MEASURING HUMAN PROGRESS: THE CONTRIBUTION OF THE HUMAN DEVELOPMENT INDEX AND RELATED INDICES

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Measuring human progress: the contribution of the Human Development Index and related indices

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Since its launch in 1990, the Human Development Index (HDI) has been an important marker of attempts to broaden measures of progress and serves multiple functions for academics and policymakers, as well as activists. This paper reviews the contributions of the human development approach and, in particular, of the HDI in the context of the discussions and debates around the findings of the Commission on the Measurement of Economic Performance and Social Progress. We highlight the kinds of analyses and insights which have made the HDI a useful policy tool since 1990.

Human Development Index - Human Development Report

Mesurer le progrès humain : la contribution de l'Indice de Développement Humain et des indices associés

Depuis son lancement en 1990, l'Indice de Développement Humain (IDH) a été un repère important dans les tentatives d'élargissement des mesures de progrès, et il sert de multiples fonctions pour les scientifiques, les décideurs politiques, et les militants. Cet article passe en revue les contributions de l'approche du développement humain et, en particulier, de l'IDH dans le contexte des débats autour de la Commission sur la Mesure de la Performance Economique et du Progrès Social. Nous mettons en exergue les analyses et recherches qui ont fait de l'IDH un outil de grande utilité pour la politique depuis 1990.

Indice de Développement Humain - Rapport du Développement Humain

1. Introduction

Since its launch in 1990, the Human Development Index (HDI) has been an important marker of attempts to broaden measures of progress. Published annually in the UNDP's Human Development Reports (HDR), the HDI serves multiple functions for academics and policymakers, as well as activists. From the outset, it has been recognized to represent a work-in-progress, as

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well as a rallying cry for all those seeking inclusive and humane societies, by assessing past trends and patterns and evaluating our current condition.

This brief note reviews the contributions of the human development approach and, in particular, of the HDI in the context of the discussions and debates around the findings of the Commission on the Measurement of Economic Performance and Social Progress (CESMP), set up by President Sarkozy of France and led by Joseph Stiglitz, Jean-Paul Fitoussi and Amartya Sen[1]. We highlight the kinds of analyses and insights which have made the HDI a useful policy tool since 1990. There are important complementarities and synergies between the work of the recent Commission and the HDRs over the past twenty years. Both stress the need to focus on the ultimate objective of human prosperity and well being. They converge on the point that GDP is only one of the "intermediate" indicators used in attempts to measure the achievement of that final objective. Finally, but not least, we review ways in which the 2010 HDR, entitled "The Real Wealth of Nations: Pathways to Human Development", published twenty years after the first HDR, has addressed some key challenges on the measurement agenda, and continued the HDR tradition of "pushing the frontiers"[2].

The rest of this note is structured as follows. The next section very briefly introduces the human development approach, before reviewing both the contributions and limitations of the HDI, most of which are already well known. Section 3 highlights key links to the Sarkozy Commission while Section 4 goes on to sketch out some related new features of the 2010 anniversary report. The final section concludes.

2. The HDI – contributions and some insights

The idea that progress should be conceived as a process of enlarging people's choices and enhancing their capabilities is the central premise of the human development report launched by the UNDP in 1990. The work of the report was designed and led by Mahbub-ul Haq and was inspired by and drew heavily from the capabilities approach, as developed by Amartya Sen in his books and writings[3].

The 1990 *Human Development Report* clearly articulated the concept of human development. The first chapter, *Defining and Measuring Human Development*, opened with the forthright statement that:

People are the real wealth of a nation. The basic objective of development is to create an enabling environment for people to live long, healthy and creative lives. This may appear to be a simple truth. But it is often forgotten

1. Available at http://www.stiglitz-sen-fitoussi.fr/en/index.htm
2. UNDP-HDRO 2010.
3. See, for example, Sen [1985], Sen [1999].

in the immediate concern with the accumulation of commodities and financial wealth.

This goal was not new. Thinkers from Aristotle onward have voiced similar positions. The report argued for renewed attention to people in the light of countries' uneven progress in human development in the 1980s, a decade of economic crisis for many developing countries, particularly in Latin America and Africa.

A hallmark of the 1990 HDR was the introduction of a new measure of levels and progress in wellbeing - the Human Development Index (HDI). The HDI seeks to capture three basic dimensions of well-being – viz. a long and healthy life, access to knowledge and a decent standard of living[4] – in a very simple and transparent formulation.

The HDI was thus a critical enlargement on conventional measures limited solely to income. Its widespread acceptance and use is reflected, for example, in extensive citations in the popular press and media – one survey of available archives found that there have been over 9,000 English language news articles published on the HDR since 1990[5]. While the HDI was an early pioneer in multidimensional measures, its traction has been sustained. Its reach is extensive and has been facilitated by electronic access. After the 2009 global HDR was launched, for example, the HDR website was visited nearly 3 million times, and almost half a million copies were downloaded. This is shown graphically in Figure 1 below, using Google Scholar. In academic publications, the HDR "beats" the WDR, but the HDI "beats" both. The peak HDR frequency in 2009 corresponds to about 3 million searches.

The HDI's strengths-particularly its transparency, simplicity and popular resonance around the world-have kept it at the forefront of the growing array of alternatives to gross domestic product (GDP) in measuring well-being[6]. Of course one can criticize the HDI for having attracted more of a media than a policy response, though we would argue that rankings matter for governments and that the HDI has helped to raise the profile of important issues – such as where performance in education is lagging – and has been used to guide policy, as we illustrate below. The extent to which the HDI and human development approach has managed to engage economists is addressed further below.

We also recognize that the HDI has received its share of criticism, and review these further below. Suffice to note here that some authors take issue with its construction and composition, while others suggest it should be expanded to include more dimensions, ranging from gender equity to biodiversity. These critiques are important, but it is important to underline that the objective of the HDI is not to build an unassailable indicator of well-

4. More details on method are in Section 4 below. See also http://hdr.undp.org/en/statistics/data

5. This estimate is based on English language archive collected by the Google news search engine – by comparison, there were 2,590 news articles about the World Development Reports over the same period.

6. Anand and Sen [2000]; Gertner [2010] in the NY Times May 16, 2010 wrote that "So far only one measures has succeeded in challenging the hegemony of growth-centric thinking. This is known as the HDI, which turns 20 this year."

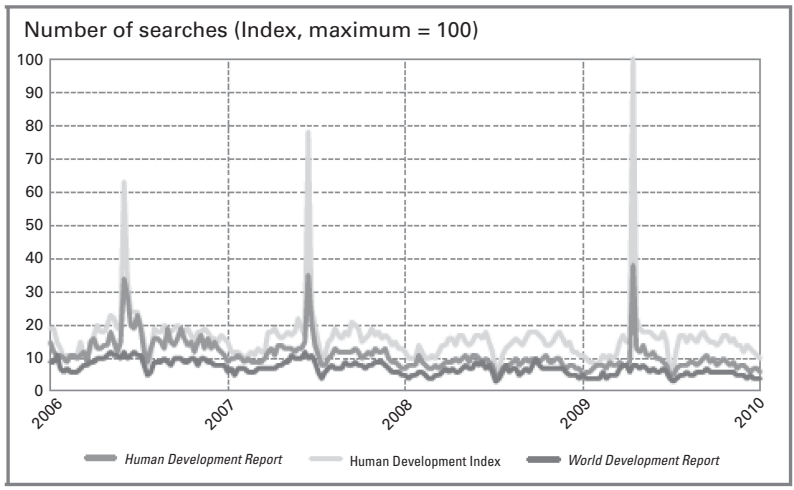

Figure 1. Frequency of Google Searches (2006-2010): HDR, HDI and WDR

being, but rather to redirect attention towards people-centred development and to promote debate over how we advance the progress of societies. On these fronts the HDI has enjoyed significant success.

The global HDI has inspired and fostered innovation in the measurement of well-being at the local, national and regional levels[7]. For example, *The Measure of America* presents human development rankings for U.S. states, congressional districts, and ethnic groups. It describes stark disparities – including that it would take the bottom-ranked state (Mississippi) 30 years to reach the same level of human development as the top-ranked state (Connecticut), given historical rates of progress. The average resident in the richest congressional district, New York City's Upper East Side, earns over triple, lives almost five years longer and is ten times more likely to have a college degree than someone born in the bottom-ranked district, Fresno, California. Many of the U.S.'s national averages, other than income, also compare poorly to those of other advanced countries[8].

A number of governments have adapted and used the HDI in their own planning and allocation processes, as we illustrate here for several countries in Latin America[9]. For example, in Argentina, the Ministries of Social Development, Health and Education have been using an "Extended Human Development Index" – which includes quantitative measures of infant mortality, unemployment and education quality – to inform policy design and resource

7. For a survey of examples of innovation in measurement in national HDRs, see Gaye and Jha [2010].

8. The United States ranks second in the world in per-capita income (behind Luxembourg), but thirty-fourth in survival of infants to age one. The U.S. infant mortality rate is on par with that of Croatia, Cuba, Estonia, and Poland. See Burd-Sharps *et al.* [2008].

9. Pagliani [2010] provides a useful review.

allocations; while in Brazil, a "Human Development Atlas" (a database of human development indicators for the country's 5,507 municipalities and 27 states) has been widely used as a policy tool. The HDI has also been used to target federal projects – for example Brazil's *Alvorada* (Dawn) programme, launched in 2000 sought "…to improve the living conditions of the neediest in the shortest time possible…", covering 24 Brazilian states and nearly 2,200 municipalities with an HDI lower than the national average, and over 36 million poor people. In Chile, the Ministry of Planning includes the HDI in the prioritization index used to allocate funds. In Mexico, an HDI adjusted for inequalities influences the allocation of public expenditure at the state level – in 2005, the Federal Government allocated special resources to the indigenous municipalities with the lowest HDI, which was extended in 2007 to the 100 municipalities with the lowest HDI.

Examples from other regions include Egypt, where HDI rankings of governorates have been used to inform decisions on resource allocation and India, where the government uses the HDI and related human development data disaggregated at the State-level to inform planning, budget allocations and policy monitoring. In January 2010 the Maharashtra State Planning Department announced that each county in the district will receive budget allocations based on its HDI. Our final example comes from Bulgaria, where municipal-level HDI estimates influence funding allocations by the Ministry of Regional Development. The HDI has also been used by development agencies and NGOs to inform programming, including by the Australian aid agency AusAID and Oxfam.

There has been substantial research and advocacy work around the more than 700 regional, national and sub-national Human Development Reports that have been prepared in over 140 countries. The associated participatory processes often generate tremendous debate among policy-makers, academia, civil society and the general public on ways to measure and further human development. Many reports adapt the HDI to address relevant challenges, often disaggregating the index and other data down to the regional and municipal levels. Namibia's 1997 HDR, for example, estimated the HDI by linguistic groups to show the persistence of the colonial legacy in wide variations in human development between Namibians of European decent and the indigenous population.

The HDI has also motivated more scholarly activity[10]. Academic courses and training involving the HDI are being delivered to a new generation of researchers and policy-makers on the HDI and other human development topics in over twenty countries[11].

We turn now to highlight some key streams of research and analysis that can be traced back, at least in part, to the type of thinking motivated by the HDI – most notably differences in performance across dimensions of achievement, and the extent to which these are correlated or not; how our assessment of "success" changes depending on the criteria used to evaluate progress, and the policies associated with success.

10. For an anthology of some key contributions, see Fukuda-Parr and Shiva Kumar [2003].
11. See list of ongoing academic courses and training on HDI and other HD topics at http://hdr.undp.org/en/nhdr/training/materials/

An original, and perhaps the most enduring, contribution of the HDI to our thinking about development lies in showing that levels and trends in human development can and do differ significantly from levels of income and trends in GDP growth. For example, one of the most surprising results of human development research in recent years, confirmed in the HDR 2010, is the lack of a significant correlation between economic growth and improvements in health and education, at least in the medium-term[12].

This is shown for the last forty years in Figure 2. The left-hand panel shows a positive association – though with substantial variation – between the HDI and economic growth, suggesting that growth and improvements in human development are positively associated. However since income is part of the HDI, by construction, with a third of the changes in the HDI coming from economic growth, guaranteeing a positive association. A more useful exercise is to compare income growth with changes in the non-income dimensions of human development. The HDR 2010 does this by using an index similar to the HDI but calculated with only its health and education components to compare against economic growth, as shown in the right panel. The correlation in changes is remarkably weak and statistically insignificant.

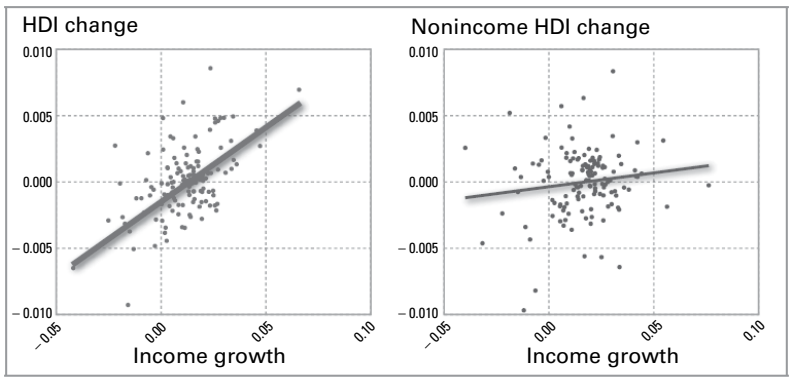

Figure 2. Relationship between economic growth and the HDI and its non-income components, 1970-2010

Source: HDRO calculation using data from the HDRO database

This highlights an often overlooked fact that, even over reasonably long periods of time, GDP growth can correlate very poorly with changes in the non-income dimensions of well-being. This implies that a focus on income can neglect a large part of the story: some countries, such as Egypt, Tunisia and Bangladesh, have seen significant improvements in their HDI with only

12. Improvements in human development are measured using a deviation from fit criterion – see Gidwitz *et al.* [2010] for details.

moderate income growth, while others have experienced significant income growth and seen their HDI stagnate.

This has become a popular line of research. In a 1999 article "Life during Growth", Bill Easterly, then a World Bank economist, found a remarkably weak association between growth and indicators of the quality of life such as health, education, political freedom, conflict and inequality[13]. François Bourguignon, Director of the Paris School of Economics, and several European and African colleagues concluded that "the correlation between GDP per capita growth and non-income [Millennium Development Goals] is practically zero."[14] Another World Bank economist, Charles Kenny, recently confirmed the lack of correlation between improvements in life expectancy and growth, using both a large sample of countries over 25 years and a smaller sample covering a much longer time period. The global HDRs have illustrated these differences in trajectory in a variety of ways.

At the same time, as is widely recognised, the correlation between HDI and income *levels* is much higher[15]. We estimate the Spearman's rank correlation coefficient to be around 0.95 in 2007, at the global level. However it is worth noting that the rank correlations are much lower among country groupings, around 0.31 among developed countries, and 0.29 for low human development countries[16].

The contrasts between income and HDI ranks are also instructive. A comparison of country ranks in HDI and GNI per capita is presented in Table 1. For example, we see significant variation across HDI groups-among the very high HDI countries New Zealand rises the largest number of ranks relative to an income measure. Among the high HDI countries Kuwait loses the most ranks in HDI relative to an income measure (42 places), while Georgia rises the most (26 places). And Sub-Saharan Africa is home to four of the five countries suffering the biggest losses in HDI rank relative to GNI rank– Angola, Botswana, Equatorial Guinea and South Africa. While the region is also home to two countries, Madagascar and Togo, that rise the fourth and fifth most ranks in HDI relative to an income measure.

The very large human development divides between countries, which has characterized the HDI since its launch, has become much more widely recognised today. This may in part be due to the perspectives and concerns promoted by the HDI. Yet the disparities persist. For example, a child born in a high-income OECD country can expect to live to at least 80 years, but if she happens to be born in one of the low human development countries, she cannot expect to survive age 57. The divergence remains most marked with respect to incomes, while education and health indicators have tended to converge[17].

13. Easterly [1999]. See also Cutler, Deaton and Lleras-Muney [2006], and Kenny [2008].
14. Bourguignon *et al.* [2008].
15. As recognized early on – see for example Srinivasan [1994].
16. We prefer the rank correlation coefficient to the Pearson's since the (HDI and GDP) score data do not follow a normal distribution.
17. Molina and Purser [2010] and Kenny [2005]. Dispersion fell significantly for all the health and education variables that go into the HDI, see HDR 2010, chapter 2.

Table 1. Comparing HDI and GNI Rankings, 2010

HDI rank		Human Development Index value 2010	Gross national income (GNI) per capita (PPP US$ 2008) 2010	GNI per capita rank minus HDI rank 2010
Worse HDI than GNI per capita (change in rank)				
117	Equatorial Guinea	0.538	22,218	-78
146	Angola	0.403	4,941	-47
47	Kuwait	0.771	55,719	-42
98	Botswana	0.633	13,204	-38
110	South Africa	0.597	9,812	-37
Better HDI than CNI per capita (change in rank)				
135	Madagascar	0.435	953	22
139	Togo	0.428	844	22
85	Tonga	0.677	4,038	23
74	Georgia	0.698	4,902	26
3	New Zealand	0.907	25,438	30

Source: HDR2010 statistical table 1.

Moreover, as recognized from the outset by the HDR, the HDI captures only a few dimensions of human empowerment and leaves out many others that people may value highly-economic, social and political freedom and protection against violence, security and equity. The 1990 HDR in a box entitled "Defining human development", stated that:

"Human development is a process of enlarging people's choices. The most critical ones are to lead a long and healthy life, to be educated and to enjoy a decent standard of living. Additional choices include political freedom, guaranteed human rights and self-respect – what Adam Smith called the ability to mix with others without being "ashamed to appear in public"

And the report recognized that "while the conceptual and methodological problems of quantifying and measuring human development are even more complex for political freedom, personal security, interpersonal relations and the physical environment, analyses of human development must not ignore them" (p13).

This is immediately evident from the examples above, where some of the countries which came out as relatively good performers on the HDI relative

to income would rank less well on other dimensions of well-being. That is, the HDI covers a basic core of material aspects of human development, but does not cover many other important aspects of the "good life".

There is a very rich agenda of research motivated by human development insights, which is yet to be fully exploited. It remains the case that a vast theoretical and empirical literature in development economics almost uniformly equates economic growth with economic development. Its theoretical models typically assume that people care only about consumption, and the analysis of optimal policies follows the same route[18]. The bias is extended to growth econometrics, where estimates of the growth effects of policies are typically the motivation for policy recommendations. The assumption—often explicit—is that maximizing growth should be the policymakers' only objective and the multidimensionality of wellbeing is ignored. Human development goals need to be better integrated into a framework that supports growth with equity and into well designed sectoral policies.

3. Links and Relevance to the work of the Stiglitz-Fitoussi-Sen Commission

The focus of the CMEPSP was on the indicators used to measure well-being. The Commission reviewed weaknesses in available measures, and the dissonance between people's perceptions and official measures. Its work cast important light on three broad areas, viz. identifying the limits of GDP, capturing the broader quality of life and the sustainability of well-being over time.

What then are the key implications of the Commission for the HDI? Some aspects have more immediate relevance, as we show in the next section, whereas others have longer term significance. More generally of course, the emphasis of the Commission on the multidimensionality of wellbeing is very much in line with the thinking that the HDR and HDI have promoted since 1990.

The Commission made recommendations to shift from production to income, and to give prominence to distributional aspects in multidimensional measures, and the HDR 2010 has introduced reforms in both of these directions as described in the next section.

Progress on key aspects of the longer term agenda laid out by the Commission is also important for future enhancements to the HDI. For example, improved measures of economic performance – in particular to

18. For basic expositions, see Jones [2002] and Barro and Sala-i-Martin [2003]. Most theoretical and empirical growth analysis is based on variants of the Ramsey-Cass-Koopmans model in which a representative agent maximizes a discounted sum of the utility of consumption.

better capture public sector activities and the quality of services – would equally serve to enhance the usefulness of the "command of resources" as reflected in the HDI. The same is true of better efforts to capture non-market activities, which were called for some time back in the 1995 HDR on gender.

The Commission stresses the importance of sustainability when measuring performance, while recognizing that it is possible to increase short term well-being at the expense of longer term welfare. It is important to consider that trade-off as a fundamental part of human and social choice, although measures of long term and short term well-being will be different and there are major conceptual and measurement issues. The Commission endorsed the World Bank's Adjusted Net Savings concept which attempts to value the changes in total wealth, where this is defined to include natural resources. However analysis presented in the HDR 2010 shows that conclusions about sustainability are very much driven by the measures chosen, and points out that the Adjusted Net Savings results tend to be very much driven by the size of financial savings, such that countries like China are depicted as much more sustainable than, for example, countries like Portugal, Greece or Ireland[19]. This suggests the scope for further thought and work to develop sound measures of sustainability.

In practical terms, the Commission's report is strongly focused on improving the data that are produced by national statistical agencies, and recommended that "statistical offices should provide the information needed to aggregate across quality of life dimensions, allowing the construction of different indices…such as the Human Development Index". Since the HDRO is a secondary user of data produced by national agencies (and collected by international organizations), improvements in the method and quality of the underlying data would in turn improve the quality of the HDI. In particular, if the commission's recommendations are implemented, some dimensions of human development on which the currently available international data is poor (*e.g.*, environmental sustainability) would be better reflected in official statistics.

It should be noted that despite the Commission's statement that its work "is not focused on France, nor on developed countries", it largely focused on the problems and issues of developed countries. For example, the issue of informal sector production and non-market production coming from the agricultural sector received little discussion in the presentation of the report, despite the extensive literature in development studies on these issues and how they affect national accounts. The overwhelming majority of examples in the report were taken from developed countries – reflecting no doubt issues of data availability.

The twentieth anniversary of the HDR and HDI is an opportunity to review key measurement challenges in depth, including those arising more in the developing countries – and to introduce appropriate innovations. The HDRO sought to build on the Commission's findings and recommendations, and the HDR has succeeded in turning some of the Commission's ideas into

19. These countries perform much better than China on industry's CO_2 emissions, for example, but have lower net savings.

practice, whereby reinforcing the HDR's reputation for creativity and pushing the frontier on the measurement of well-being.

4. The 2010 Report: Rethinking Human Development

The year 2010 marks the twentieth anniversary of the Human Development Report, and thus offers an opportunity for re-assessing our understanding of human development. In very important respects, human development is an unfinished agenda and deserves deeper explorations, in several directions. We need to continue to explore the ways in which people can consider, and agree on defining and prioritising alternative dimensions of human development. The discussion here selectively focuses on dimensions missing from the HDI and subjective measures of well-being and inequality, which are just several among a broader agenda presently being explored.

Among the key policy insights that human development adds to an approach focussed solely on incomes are that we need to be concerned with distributional consequences of growth and the market, with the availability of social and public goods and with the non-material aspects of enabling human flourishing. In this sense, human development provides a powerful way of assessing the success or failure of the market. It is also true, however, that the introduction of health and education related metrics in addition to GDP, represented by the HDI, only very imperfectly reflects this need for enlargement of the measurement of human progress. Likewise the HDI is an aggregate which, at the national level, ignores distributional concerns. Like GDP per capita, the national HDI is an *average*, and hence suffers from the inadequacy of not saying anything about the *distribution* of income, nor of education and health. We know, for example, the richest quintile in India ranks among the high human development countries whereas the poorest quintile fall within the low human development countries.

The anniversary alongside the findings of the Stiglitz-Sen-Fitoussi Commission provide a good opportunity to push forward efforts to improve measures of human progress at the macro-level in rich and poor countries, complemented by more micro perspectives to evaluate progress with a human development perspective. In doing so it is important to preserve the notion of cross country comparability and country rankings, since this has been a key contribution of the HDI to development debates. Addressing these issues requires new tools. In particular, tools that incorporate recent advances in theory and measurement and support the centrality of inequality and poverty in the human development framework.

As such, HDR 2010 introduces some careful innovations to the HDI-retaining the same three dimensions but modifying the indicators used to measure progress in education and income, reflecting recent improvements in data quality and availability. HDR 2010 also introduces new improved complementary indices in the spirit of the "dashboard" idea that was use-

fully employed by the Commission. The Inequality adjusted HDI (IHDI), the Gender Inequality Index (GII) and the Multidimensional Poverty Index (MPI) reflect state of the art measures that incorporate advances in data availability and measurement theory and are intended to stimulate public debate beyond the traditional focus on aggregates.

Starting with the HDI, a recent review of the major critiques of the HDI highlighted issues related to the choice of indicators (mixture of flow and stock variables, say for education, which includes enrolment and literacy)[20]. Some have also questioned the functional form of the HDI, raising such issues as aggregation versus multiplication, or/and arithmetic mean versus other type of mean, most notably geometric and harmonic mean, as well as the weights used[21]. Issues have also been raised related to statistical quality[22].

Table 2 below summarises the key criticisms and the ways in which these have been recognized or addressed in the HDR 2010. A general underlying point is that the choice of indicators is constrained by the availability of comparable data for a sufficiently large number of countries. It is true, for example, that the important dimension of quality of education is neglected, but no such indicator is widely available at the international level.

Table 2. Selected criticisms of the Human Development Index and responses

Criticism	Responses
Too few dimensions	The HDI has consistently measured the progress in three basic dimensions, which has an important advantage in terms of simplicity. It has never purported to be a comprehensive measure, instead complementary measures are presented.
Correlation among indicators	A positive correlation among the indicators is a sign that they measure the same phenomenon or construct. At the same time, the correlation does vary across country groupings – *e.g.* the correlation between income (GNI) and life expectancy across all the HDI countries is 0.808, but only 0.326 for the very high HD countries, and 0.205 for low HD countries.
Extrapolation for missing values	Kept to a minimum. In 2010 the only model-based imputed values were for expected years of schooling for three countries.
Mixing stock and flow indicators	Difficult to avoid with available international data. The only clearly flow indicator is GNI.

20. Ryten [2000], Noorbakhsh [1998] and Ogwang [1994].
21. Booysen [2002] and Anand and Sen [2000].
22. Fu [2004] and Wolff *et al.* [2009].

Criticism	Responses
Comparability and treatment of income	Use of GNI has several advantages over GDP – it better captures income accrued to residents of a country, including from remittances and aid and excluding income repatriated abroad. However it has other weaknesses inherent to all monetary expressions of economic power of a country. Use of logarithm of GNI allows for diminishing returns of higher incomes.
No allowance for diminishing returns	The principle has been applied only to the income indicator, given the inherent value of knowledge and life.
Normalisation procedure means that HDI rankings sensitive to the bounds	Responding to this criticism, as of 2010 the HDI uses the "natural" minima and observed maxima over the 30 year period to scale the indicators to (0,1) interval. While the HDI values are affected by the choice of the normalizing parameters, the relative position of a country ranking remains unchanged.
HDI components' means have different variances	While the variances of components' indices are not identical, they are very similar. For example, the standard deviations for life expectancy index, education index and income index are respectively (0.16, 0.20 and 0.20).
Weights are not effectively equal but are affected by the lower and upper bound.	The new HDI has more equal ranges of variation of dimension indices than the previous one, implying that the implicit weighting is more equal than before.
Not sensitive to improvements in underachieving domains	As of 2010, this is no longer true – use of the geometric mean values improvements in underachieving dimensions more.

Source: Adapted from Kovacevic (2010).

Among the reforms introduced to the HDI are the modification of the indicators used to measure progress in education and income, and changing the way the indicators are aggregated to use actual observed minima and maxima and geometric means of the three dimensions. To measure standard of living, gross national income (GNI) per capita replaces gross national product (GDP) per capita. The shift from GDP to GNI recognises that in a globalized world differences are often large between the income of a country's residents and its domestic production. Some of the income residents earn is sent abroad, some residents receive international remittances and some countries receive sizeable aid flows. For example, Timor Leste's GNI ($5,303 per capita in 2008) is many times its domestic output ($453 per capita in 2008) because of international aid[23]. These reforms were very

23. See HDRO 2010, statistical tables 1, 15 and 16.

carefully considered, and introduced so as to ensure continuity in the HDI statistical series; as wide as possible country coverage; and avoiding increased complexity and opaqueness[24].

Inequality in human development deserves serious consideration. The 1990 report recognized its importance, but refrained from measurement on grounds of data availability (see pages 11-12). Over the past two decades, the information available on inequality, not only on incomes but multiple dimensions drawing on micro level data, has grown enormously and provides much larger possibilities. The Inequality adjusted HDI introduced in the 2010 HDR reflects this progress. A measure of the level of human development of people in a society that accounts for inequality in health, education and income, the IHDI is constructed to be directly comparable to the HDI and across countries, reflecting inequality in each dimension of the HDI for 138 countries. Under perfect equality the HDI and the IHDI are equal. When there is inequality in the distribution of health, education and income, the HDI of an average person in a society is less than the aggregate HDI[25]. Among the key findings presented are that the aggregate loss in human development due to inequality is 22 percent, ranging from a low of 6 percent (Czech Republic) to a high of 45 (Mozambique), with the largest losses in the low HDI countries.

One striking manifestation of inequality relates to gender. The HDR 1995 introduced the first global measures of gender inequality, in the Gender-related Development Index (GDI) and the Gender Empowerment Measure (GEM). However these both had a range of shortcomings including lack of data and misinterpretation[26]. The HDR 2010's Gender Inequality Index is a new measure of the inequalities faced by women and girls built on the same framework as the HDI and the IHDI-to better expose differences in the distribution of achievements between women and men. The GII includes educational attainment, economic and political participation and female-specific health issues, and accounts for overlapping inequalities at the national level, and represents an important advancement on existing global measures of gender equity. Again the analysis shows large losses due to gender disparities, ranging as high as 70 percent for the Arab states.

Thirdly but not least, the 2010 HDR introduces a Multidimensional Poverty Index, which captures acute overlapping deprivations in 104 developing countries[27]. The measure uses micro data to identify deprivations in health, education and living standards and shows the number of people who are poor (suffering a given number of deprivations) and the number of deprivations with which poor households typically contend. It presents an interes-

24. The comparison of HDI values from different HDRs is not meaningful, given data and occasional methodological revisions. However, each HDR presents the HDI in a consistent time, which should be used for any comparison across time.

25. Alkire and Foster [2010].

26. Critics noted three key drawbacks of the GDI and GEM: that they combine absolute and relative achievements, thus a country with low income scores poorly even with perfect gender parity; extensive imputations were needed to fill missing data; and nearly all indicators in the GEM arguably reflect a strong urban elite bias and use some indicators more relevant to developed countries. Hawken and Munck [2009] and Klasen and Schüler [2010] provide useful reviews.

27. Alkire and Santos [2010].

ting profile of the poor which is complementary to monetary based estimates, and can be deconstructed by region, ethnicity and other groupings, making it particularly useful for policy makers.

More radical reforms would try to transform the HDI itself – rather than present complementary indices – and/or cover other social, political and community dimensions. Ranis, Stewart and Samman [2006] review the categories covering most aspects of a good life discussed by philosophers, for which comparable indicators may be available. These are listed as follows: mental well-being (*i.e.* psychological state), empowerment (particularly of the deprived), political freedom, social relations, community well-being, inequalities, work conditions, leisure conditions, political security (i.e. freedom from political violence or instability, economic security) freedom from economic fluctuations, and environmental sustainability. They found, by taking a set of indicators to represent twelve different dimensions of human development across countries, of these just eight were highly correlated with HDI. While the precise results obviously depend on chosen categories, and indicators and methodology, it is nonetheless clear that a full assessment of progress in human development goes well beyond HDI.

Yet it may well not be empirically possible, or even desirable, to fully define well-being and what constitutes a "good life", a question that has occupied many leading philosophers since at least Aristotle. Alkire (2002) lists 39 attempts to define the good life[28]. Indeed, any attempt to definitively "list" capabilities has been deliberately avoided in the work of Sen, as the process to arrive at indicators of well-being is to be arrived at via "democratic consensus".

One dimension that attracted significant attention from the CMESP related to subjective measures of well-being. The Commission emphasized the need to go beyond any indicator of material well-being in assessing the quality of life and advocated an inclusive definition of quality of life that relied on both objective and subjective indicators. Subjective indicators have emerged from the bourgeoning literature on "happiness" and self-reported life satisfaction. While some prominent scholars have argued that "happiness" should substitute for income as measure of progress[29], the Commission saw these not as alternatives but rather as complements, in that they measure different dimensions and thus concepts of well-being: someone can be subjectively happy despite living under conditions of objective material deprivation, while someone who is enormously wealthy can still end up living a miserable life[30]. Happiness is "a very important human functioning, among others", Amartya Sen argues in *The Idea of Justice*.

Debate is ongoing about how to interpret reported levels of subjective well-being, in part because of observed cross-national differences in underlying levels of happiness-such that Latin Americans tend to be happier than

28. Among the scholars who have sought to define the "good life" are Rawls: "deliberative rationality" in defining primary goods: "with careful consideration of relevant facts... and consequences"; Finnis: practical reasoning "critical reflection about the planning of one's life [Nussbaum, 1999], and consultative: Voices of the poor (Narayan *et al.* [2002]).

29. Easterly and Levine [2003], Layard [2005] and Graham [2005].

30. See Sen [2009], Chapter 13.

Eastern Europeans, for example. The extent to which perceptions are subject to habituation or "adaptive preferences", due to people's past experience and their surroundings, is much debated. Sen has argued extensively that poor people adapt their expectations and desires in line with their situations. For instance, widows in the Indian state of Bihar describe their health more positively than those in Kerala, despite higher morbidity and mortality. Similarly, Angus Deaton reports that people in countries with high HIV prevalence rates do not generally report lower health satisfaction[31]. Other scholars have cast doubt on how people adapt. Bina Agarwal criticizes the view that women internalize their subjugation and suggests that seeming acceptance may reflect external constraints to more overt action[32]. Further investigation is needed to establish more clearly how subjective states relate to objective circumstances and what role they should be accorded in measuring and comparing wellbeing among people and countries. Until this becomes clear, subjective measures should not be used alone as benchmarks of well-being.

Empirical analysis suggests that various indicators of human development are fairly well correlated with measures of happiness across countries – Figure 3 shows the correlation between the HDI and its components with the Gallup Poll's Best and Worst Possible Life measure – which asks people to evaluate their present and future lives on a scale with steps numbered from 0 to 10, where 0 is the worst possible life and 10 is the best possible life[33]. More fundamentally, the basic philosophy is somewhat different: human development, like capabilities, is more about expansion of human freedoms than about mental state as such, although the concepts of human empowerment and human well-being are of course closely linked. The HDR 2010 also endorsed the view that happiness is best thought of as complementing other measures of well-being, not as a sole or alternative measure.

Finally, and not least, in thinking about complementary measures, we should recognise that the HDI itself, which was the first non-monetary index that was used to rank countries, has spawned a veritable profusion of efforts to quantify different aspects of well-being. A recent survey identified 178 composite indices, each designed to rank and assess country performance, on a diverse set of topics. Nearly all of these post-date the HDI, and many have come about just in the past several years. These range from child well-being (UNICEF's Under-Five Mortality Rankings), to governance and accountability (the World Bank Worldwide Governance Indicators), freedom (Freedom House's Political Rights and Civil Liberties Rights Index), environment sustainability index (Columbia and Yale Universities' Environmental Performance Index), Education for all (EFFA) Development Index by UNESCO, and so on. These reflect both the popular attractions of composite indices and rankings, as well as the broadening nature of concerns about development[34].

31. Deaton [2008].
32. Agarwal [1997].
33. Gallup [2006] and Veenhoven [2006].
34. See Bandura [2008], for a listing and summary description of each.

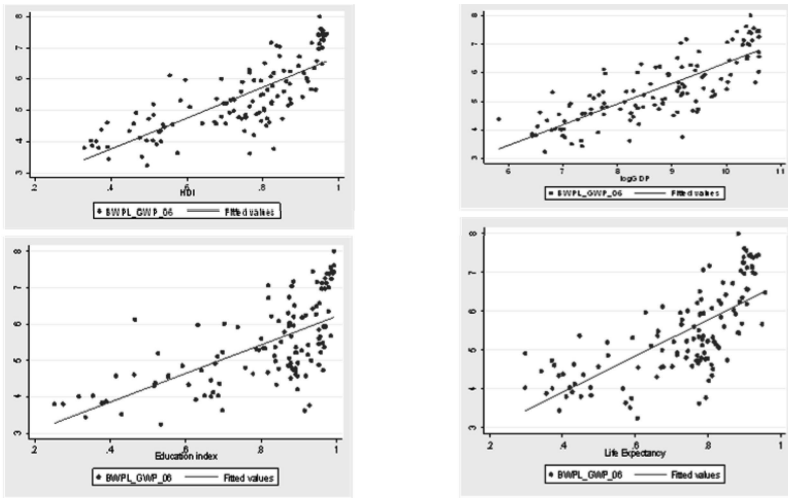

Figure 3. High correlation of BWPL with HDI & its components...

Source: Calculated from UNDP HDI data and Gallup World Poll 2006 Best Worst Life data from World Database of Happiness.

5. Conclusions

To sum up, the introduction of the HDI two decades ago was an early attempt to address the shortcomings in conventional measures of well-being. The HDI has continued to attract widespread attention and motivates the work of activists, scholars and political leaders around the world. Indeed the revival of interest in this subject at the highest levels of government, as exemplified by the CMESP, alongside the established reputation of the HDR, underlines the opportunities available on the twentieth anniversary of the report.

This paper has synthesised some key accomplishments of the HDI over 20 years, and updated those who have not followed its recent trajectory. We have suggested that the HDI, together with its family of measures focussed on inequality and deprivation, provide key insights into levels and patterns of development. It is as relevant as ever given the renewed interest in measures of well-being associated with the recent CMESP and work of the OECD in related areas.

At the same time we should underline the importance of local specificity. From its beginnings, the HDR has argued for taking seriously the role of local specificity in thinking about economic and social development. And since 1990, dominant policy and intellectual views about the causes and nature of changes in economic and social development have evolved significantly in the direction of recognizing the need to take account of national

and regional specificities in the definition of development strategies[35], which was part of the demise of, at least, the simplistic version of the "Washington Consensus."[36] This recognition underlines the inherent limitations of global indicators and rankings, even if such exercises can help prompt focus and consideration of locally appropriate responses to improve performance and the prospects for sustainable human development.

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35. See, for example, World Bank and IMF [1999], World Bank [2005].
36. Blanchard *et al.* [2004].

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