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The dynamics of Human Development Index[☆]



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ABSTRACT

In criticizing the nature of the Human Development Index, this paper proposes a different way of constructing the HDI in terms of capturing the pure flow of human development in the areas of material well-being, health, and education. Our comparison of the HDIF and the HDI shows that measuring human development with flow variables provides a better human development performance in terms of health and education than the traditional measure which is a mixture of stock and flow variables.

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1. Introduction

The Human Development Index (HDI) is a composite statistic aimed at measuring the human development level of any country and to allow cross-country comparison. Based on the HDI, a country is classified into three tiers of development: developed, still developing, or underdeveloped. According to the United Nations Development Programme (UNDP), human development is “about

creating an environment in which people can develop their full potential and lead productive, creative lives in accord with their needs and interests. People are the real wealth of nations. Development is thus about expanding the choices people have to lead lives that they value” (Streeeten, 1994). In order to reflect this, the HDI is based on three equally weighted dimensions: life expectancy, education attainment, and gross domestic product per capita. The HDI has been published in the Human Development Reports commissioned by the UNDP since 1990.

The introduction of the HDI attracted widespread attention, which reflects the general dissatisfaction with the conventional real per capita GDP or real wages as a measure of changes in living standards. The HDI was hailed as an improvement as it extended beyond the purchasing power of private incomes to include the measurement of well-being and the quality of life. In addition, since the per capita GDP and the other components of HDI – life

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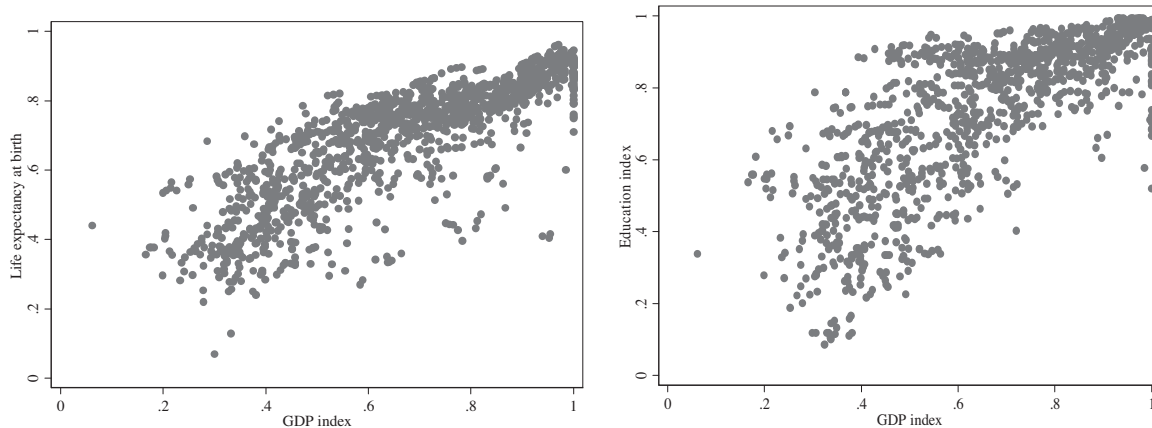


Fig. 1. (i) GDP index and life expectancy index. (ii) GDP index and education index.

Source: The data for the GDP index, life expectancy index and education index is obtained from various Human Development Reports.

expectancy and educational attainment – have generally advanced at varying rates over time, this allows a country to evaluate its economic progress in different developmental stages. Consequently, the HDI is increasingly used to set a country's human development goals, policy designs for economic development, and evaluation of such policy measures. More than one hundred countries have already constructed their own national or sub-national HDIs.

As widely used as HDI is, however, it is subject to a number of well-grounded criticisms, despite its improvement over the original income based measures. This study does not profess to answer all these criticisms. It is modest in comparison, as it focuses on just one of the four categories of criticisms – the mixture of stock and flow measures in the construction of the HDI, and proposes an alternative pure flow-based measure (HDIF). This study compares the current HDI with the proposed HDIF across a host of countries, encompassing all three levels of development.

2. Human Development Index: background and criticism

2.1. Background of the HDI

The United Nations started calculating the HDI for its member in 1975 and published the first Human Development Report in 1990. The motivation for the Report was to refine the basis for measuring a country's development and prosperity. The UNDP argues that economic prosperity, as measured by real income per capita, is not the only factor in measuring human development, because an increase in income per capita does not necessarily mean that the people of the country are better off as a whole.

Based on Fig. 1(i) and (ii), we can see that countries with an income level or GDP index of 0.6, the development level in terms of health or life expectancy index spans from 0.2 to 0.8, and similarly the education index ranges ranging from 0.4 to close to 1. Clearly, economic growth does not necessarily lead to the overall development of the human being. The first HDR correctly recognizes that “development is much more than just the expansion of income and

wealth” and defines human development as “the process of enlarging people's choices” (UNDP, 1990, p. 10). Thus, the first HDR employs the HDI and examines such concepts as health and life expectancy, education, and work as well as leisure time. Today, the HDI examines three basic dimensions to determine a country's growth and achievements in human development. The first is health, which is measured by life expectancy at birth. Those with higher life expectancies rank higher than those with lower life expectancies. The second dimension measures a country's overall knowledge level via the literacy rate among adults over 25 years combined with the gross enrolment ratio of students from primary school through university. The third and final dimension is a country's standard of living, measured as the gross domestic product per capita in purchasing power parity terms, based on the United States dollar.

To assure accuracy, a separate index is calculated for each dimension using raw data specifically gathered for the report. A simple intermediate index was created for each dimension by setting each indicator on a scale of 0–1 using maximum and minimum scaling values. Scaling and the normalized value are required for two reasons. First, the variables included in the HDI have different units; life expectancy is in years, adult literacy rate is in percentages, and the GDP per capita is in PPP\$. Normalization removes the heterogeneity of units by converting them into pure numbers. Such transformation is necessary as the composite index is accomplished by adding up the intermediate indices. Second, scaling enables comparisons as to how a country fared in each dimension, and how far it has to go. The HDI for each country is then calculated as a simple average of the three indices, including the life expectancy index, the gross enrolment index, and gross domestic product.

2.2. Criticism of the HDI

Since its inception, the HDI has been the focus of public debate and criticism in three broad groups. The first group is about methodology. Weighting the three components of the index equally suggests a perfect substitution between

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