PRACTICAL REASON IN ECONOMICS:
CONTRIBUTIONS FOR REFINING THE HUMAN
DEVELOPMENT INDEX

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Practical Reason in Economics:
Contributions for Refining
the Human Development Index

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In the present study, we claim that economics needs to reinsert practical reason into its field. We use the Human Development Index (HDI) of the United Nations Human Development Program to explore this necessity. We intend to show that the HDI has underlying technical and practical assumptions which are not always or sufficiently explained or argued.

Keywords: Economic Methodology, Economic Development, Welfare Economics.

JEL classification: B4, O1, D6.

En el presente estudio sostenemos que la economía necesita reinsertar la razón práctica en su campo. Utilizamos el Índice de Desarrollo Humano (IDH) del Programa de Naciones Unidas para el Desarrollo para explorar esta necesidad. Buscamos mostrar que el IDH se basa en supuestos técnicos y prácticos implícitos que no siempre son suficientemente explicados o justificados.

Campos temáticos: Metodología de la Economía, Desarrollo Económico, Economía del Bienestar.

Clasificación *JEL*: B4, O1, D6.

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Introduction

Development and poverty have been the object of a considerable share of the economic literature during the last three decades or so. Following Amartya Sen's (1976) seminal work, analytical tools were developed to identify the poor and to aggregate them into measures able to convey relevant information for public policy purposes. [1]

The vast majority of these studies in the economic field concentrated on monetary indicators (usually income or expenditure) as a proxy for well-being. Traditionally, the procedure involved using market prices to aggregate different goods and services enjoyed by the individual and comparing them to a so-called poverty line, a constructed basket including food and non-food items that ensures a minimum acceptable standard of living. Those above the poverty line were considered non-poor, those below, poor. Different methods were developed to construct poverty lines,[2] as well as measures to aggregate the poor and generate informative indexes.[3] In spite of their differences, all of these approaches had a common understanding: they were based on a unidimensional concept of poverty.

Most interestingly, in recent years a new agreement has been achieved around the need to assess poverty and development from a multidimensional perspective: "a consensus has emerged among those studying and making policies related to individual's well-being: poverty is best understood as a multidimensional phenomena" (Battiston *et al.* 2009: 2). Much of this agreement follows Sen's capability approach (CA) which moves the focus away from the means to achieve welfare and puts it on the freedom people have to achieve plural functionings they have reason to value.[4] As such, this approach considers poverty as a lack of these freedoms, assessing multidimensional poverty in terms of capabilities.[5]

Assessing development in this sense implies the alignment of ends qualitatively different. This is facilitated by the reduction of the different qualities involved to a common quantity. Numbers are homogeneous and practical. Expressing realities in numbers facilitates decisions. How could we reduce choice about qualitative features to a quantitative calculation? Within these technical tools, index numbers provide an easy homogeneous representation of multiple factors. The Human Development Index (HDI) provides such a tool in the development field. Launched in 1990 by the United Nations Development Program (UNDP), it was one of the first attempts to measure development framed in Sen's CA.

This homogenization has, however, its limits. There is a trade-off between the realism of considering human heterogeneity and the feasibility of managing human affairs. Thus, when reducing complex realities into numbers, we must recall that ends are heterogeneous and entail values that can only temporarily be hidden. As Sen (1999: 80) contends, "the implicit values have to be made more explicit." Quantitative reasoning is not enough: Sen also stresses the need of using practical reason to scrutinize the ends we are going to look for (2002: 39 and 46).[6]

In addition, the very nature of measurement in social sciences also calls for the definition of the process that leads to the production of such indexes, a process in which all stakeholders should be able to participate. Nobody wants to act in order to attain a set of ends that has not been chosen by him/her. Nobody wants to be an automaton. Every person should participate in a reasoned definition of goals; or at least should be informed about them and should be free of adhering or not. In Sen's words (1997: 206):

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[1] As pointed out, for example, by Nora Lustig (in Kakwani and Silber 2008: foreword), Nanak Kakwani and James Silber (2008: introduction), Erik Thorbecke (2008: 3), Battiston et al. (2009: 3), and Alkire and Foster (2009).
[2] Currently, two main methods for setting the poverty line are used in the unidimensional approach: the *Cost of Basic Needs* and the *Food Energy Intake*. See Thorbecke (2008).
[3] The most well-known of these being the family of measures developed by Foster, Greer and Thorbecke, the so-called "FGT" measures. See Foster *et al.* (1984).
[4] See Sen (1985, 1993, 1999).
[5] We will return to this in the following section.
[6] As in the rest of this work the term "practical" is not used here in the sense of pragmatic but of prudential reason, decision or action.

"In the democratic context, values are given a foundation through their relation to informed judgements by the people involved… It is not so much a question of holding a referendum on the values to be used, but the need to make sure that the weights –or ranges of weights– used remain open to criticism and chastisement, and nevertheless enjoy reasonable public acceptance. Openness to critical scrutiny combined with –explicit or tacit– public consent is a central requirement of non-arbitrariness of valuation in a democratic society."

Nevertheless, although the reduction of qualitative concepts to quantitative measures cannot be done in whatever way and will always be imperfect representations, we need them. A number may conceal complex realities but it is useful. What is important is to bear in mind the need for an explicit account of the underlying apparent technical and value-neutral decisions. However, this kind of reasoning is not always present in economics, which has become ever more technical.

In this paper we claim that practical reason needs to be reinserted into its field. An exclusively technical approach leads to a partial analysis that is far from being relevant and from expressing real phenomena without distorting it. Not only numbers are important, but also the way they are obtained: conceptual and technical assumptions will shape the way a certain phenomena is measured.

In the present study we analyze the HDI as a special case of what we are discussing. The definition of the capabilities involved and the particular way this assumes in the current HDI specification, as well as their rules of combination involves practical as well as technical reasons. It is a good example because in it we need to define concepts, to discover or decide causes=capabilities=ends, and to technically combine these elements. And this process should be open to all those affected by it. Our claim is that, although the HDI is a good tool in the field of development, it lacks a clear account of this process and so should be improved in this respect.

The rest of the paper is organized as follows. Section 2 presents a brief description of the HDI, followed by a discussion on the difficulties involved in calculating indexes, and in particular, of the HDI, in section 3. Section 4 presents the practical reasoning underpinning the HDI. The last section provides some concluding remarks and suggestions for improving the HDI.

1. The HDI

In 1990, the United Nations Development Program (UNDP) published its first annual Human Development Report (HDR) introducing the HDI. This Index was inspired in Sen's capabilities approach (CA), which emphasizes the importance of ends (capabilities) over means (e.g., income). The HDI adopted some *measurands* for three specific capabilities: health, education, and a decent standard of life. The *measurands* are respectively life expectancy, literacy and school enrollment, and income. They are combined into the Index to evaluate the level of human development defined in this way among countries or to monitor them over time. HDI provides a better alternative than evaluating a country's development in terms of its per capita national income. Heavily based on the CA, HDI's project leader Mahbub ul Haq's intended to define through it a new concept of well-being and to make available measures of well-being based on that conception. Sen, who was one of the principal consultants on HDR *1990*, at first did not see the point of a crude composite index like the HDI. Haq instead maintained: "We need a measure of the same level of vulgarity as GNP –just one number– but a measure that is not as blind to social aspects of human lives as GNP is" (UNDP 1999: 23). More recently Sen (2009: 226) has affirmed:

The motivations behind the 'human development approach', pioneered by Mahbub ul Haq, a visionary economist from Pakistan who died in 1998 (whom I had the privilege to have as a close friend form our students days), is to move from the means-based perspective of the gross national product (GNP) to

concentrating, to the extent that the available international data would allow, on aspects of human lives themselves.

The HDI specification is the following:

$$(1)H - Index_i = \frac{LE_i - 25\,years}{85\,years - 25\,years}$$

$$(2)LIT - Index_i = \frac{LIT_i - 0\%}{100\% - 0\%}$$

$$(3)ENR - Index_i = \frac{ENR_i - 0\%}{100\% - 0\%}$$

$$(4)E - Index_i = \tfrac{2}{3}\left(LIT - Index_i\right) + \tfrac{1}{3}\left(ENR - Index_i\right)$$

$$(5)Y - Index_i = \frac{\ln(Y_i) - \ln(\$100)}{\ln(\$40,000) - \ln(\$100)}$$

$$(6)HDI_i = \frac{\left(H - Index_i + E - Index_i + Y - Index_i\right)}{3}$$

That is to say, it is an Index composed by three factors equally weighted, i.e., life expectancy (LE), a mix of literacy (LIT) and school enrolment (ENR), and Income (Y) with extreme values defined. As mentioned, these *measurands* are supposed to represent Health (H), Education (E) and Standard of life (Y). The HDI has evolved over the years trying to improve its quality and capacity of representation of real human development. This refinement stems from the need to give an answer to different external criticisms to the Index and from the own initiative of the UNDP for improving it. In the next Section we will note some problems related to the work of the index numbers and of the HDI in particular.[7]

2. Some problems of index numbers and of the HDI in particular

Practical knowledge is inexact because it does not deal with necessary facts which always occur in the same way, but with general facts which occur most times in the same way, but not necessarily always. Given that, by definition, statistics deals with general facts it is clear that its conclusions are inexact in this sense of the term inexact. This does not indicate a weakness of statistics but rather reflects the nature of its subject-matter. We might express this saying that statistics is not faulty of this weakness. An adult literacy of 85% means that 85 of 100 adults know how to read and write, and 15 do not know. That is, 85% applies to the whole, not to the particular individuals. In fact, the correct policy is not to improve 15% the literacy of all the people, but to look for the 15% illiterate and to teach them. This figure (85%) is, however, true about the whole and highly useful. The statistician puts into brackets the contingency of the particular case and, at the same time, he considers it. The German philosopher Wolfgang Wieland (1996: 133), referring to statistical regularities warns: "these regularities apply to the wholes excluding an immediate application to their individual components." As Keynes affirms in his *Treatise on Probability*, "probability begins and ends in probability" (1921: 356). He then explains "This is due to the fact that a statistical induction is not really about the particular instance at all, but has its subject, about which it generalizes, a series" (1921: 411). This does not mean that statistics is not useful for science. Let us hear again from Keynes: "Although nature has her habits, due to the recurrence of causes, they are general, not invariable. Yet empirical calculation, although it is inexact, may be adequate in affairs of practice" (1921: 368). Statistics helps to detect the problem but further more

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[7] For a review of this criticisms, see Stanton (2007: 16-28) and Bagolin and Comim (2008: 17-22).

specific analyses are needed in order to solve it. This is a first quite obvious caution that we have to take into account when dealing with statistics.

We then have the problem of the different scales. In short, the different natures of the things measured calls for specific ways of measuring them:

- First, quantitative realities as length, weight, velocity, sales, can be measured by cardinal numbers by defining a standard unit: meter, kg, km/h, and units or money.
- Second, the evolution of these quantitative realities can be measured by a ratio between the values compared: as, for example, the evolution of the price level. We may define a standard value deciding a base period –e.g., the price level of 1960=100– and thus transform the ratio into a cardinal scale. However, the resulting numbers only make sense in reference to that basis.
- Third, we can establish an ordinal scale of qualitative realities. This scale constitutes a way of comparing the qualities, not of commensuration: a picture is nicer than other. However, we can establish indirect measures of some qualitative things, for example, temperature. Strictly speaking we are assigning a number by defining a standard to, e.g., the length of the mercury column: this is an indirect though useful representation of the temperature and its changes. We can also rank the beauty of pictures or the happiness of nations, for example, doing surveys and assigning numbers to the answers of people or supposing, for example, that the price of the last sale of the picture is representative of its beauty. This is evidently imperfect, but might also be useful.
- There are, finally other realities that cannot be put in an order of greater or lower, i.e., cannot be ranked, such as gender, ethnicity or marital status (see Boumans and Davis 2009: 152), and also human capabilities.

Given that, as Suppes (2000: 550) affirms, "extensive quantity" –quantity measured cardinally– admits addition, while "intensive quantity –expressed in ordinal scales– does not admit addition, we need to transform ordinal scales into cardinal scales in order to have an operative tool. However, this reduction supposes to accept –and remember—the above mentioned limitations.

Specifically when dealing with index numbers other limitations appear originated in their being composed of heterogeneous variables. Different values of variables of different categories are transformed into a dimensionless index, to obtain a ranking. We calculate the ratio among the values assigned to each category and extreme values of them, and then we calculate the average of the obtained ratios. What is incommensurable is made commensurable by adopting a conventional standard unit for each incommensurable variable, calculating the value of the variables according to these units, and adding a weighted proportion of the values of all the variables (Boumans 2001: 326 and Morgan 2001: 240). This means that we are accepting *inter alia* the assignment of weights for each variable indicated in the index number formula. This is a key for this conflation. The weight must be the "due" weight (Morgan 2001: 240). This is not easy when the categories to be weighted are qualitatively different (see Banzhaf 2001).[8] We are all conscious that little changes in the composition of the index might drastically change the ranking results. This capacity to handle index numbers may be subject to manipulation. The way of avoiding this is to clearly show the decisions made together with their arguments. This clearly shows how the technical aspects are intermingled with judgmental practical aspects: beliefs and values affect technical decisions. Allen (1951: 100ff.) considers technical problems concerning the choice of items, the choice of formula and the choice of base periods. However, these technical problems also involve values. Morgenstern, for example, after expressing his concern about the accuracy of data, considers technical problems, but he also recognizes "that we are here confronted with a political as well as an economic problem" (1963: 192).

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[8] We shall return to these issues in the following section.

As explained by Sen, capabilities are incommensurable. We can obtain an ordinal ranking by comparison of incommensurable categories.[9] We cannot commensurate income, longevity and literacy because they are measured by different measurement units. We can only compare and rank them for a specific situation, and say, for instance, that for this country today is more relevant to increase its income than to put effort on education. These are practical judgments involving beliefs about priorities of values. There is no way of organizing these judgments without values. What is the meaning of the Index number comprising these three dimensions? The index number decides a unique rank stemming from a comparison, makes it legitimate for any country, time and situation; then it decides *measurands* of the dimensions and assigns extreme numerical values to them in order to construct a ratio scale of each dimension; finally it adds the resulting numerical values weighted. In the case of the HDI one third is assigned to each variable. We are applying ratios to ordinal categories and adding their weighted numerical values (see Boumans and Davis 2009: 152; Finkelstein 1982: 19). We need to have in mind that the result is based on a convention. Anand and Sen (1994: 2) recognize that there is a loss of information when using an aggregate number (a "scalar") for a set of numbers representing individual circumstances (a "vector"). In the same vein, they (2000) affirm that the domain of the Human Development Report is much wider than what is captured by the HDI. As the first HD Report affirms, "The index is an approximation for capturing the many dimensions of human choices. It also carries some of the same shortcomings as income measures" (UNDP 1990: 1). This is also affirmed by Sen who speaks of the HDI as a "measure with the same level of crudeness as the GNP" (1999: 318, nt. 41).

There is another risk in proceeding in this way, as noted by Ludwik Finkelstein (1982: 11): "once a scale of measurement is established for a quality, the concept of the quality is altered to coincide to the scale of measurement." That is, for example, that we come to think that development consists in a combination of longevity, literacy and income, which is a poor concept of development.

Further problems of the index numbers are technical and also about the accuracy and homogeneity of data. The need of simplicity may go against realism. However, we cannot discard index numbers for these reasons –as much as we remember that technical decisions might have impact over practical aspects: technical problems could be overcome.

We must accept that measurement always imply reductions. Boumans (2001) explains Irving Fisher's account of Index Numbers and their inconsistencies, as described by Ragnar Frisch, Abraham Wald and Wolfgang Eichhorn. However, as also Boumans (2001: 336) remarks, the strength of Fisher's account is not based on his stress on theory but on the instrumental usefulness of this tool; in addition, Fisher avowed that it is an imperfect tool. We do not look for a full axiomatic consistency but for the best balance between theoretical and empirical requirements (2001: 316), for the best possible approximation. The assessment of the satisfactoriness of this approximation goes beyond mathematical consistency (2001: 341). It is a pragmatic question of reasonable consensus.

Thus, index numbers are tools for measurement as well as for pragmatic aims. Let us recall Plato's thinking about the usefulness of measurement for practical purposes: he asked science will save us from the unpredictable contingency? and he answered: "the science of measurement" (Protagoras, 356e). Human beings strive for security and measurement helps to get it. Martha Nussbaum accurately notes that:

> What we need to get a science of measurement going is, then, an end that is single (differing only quantitatively): specifiable in advance of the techne (external); and present in everything valuable in such a way that it may plausibly be held to be the source of its value.[10]

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[9] Scales of measurement in the social and behavioral sciences are nominal or ordinal (Finkelstein 1982: 26).
[10] Nussbaum (2001a: 179). See also Elizabeth Anderson (1993: 3.1).

The definition of the practical purpose is obviously not valueless. As remarked, the limitations of the HDI have been well recognized and the Index defended on practical grounds. Regardless all its limitations, the HDI is a worthy task. This is very well expressed by Paul Streeten (1994: 235):

> It is clear that the concept of human development is much deeper and richer than what can be caught in *any* index or set o indicators. This is also true of other indicators. But, it might be asked, why try to catch a vector in a single number? Yet, such indexes are useful in focusing attention and simplifying the problem. They have a stronger impact on the mind and draw public attention more powerfully than a long list of many indicators combined with a qualitative discussion. They are eye-catching.

Summing up, the HDI has to be taken as no more than an orientation, has to be handled with care, and refined through technical improvements and practical reason. The policy maker should go beyond the simple Index and analyze its components in order to detect the fields in need of improvement.

3. Practical decisions in the HDI

The HDI supposes some theoretical definitions and practical decisions that should be made more explicit or argued in order to improve the quality of the Index and for the sake of a "fairer play". We want to clarify from the onset that we do not want to affirm that theoretical and practical aspects were not sufficiently studied by the builders of the Index. What we intend to say is only that these studies have not been sufficiently put on record in the different documents related to the HDI, i.e. the HDRs.

This deficiency suffered by the HDI can be assessed across different issues. Following Alkire (2008: 93), we can identify seven different areas[11]:

1. the domains or dimensions chosen;
2. the indicators selected;
3. the incorporation of freedom and agency into the measure.;
4. the relative weights of each dimension (and indicators);
5. the interaction among indicators and dimensions;
6. the establishment of a poverty line (i.e.: how to identify the multidimensionally poor);
7. the selection of a poverty index (i.e.: how to aggregate the multidimensionally poor).

In each of these dimensions, theoretical and practical decisions are involved which are not always sufficiently discussed. In this sense, Ingrid Robeyns (as quoted in Alkire 2008: 107) advances four criteria that can serve as a guideline when assessing whether this has been complied with:

- *explicit formulation of decisions:* why it is claimed that these choices are what people value and have reason to value.
- *methodological justification:* the method that has been used to make each choice should be clarified and defended, open to critique and modification.
- *ideal-feasibility:* choices should be made in two stages, deciding in first place what should ideally be done and then what it is possible according to the data. Current empirical constraints could evolve in time.
- *exhaustion and non-reduction:* no relevant aspects should be excluded, specifically, not those related to the non-market economy.

The four points proposed by Robeyns are, indeed, a good guideline to assess the extent to which practical reason has been included in the development of the HDI. Does the HDI

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[11] The order in which the issues suggested by Alkire are presented is mine.

comply with these criteria in each of the areas suggested by Alkire? In the following, we will try to give an answer to this question.

The first two domains suggested by Alkire involve the choice of dimensions and indicators. Without a doubt, this involves a practical decision, i.e.: which are the capabilities that will be included in the Index? And, further still, which capabilities will be excluded from the Index? The answer given to these questions is the baseline for the creation of the Index, and so the process by which they have been produced as well as the reasons for the choice should be clearly specified. As Robeyns points out: "a practice in which authors explicitly described *how and why they choose dimensions*, could itself be of tremendous value –even if it only consumed one short paragraph of a paper." (as quoted in Alkire 2008: 89)

The capabilities finally included are three: education, health and a decent standard of life. The corresponding measurable variables are life expectancy, literacy and income (this last as a proxy of the other capabilities). It sounds as a reasonable decision but the argument for this decision is not developed in the HDRs, as Robeyns would suggest. References to this decision appear in the first HDR:

> Human development is a process of enlarging people's choices. The most critical of these wide-ranging choices are to live a long and healthy life, to be educated and to have access to resources needed for a *decent* standard of living. Additional choices include political freedom, guaranteed human rights and personal self-respect (UNDP 1990: 1 and 10).
> People are the real wealth of a nation. The basic objective of development is to create an enabling environment for people to enjoy long, healthy and creative lives. This may appear to be a *simple truth*. But it is often forgotten in the immediate concern with the accumulation of commodities and financial wealth (UNDP 1990: 9, our italics in the three quotations).

As it says, the definition of these goals appears as a *simple truth*; but it is not trivial, it has to be argued. The Report also affirms that those choices are *essential* at all levels of development and that income should permit a *decent* standard of living, if they are not available, many other opportunities remain inaccessible. The 1993 Report (UNDP 1993: 105) adds:

> The three dimensions of the HDI relate to one or many capabilities that they are expected to capture. Thus, longevity captures the capability of leading a long and healthy life. Educational attainments capture the capability of acquiring knowledge, communicating and participating in the life of the community. Access to resources needed for a decent standard of living captures the capability of leading a healthy life, guaranteeing physical and social mobility, communicating and participating in the life of the community (including consumption).

That is, life expectancy, literacy, enrollment and per capita income are supposed to capture those choices. These are, however, only utterances. We need to look for the underlying reasoning. In Robeyns' words, further explicitness in the formulation of decisions as well as methodological justification would certainly represent an improvement for the HDI.

Concerning life expectancy, longevity is taken to be an intrinsic value, and its relation with other goals and characteristics, mentioned in the report, would probably need more development. Concerning knowledge, it is theoretically defined by a practical decision. The Human Development Report (UNDP 1990: 12) contends that literacy is the person's first step in learning and knowledge-building, but it recognizes that other variables should be taken into account (as in fact future reports did adding enrollment). Concerning the third key component of human development, "command over the resources needed for a decent life", it is first recognized that taking per capita income as indicator has strong limitations, because it leaves aside non tradable goods and services and the distorting effects stemming from exchange rates anomalies, tariffs and taxes (UNDP 1990: 12). The three components

chosen (health, education and resources for a decent life) are not the only relevant. However, insofar as more variables are added, they will all decline in significance. Further, "the income component of the HDI has been used as an indirect indicator of some capabilities not well reflected, directly or indirectly, in the measures of longevity and education" (Anand and Sen 2000a: 86; see also 99 and 100).

However, the assumption that income is an indirect indicator of other capabilities (than health and education) is a strong assumption because it means that income can "buy" these capabilities –which are surely a lot– and that their values are lower than education and life expectancy. We could think of capabilities that have been excluded that could certainly not be achieved with income. And this exclusion is not duly addressed by the justification presented in the HDRs related to the idea that the three capabilities included are pre-conditions for the rest (Anand and Sen 2000a: 86).

One of the most relevant of these concerns the third issue raised by Alkire, the incorporation of freedom and agency into the measure. This dimension is not included anywhere in the Index and it certainly represents an essential part of development. Sen himself defines development *as* freedom: "development can be seen […] as a process of expanding the real freedoms that people enjoy" (Sen 1999: 3). Consider this example: two countries, A and B, show the same level in all indicators included in the HDI (income, education and longevity), but country A enjoys democracy and country B suffers from a terrible dictatorship. The HDI does not take the latter into account, so both countries would be ranked equally in terms of HDI. To conclude that these two countries enjoy the same level of human development is a strong assumption which needs to be duly justified.

Furthermore, we could think of freedom not only as a capability that has been excluded and should be added as the "fourth" dimension, but as a pre-condition that affects all three of the dimensions already included. Sen refers to this as the *effectiveness reason* of freedom in the development process (1999: 4):

> "[the] achievement of development is thoroughly dependent on the free agency of people (…) free and sustainable agency emerges as a major engine of development (…) not only free agency is a constitutive part of development, it also contributes to the strengthening of free agencies of other kind".

Nevertheless, in spite of having such a central role in Sen's conception of development, freedom is not included in the HDI.

This deficiency has lead Sakiko Fukuda-Parr, who was the Director of the Human Development Report Office between 1995 and 2006, to be somehow skeptical of the HDI. She thinks that the absence of indicators of freedom leads to misperceiving development as equivalent to social development plus economic growth: "the human development concept has been trapped inside its reduced measure" (2003: 307).

Of course, one strong practical reason to leave freedom and agency out of the Index is the difficulty its measurement implies. There is neither general consensus nor good practices established internationally to deal with this issue.[12] Nevertheless, we must bear in mind that not only numbers are relevant. This relates to the last two points mentioned by Robeyns: one should not reduce the final measure to the available information, but should at least describe what the ideal measure should include and then explain why certain aspect is disregarded. Especially when this refers to a dimension not related to the market economy.

Not only the dimensions included (and excluded) need to be duly justified, but also the particular way in which the indicators chosen to represent them are measured. There are several issues related to this. The use of averages in all three indicators, disregarding distributional issues is a first source of concern. This implies serious value judgements that

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[12] Braham (2006) points out to the need of a "freedom function" that assigns a value between 0 and 1 to a freedom. Nevertheless, he shows that in the literature an agreed framework for defining such a function cannot be found.

have not always been clearly documented, clearly not complying with Robeyns first two criteria: explicit formulation of decisions and methodological justification. Not considering distributions may conceal possible internal differences. To disregard internal inequalities is a strong evaluative position. Anand and Sen consider this criticism but they also contend (1994: 2) that "a distribution-sensitive scalar measure would continue to involve some loss of information, since there is no way of capturing the entire wealth of knowledge embedded in a set of numbers in one real number." Of course an index is intended to be a summary, but we may think that there are good reasons to value some of the information we are losing.

When considering the distributional aspect of the Index, the first issue that comes as a surprise is the absence of a distributional correction of the income indicator. This is specially surprising when we consider that for Sen himself the distributional issue in terms of income is essential: "while the expansion of private income certainly is of instrumental importance in enhancing basic capabilities, the effectiveness of that impact depends much on the *distribution* of the newly generated incomes" (Anand and Sen 2000b: 2032). There have been attempts to improve the indicator in this sense. One of them was to adjust the income indicator by the Gini coefficient, which, as was shown, reduced the performance of all countries in the HDI, since none of them has a perfect distribution (Anand and Sen 2000a: 96). More technical solutions have been advanced,[13] but could not be implemented because of lack of adequate data. The fact remains that in its present specification the HDI does not account for differences in the distribution. This implies a strong conceptual definition, and the HDRs fail to give a substantive justification for this choice.

The distributional issue does not only affect the income component. In terms of gender, the issue has given rise to a certain debate, to the point of provoking the generation of a new index, the Gender-related Development Index (GDI). This index replicates the HDI but penalizes countries for unequal results in terms of gender in each of the indicators. The methodology used imposes a penalty for inequality, such that the GDI falls when the achievement levels of both women and men in a country go down or when the disparity between their achievements increases. The greater the gender disparity in basic capabilities, the lower a country's GDI compared with its HDI. The GDI is simply the HDI discounted, or adjusted downwards, for gender inequality.[14] Nevertheless, the GDI has not gained the international relevance the HDI enjoys and, furthermore, it would be useful if other distributional aspects that could be included regarding other population sub-groups and geographic regions. Nevertheless, this is not possible (Anand and Sen 1994: 11)

One more aspect regarding the lack of distributional dimension of the Index is that of sustainable development, that is, the pursue of a particular way of development that serves the present without jeopardizing the future generations. Of course, this approach implies a basic agreement on what is to be sustained. According to Anand and Sen "what needs to be conserved are the opportunities of future generations to lead worthwhile lives" (2000b: 2035). This cannot be left to the market, since the future is not adequately represented and there is no reason that will take care of any obligation we may have to the future (Anand and Sen 2000b: 2034). Sustainable development could be thought of a particular claim for distribution. In the same paper, the authors argue that "sustainability is a matter of *distributional equity* in a very broad sense, that is, of sharing the capacity for well-being between present people and future generations in an acceptable way" (2000b: 2038). Further on they point to the importance of including this aspect "the discipline of universalism requires us to extend the same concern for all human beings – irrespective of race, class, gender, nationality or

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[13] Access to micro data would allow the use of the average of the log of individual incomes, rather than the log of the average income of the country. In this way, the income indicator would be sensitive to changes in the distribution, since the average of the logarithms of income tends to increase when the given total is more equally distributed. The problem is very few countries have information at the individual level. This is not a minor point, since it could be argued that the HDI specification shortcomings reflects compromises with the existent data, i.e.: that a specification more faithful to the human development approach could be in place but the kind of data needed is missing. If this were clearly documented in the HDRs, it would comply with Robeyns' third criteria, i.e., to state what the ideal would be and then stick to the feasible.

[14] For further reference, http://hdr.undp.org/en/statistics/indices/.

generation […] It is particularly important to place the concern about equity in the contemporary world and equity in the contemporary world and equity in the future in a generally integrated framework." (2000b: 2040). Despite the importance given to this particular form of the distributional aspect in development, no attempt is made to include it in the Index. Of course, there is no obvious way to do so. However, as Robeyns suggests in her last point, all relevant aspects should be included in the Index, specifically when they refer to issues not contemplated by the market economy, such as sustainable development.

Additionally, the use of logarithm for the scale of incomes has the effect of decreasing the weight of the highest incomes. This entails the decision of lowering the impact of the highest incomes on development (Anand and Sen 2000a: 87). Although at a first glance the use of logarithms might seem to be only a technical decision, it has practical consequences. In this particular aspect of the Index, we must say, solid arguments have been put forward to justify the decision (Sen and Anand 2000a: 88), satisfying Robeyns' demands for explicit formulation of choices and methodological justifications.

The application of logarithm to life expectancy would have been more debatable. Life has an intrinsic value and the last years of a life cannot be considered as less valuable than others. Anand and Sen (1994: 5), however, also consider that life expectancy can also be thought to be helpful for other objectives and reducing inequalities may be then relevant. In this case, however, the quality of data does not allow for this possible improvement of the Index.

Practical reason indicates that a decision has to be made about the variables to take into account when building the Index, as well as the specific way in which they will be measured. It is difficult to know whether this decision is the best, but as soon as the basis of the specification is "collaborative, visible, defensible, and revisable" (Alkire 2002: 77), it is justifiable. And for this to be possible, the specification needs to comply with Robeyns' four criteria. Then we need to establish a process of decision. If not, we are having an under-illustrated practical decision: a practical decision without practical science.

The fourth issue to be assessed within a multidimensional Index, as suggested by Alkire, relates to the weight assigned to each of the indicators chosen. The HDI makes a simple average of the three indicators chosen, thus assigning equal weight to each of them. This sounds reasonable and, furthermore, it seems that applying different kinds of averages to the formula (Stanton 2009: 19) does not yield substantially different results, which has given empirical justification for the current HDI specification. Nevertheless, there is still room to demand a justification for this choice. The only reference is the utterance that all three of the HDI components are equally important and that thus deserve equal weight (UNDP 1991: 88). However, for example, people from other cultures might consider that education or income, and even longevity, are not so relevant; and that they value other values –e.g. family links, or religious faith, which cannot be bought– over them. They might consider the Index as expressing the ideals of Enlightenment. That is, we need to consider whether the simplification assumed in erasing cultural specificities could not transform the HDI in an illegitimate tool. In any way, either to take into account these specificities or not are practical decisions which need to be argued.[15]

The decision of assigning two thirds of the specific Index to adult literacy and one third to the combined gross enrollment is also a practical decision. Given that enrollment implies literacy, the assignment of two thirds to adult literacy entails assigning more relevance to the present than to the future. Concerning enrollment, the decision of taking into account with the same weight primary, secondary and tertiary education, supposes also a practical judgment not explained in the Report. Bagolin and Comim (2008: 25) put this point as an example of issues not effectively addressed: higher education has the same weight as fundamental education. It is a practical decision and it would have been useful that the arguments behind it would have been made explicit, satisfying Robeyns' first criteria. Besides, the 2009 Report (UNDP 2009: 205-206) recognizes that combined gross enrollment ratios can hide important

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[15] Not only the fact that the same weight has been assigned to each indicator has not been sufficiently discussed, but also the reason why this weights should be the same across countries and across time.

differences among countries given differences of quality, of grade repetition and dropout rates. This simplification then has also practical consequences. A methodological justification of this decision, like the one Robeyns suggests as a second criteria, would be, thus, relevant to this particular aspect of the specification.

In fifth place, Alkire refers to the importance of the interaction among indicators and dimensions. This is a crucial aspect of any multidimensional index, specifically when it is clear that all its components are intertwined. Nothing is specified in the HDI formula to address this concern. Thorbecke (2009: 8) singles out this problem:

> [it is difficult to estimate] the multiple and often complex interactions among sets of attributes. The latter can be substitutes or complements. On the one hand, if dimensions are substitutes, it means that a person can trade-off one attribute for another (say more food for less clothing) and remain on the same iso-utility curve. On the other hand, if attributes are complements, an increase in the amount of one raises the marginal utility of the other (more education increases the present discounted value of the future stream of income). It is also possible that some combinations of poverty dimensions are neither substitutes nor complements.[16]

In the case we consider some dimensions to be substitutes, the HDI should improve less when a country experiencing an increase in certain dimension enjoys a high level of the other dimension. An example can clarify this: suppose we consider income and education to be substitutes to some degree. This would imply that a better performance in the HDI caused by a unit increase in income should be less important for countries who possess high levels of education than for those suffering very low levels. On the contrary, the HDI should improve more for countries endowed with more education if these dimensions are considered complements.

The issue can become even more complex if we go from a static scenario to a dynamic one. Certain interactions among attributes can affect future development differently (for example: lower levels of income may lead to poor nutrition and this in turn can affect future educational results). In fact, different dimensions can be substitutes in the short run while complementary and re-enforcing in a dynamic setting. This has a direct implication for the HDI: different combination of attributes leading to the same ranking in the Index today may have different impacts on future levels. This means that it may not be the same in terms of future development performance to reach a certain level of HDI with a certain combination of indicators instead of others. Once again, we will introduce an example for clarification: two countries have reached the same HDI ranking, but one has similar levels in all indicators, while the other one has a remarkable performance in terms of income but deplorable outcomes in terms of education. Looking at the HDI we may conclude that both enjoy the same level of development. Nevertheless, the latter country will probably worsen its performance in the future, when the young un-educated generations come to power.

These issues can not be assessed through the HDI's current specification nor are discussed in the HDRs. The reasons for this choice certainly demand an explanation, or, in Robeyns' words, an explicit formulation.

The last two items in Alkire's list refer to the determination of poverty lines and poverty indexes. Although both issues are in appearance purely technical, they involve several conceptual definitions and value judgments. Indeed, differences in these issues yield different results in terms of poverty and its characterization (i.e.: how many poor there are, who they are and where they live).[17] No such lines or indexes are defined along the HDRs. The HDI only determines extreme values of the variables, but it does not define a line,

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[16] Although Thorbecke refers here to individuals, we could easily replace his arguments with countries as the main subject.
[17] See Gasparini (2004), Hagenaars and De Vos (1987), Ruggeri et al. (2003), Santos and Ura (2008), Székely et al. (2000).

analogous to, e.g., the poverty or indigence lines defined by countries. This might be indeed difficult but interesting and would entail a detailed exposition about the way of defining it. The same applies to the elaboration of poverty indexes.

In sum, we need to reason, and explicitly justify the practical decisions made. If values, which inevitably tinge social thinking, are not rationally found and established, we could be accused of falling into an ideological bias. The HDR's first issue explicitly declares that its orientation "is practical and pragmatic (…). Its purpose is neither to preach nor to recommend any particular model of development" (UNDP 1990: iii). However, the HDR continuously uses "should" and "must" constructions: that is, values are present and need to be explicitly justified. This justification calls for a definition of concepts and for a decision about values, tasks of practical reason.

4. Main Conclusions

The HDI entails some theoretical definitions and practical decisions that are not sufficiently explicit or argued in the Reports. A greater specification of these definitions and of the arguments of the practical decisions would constitute an improvement of the quality of the Index. We consider that the HDI is a good model for the intent to measure human development, but that it should be improved by adding a clear procedure for deciding the practical aspects involved in it.

As the 1993 HDR sustains (UNDP: 104), "the concept of human development is broader than any measure of human development. Thus although the HDI is a constantly evolving measure, it will never perfectly capture human development in its full sense." On this point, Bagolin and Comim (2008: 25) affirm:

> The evolution of the HDI showed a remarkable resilience of this index, keeping its original ideas, dimensions and aggregation procedures, at the same time that it showed great flexibility in incorporating sensible criticism and methodological advancements (as illustrated by the HDI related indexes[18]).

In improving the HDI one important issue needs to be kept in mind: far from being only a measurement tool, the HDI is above all a normative tool to induce a result. Despite its imperfections, the Index has been defended in terms of its pragmatic usefulness. The HDI works as a motivator of social and economic policy decisions favoring human development. This was the mentioned argument of Ul Haq and of Paul Streeten. A simple number has more impact than a long list of indicators combined with qualitative discussions.

The rhetorical strength of this simple way of representing development and of thus promoting policy adjustments directed towards it cannot be lost. Consequently, the improvement of the HDI should be performed without affecting its attractiveness: the final number should be more and more refined, but it should continue being a number. Still, as Bagolin and Comim (2008: 25) remark "much remains unaccounted and that even after all the technical modifications implemented by UNDP, the HDI has not proved able to reply to the majority of the criticisms that it has received." However, we think that we should go on the path of continuous adjustments and refinements.

With this important caution in mind, we claim that to obtain a more explicit account of the definition of concepts and practical decisions would be a source of improvement for the HDI. The design of the HDI, then, needs a previous work on the definitions and values involved in it.

Rational arguments should be developed and proposed, and they should be based on strong and widely accepted philosophical bases. We are aware that there is a trade-off between the idiosyncratic and individual nature of capabilities and the establishment of a common Index based on common values. That is, there is a trade-off between accuracy and universality-operativeness (see De Langhe 2009). However, a procedure for reaching an agreement among reasonable people about the values involved and the consequent

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[18] One of these is the GDI referred to in the previous section.

specification of human development must exist.[19] As Comim affirms, we need to establish "procedures for solving the trade-offs, conflicts and inconsistencies between different options" (2008: 164).

We are conscious of the difficulties that could be involved in this previous work. However, at least we must try to look for a *reasoned* consensus about values. It is not only or always a matter of voting. There are relevant definitions and decisions entailing previous research and development of theory. Given that values are involved we have to bring them out for discussion; if not, there will always be reasons for criticism and disconformities. After all, if values are not reasoned we will have unreasoned values, because, as showed, they are always present. Sen (2009: 241) recognizes the difficulties involved in this work but he has hope in the possibility of doing it: "The choice and the weighting may sometimes be difficult, but there is no general impossibility here of making reasoned choices over combinations of diverse objects."

What is the place in the formula leading to the final number to locate this kind of stuff? Models are not only formula but also the surrounding definitions and explanations. We think that the HDI would gain if the corresponding Reports include a Section presenting the definitions and values involved together with the arguments and discussions about them. This Section might make reference to Annexes, background papers and complementary Indexes, Sections already included in the Reports. Once clearly defined concepts and practical decisions made explicit, we need to define the indirect *measurands* and the technical aspects of the Index. Finally we postulate the corresponding formula. The relation with values of these technical aspects will have been made explicit in the text of the Report.

Furthermore, a more local definition of the HDI and its components may be allowed. Although the reasoned process of defining capabilities and weights might be thorough and lead to rather universal conclusions, the specific culture or situation of country might suggest another combination of objectives. Besides, a country might try to achieve a greater level of disaggregation and to define additional objectives or details.

In addition, the procedure of definition of the theoretical and practical underpinnings of the Index should be open to all those affected by it. The process should be clearly established: who, when and how will intervene (scholars, politicians of different colors and countries, general public?). These procedures should be stable, or at least the criteria for their change must be stable. This work will lead to the definition of the components of the HDI, their weights, and to make explicit the relation with values of the technical aspects of the Index. A widely explicit report of this process should be included in the HDRs. As Sen (1999: 80) contends, "the implicit values have to be made more explicit."

Although we are aware that reaching a consensus regarding the procedures suggested is far from being an easy task, we believe it is worthwhile, specially because we consider the HDI to be a valuable political tool in terms of its motivation of economic and social decisions. In Alkire's words (2008: 108): "while it may be highly unlikely that economists *will* reach consensus on these matters, (…) it may be possible to identify a little more explicitly why they hold the views they do. (…) this itself could be a step forward".

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[19] Sen (1992: 117) affirms: "It is not unreasonable to think that if we try to take note of all the diversities, we might end up in a total mess of empirical confusion. The demands of practice, as well as reasonable normative commitments, indicate discretion and suggest that we disregard some diversities while concentrating in the more important ones." The task will be to reason and decide what are important and what are not.

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