.66445073
Belize	15.75477775
Benin	14.95703118
Bhutan	20.17208932
Bolivia	20.02302919
Bosnia and Herzegovina	18.45901157
Botswana	15.91900713
Brazil	19.42041195
Brunei Darussalam	20.12199817
Bulgaria	17.00187365
Burkina Faso	14.68117684
Burundi	15.76607776
Cabo Verde	17.32082802
Cameroon	15.03594436
Canada	23.08469433
Central African Rep.	15.03878084
Chad	15.19135077
Channel Islands	21.33904497
Chile	23.08370512
China	18.31697674
Colombia	20.08226703
Comoros	15.31598179
Congo, Dem. Rep.	16.04903985

Congo, Rep.	17.21542642
Costa Rica	22.16244517
Côte d'Ivoire	13.82831437
Croatia	18.15915446
Cuba	21.71070667
Curacao	20.87157584
Cyprus	20.439
Czech Republic	19.3440864
Denmark	21.26518516
Djibouti	16.85174319
Dominican Republic	20.35
Ecuador	21.74562548
Egypt, Arab Rep.	16.04881398
El Salvador	20.14456688
Equatorial Guinea	16.26078119
Eritrea	13.67399807
Estonia	17.86699549
Ethiopia	17.12255292
Fiji	15.30985199
Finland	21.61828403
France	22.8849112
French Polynesia	18.87428571
Gabon	17.65431268
Gambia, The	14.66818684
Georgia	17.50436221
Germany	21.59484033
Ghana	15.03108857
Greece	21.50597568
Grenada	17.533
Guatemala	20.25
Guinea	14.71146345
Guinea-Bissau	14.49996566
Guyana	15.41958781
Haiti	16.8919561
Honduras	20.7024131
Hong Kong SAR, China	23.4465927
Hungary	17.53246155
Iceland	23.40023029
India	16.9656016

Indonesia	15.24539784
Iran, Islamic Rep.	19.10934104
Iraq	16.21103953
Ireland	21.71968539
Israel	23.2299183
Italy	22.96345322
Jamaica	20.98352872
Japan	23.00051736
Jordan	17.82363367
Kazakhstan	14.37725052
Kenya	17.06496504
Kiribati	15.51971406
Korea, Dem. Rep.	13.67356388
Korea, Rep.	21.54577543
Kuwait	17.3768129
Kyrgyz Republic	15.50394516
Lao PDR	15.7548778
Latvia	16.44507705
Lebanon	20.41151655
Lesotho	14.49359747
Liberia	14.83724382
Libya	16.84017931
Lithuania	15.43306498
Luxembourg	21.93722124
Macao SAR, China	21.32681065
Macedonia, FYR	17.65450549
Madagascar	16.21158359
Malawi	17.5731862
Malaysia	18.42885311
Mali	15.13622886
Malta	21.45964223
Mauritania	15.75138266
Mauritius	18.02413872
Mexico	21.63684651
Micronesia, Fed. Sts.	16.49727494
Moldova	14.75324198
Mongolia	16.00334512
Montenegro	18.38541401
Morocco	18.50847194

Mozambique	16.17336358
Myanmar	15.66978051
Namibia	15.89000271
Nepal	16.4180858
Netherlands	21.98927558
New Caledonia	18.31726195
New Zealand	23.17391459
Nicaragua	21.02007424
Niger	15.49138068
Nigeria	13.44987484
Norway	22.22320326
Oman	19.33726945
Pakistan	17.54783994
Panama	22.51406807
Papua New Guinea	13.25806174
Paraguay	19.95
Peru	19.76229447
Philippines	15.10498206
Poland	18.74890428
Portugal	21.52707508
Puerto Rico	21.063
Qatar	20.51234485
Romania	17.59342186
Russian Federation	15.18871585
Rwanda	17.12063203
Samoa	16.41267346
Sao Tome and Principe	17.4937002
Saudi Arabia	17.44219828
Senegal	15.70905268
Seychelles	16.87
Sierra Leone	12.97044209
Singapore	22.47227363
Slovak Republic	17.71368682
Slovenia	20.59572097
Solomon Islands	16.11808374
Somalia	15.5408997
South Africa	13.46960398
South Sudan	15.85737537
Spain	22.48073797

APPENDIX 2: LIFE EXPECTANCY AT AGE 60 IN YEARS IN VARIOUS COUNTRIES (2012):

Appendix B: Life Expectancy at Age 60 in Years in Various Countries (2012): Continues

Sri Lanka	19.08707558
St. Lucia	19.216
St. Vincent and the Grenadines	18.936
Sudan	17.16787878
Suriname	16.73581447
Swaziland	15.30302175
Sweden	22.82185614
Switzerland	23.20148223
Syrian Arab Republic	16.76535657

Tajikistan	16.24997503
Tanzania	17.84160622
Thailand	20.02643495
Timor-Leste	16.07731674
Togo	14.65113008
Tonga	16.22360241
Trinidad and Tobago	16.095
Tunisia	17.74390866
Turkey	18.63381512
Turkmenistan	14.96149135

Uganda	16.61869939
Ukraine	15.21567048
United Arab Emirates	19.47924539
United Kingdom	22.0530005
United States	21.76293193
Uruguay	19.03719554
Uzbekistan	16.56706123
Vanuatu	16.88765505
Venezuela, RB	18.57821146

Vietnam	19.29858024
Virgin Islands (U.S.)	20.43327203
West Bank and Gaza	17.22202026
Yemen, Rep.	15.40900179
Zambia	16.99272704
Zimbabwe	16.8021075

Appendix C: Out of School Students in the Arab World

Series	2011	2012	2013
Out-of-school children of primary school age, both sexes (number)-(A)*	6,240,621	5,955,474	6,461,655
Population of the official age for primary education, both sexes (number)-(B)**	42,640,448	43,149,752	43,685,936
Population, total- (C)***	355,137,048	362,466,629	369,761,523

Data Definitions:

* A: Children in the official primary school age range who are not enrolled in either primary or secondary schools. Source: UNESCO Institute for Statistics.

** B: Population of the age-group theoretically corresponding to primary education as indicated by theoretical entrance age and duration. UNESCO Institute for Statistics.

*** C: Total population is based on the de facto definition of population, which counts all residents regardless of legal status or citizenship--except for refugees not permanently settled in the country of asylum, who are generally considered part of the population of their country of origin. The values shown are midyear estimates. Sources: United Nations Population Division. World Population Prospects, United Nations Statistical Division. Population and Vital Statistics Report (various years), Census reports and other statistical publications from national statistical offices, Eurostat: Demographic Statistics, Secretariat of the Pacific Community: Statistics and Demography Programme, and U.S. Census Bureau: International Database.