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# THE HUMAN DEVELOPMENT INDEX: SOME HISTORICAL COMPARISONS

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## I. INTRODUCTION

The Human Development Index (HDI) devised by the United Nations has already become established as an important contribution to the measurement of living standards. Modifications were made to the original methodology in United Nations (1994) to allow comparisons of performance over time and data were provided for a large sample of countries covering benchmark years from 1960 to 1992.

Data exist which can provide estimates of HDI for a substantial number of countries in 1950 and for smaller groups in 1870 and 1913. This may be of interest for several reasons. First, because economic historians' traditional focus on national accounts data in assessing economic performance needs to be complemented by additional information if more comprehensive measures of the history of socio-economic development are to be provided. Second, since GDP/head and the other components of HDI (life expectancy and educational attainment) have generally advanced at varying rates over time, this allows a new angle on comparisons of economic progress in different economic eras. Third, it is useful to reflect on the possible implications of apparent discrepancies in the historical rankings of countries according to HDI and GDP per person.

This agenda is addressed here as follows. Section II briefly describes and evaluates the concept of HDI before data problems are considered and estimates are presented in Section III. Section IV discusses the findings.

## II. THE HUMAN DEVELOPMENT INDEX

HDI is seen by its authors as a contribution to the search for a better and more comprehensive measure of socio-economic welfare than GDP. Its roots lie in an approach pioneered by Sen (1987) which sees underdevelopment as the lack of certain basic capabilities rather than the lack of income per se. It is the lives that people lead which are taken to be of intrinsic importance and writers in this tradition stress that, in general, these outcomes depend substantially on the provision of public services

such as education and health as well as the level of private incomes. If the correlation between income growth and enhancement of capabilities is weak, then there may be a case for shifting development priorities towards the provision of public services even if this is at the expense of economic growth as conventionally measured (Anand and Ravallion, 1993, p. 134).

HDI is a composite of three basic components: longevity, knowledge, and income. Human development is seen as a process of expanding people's choices. Income is regarded as contributing to this end primarily in the escape from poverty; above a threshold level it is considered to make a sharply diminishing contribution to human development, eventually tailing off to nothing. Longevity is measured by life expectancy at birth and knowledge is measured by a weighted average of adult literacy and mean years of schooling.

The components are combined in a single index by measuring them in terms of the percentage of the distance travelled between an assumed minimum and maximum value in each case. The 1994 *Human Development Report* fixed these as the most extreme values observed or expected over a long period with a view to facilitating explicit comparisons over time (United Nations, 1994, p. 92).

HDI is (indexed life expectancy + indexed educational attainment + indexed adjusted income)/3. In each case the indexed figure lies between 0 and 1. The procedure is probably best understood by looking at a specific calculation. Accepting for the moment the accuracy of the underlying data reported in Table 1, the estimate in Table 4 for the United States in 1870 is constructed as follows.

For life expectancy the maximum and minimum are assumed to be 85 years and 25 years respectively. The index for life expectancy is (44.0 - 25.0)/(85.0 - 25.0) = 0.317. For educational attainment a weight of 2/3 is given to the literacy rate - which is taken to have a minimum of 0 and a maximum of 100 per cent - and a weight of

1/3 is given to years of schooling which are assumed to have a maximum of 15 years and a minimum of 0 years. Years of schooling for the USA in 1870 are estimated as 4.8 years as explained below in Section III. The educational attainment index is therefore $[2(0.75) + (4.8 - 0.0)/15]/3 = (1.5 + 0.32)/3 = 0.607$.

Income is discounted increasingly heavily above a certain threshold such that the maximum (adjusted) value is taken to be 5385 1990 international dollars while the minimum is specified as $200. All the values in 1870 are below the discounting threshold. The index of adjusted income is therefore $(2457 - 200)/(5385 - 200) = 0.435$. Finally, HDI is computed as $(0.317 + 0.607 + 0.435)/3 = 0.453$.

The widespread appeal of HDI lies in its emphasis on components of well-being other than income. As its authors freely admit, there are, however, many possible objections to its use. An extended review of various criticisms is provided in a technical note in United Nations (1993). Like GDP per person, HDI is simply an average measure, although, data permitting, it can be modified to consider inequalities or it can be computed for sub-groups of a country's population.

Index number problems are a more serious worry. Clearly, the index has a very limited coverage; that is, in effect it gives zero weight to aspects of well-being which many would regard as important, some of which might easily be justified in terms of the capabilities approach to development. For example, Dasgupta and Weale (1992) propose the inclusion of political and civil rights in a more comprehensive index of the quality of life. It should also be noted that the selection of the maximum and minimum values in effect implies arbitrary trade-offs between components. For the 1994 version of HDI used in this paper, a one unit increase in HDI would result from raising income by $15.56 or life expectancy by 0.18 years or literacy by 0.45 percentage points or schooling by 0.135 years.

These remarks - which, mutatis mutandis, would also apply to other diagnostics of the inadequacy of GDP as a measure of welfare such as heights - are intended to put HDI in perspective rather than to suggest that there is no value in its measurement. Given the attention which the Human Development Report commands, it is appropriate both to make these qualifications but also to attempt some historical estimates.

## III. ESTIMATES OF HDI FOR 1870, 1913 AND 1950

In order to construct estimates of HDI, data are required on real GDP/person, life expectancy, literacy and schooling. Both for reasons of data reliability and in terms of the comparisons developed in Section IV, the sample is restricted to today's advanced countries together with observations from Asia and Latin America where adequate information is available.

For historical estimates of real GDP, it has become usual among economists and economic historians studying long-run economic growth to rely on the work of Angus Maddison. This paper is no exception and takes advantage of the recent update and revisions in Maddison (1995).

For life expectancy at birth in 1913 and 1950, evidence is generally available in the conventional United Nations sources listed in Tables 2 and 3. For 1913, it is necessary to supplement these for a few countries by independent estimates based on fitting life tables to available information on vital rates and age structures. For 1870, this approach has had to be adopted throughout and for Belgium and Switzerland estimates have been interpolated from nearby years. The 1870 estimates are clearly less reliable than those of the other two years but are unlikely to be in serious error.

The greatest difficulties arise with respect to educational attainment, in particular schooling for which only scattered information exists prior to World War I. With a view to historical comparability of estimates of HDI, it is, however, important to include schooling rather than rely simply on literacy as a measure of educational

attainment since available evidence suggests that its indexed value is much lower. For example, whereas the literacy estimate based on signatures in marriage registers in Table 1 for the UK in 1870 is 75 per cent, the average years of schooling of those born in 1836-45 has been estimated as 4.7 years (Matthews et al., 1982, p. 573). Taking account of this and using the formula discussed above, would imply an educational attainment index of 0.604 rather than the 0.75 value for literacy on its own.

Where data on schooling exist, they are generally for enrolment rates rather than for years of completed schooling. Suitably lagged, these are used to generate estimates for 1913 and 1950 in Tables 2 and 3. For 1870, there is insufficient information to use this approach. Instead, schooling has been predicted from the evidence on literacy using the regression relationship between literacy rates and schooling in the 1913 cross-section of countries. This regression is:

$$\text{Schooling} = -1.375 + 0.083\ \text{Literacy} \qquad R^2 = 0.747$$
$$(-1.580)\quad (7.480)$$

While literacy has been used to obtain both aspects of educational attainment, the formula for the index means that the value is not the same as would be obtained by using literacy by itself as a proxy.

Estimates of literacy are also somewhat tricky. Literacy is taken to include basic ability in writing as well as reading for which ability to sign a name in a marriage register is taken as a proxy. Data for 1950 are available in standard UNESCO sources but are problematic for earlier years. For 1913, the two main sources used are estimates by O'Rourke and Williamson (1996) for young adult immigrants to the United States in the 1890s and estimates from the United Nations for 1920. Where both are available they are usually very similar; if the UN estimate gives higher

illiteracy, it has been preferred. Where additional sources have been drawn on, attention has been paid to information on basic writing.

This same consideration has dominated the compilation of data on literacy for 1870 where the sources are few, taking note especially of the tendency in Scandinavia to a much greater lag than elsewhere in Europe in the development of writing than reading ability (Markussen, 1990) and to the general tendency of female to be lower than male literacy. While I believe that the educational attainment estimates for 1913 are reasonably reliable, those for 1870 are of rather low quality despite being the best available and may well be subject to revision in the light of future research.

**Table 1. Maddison 16: Components of HDI in 1870**

| | GDP/Head ($1990 int) | Life Expectancy ($e_0$) | Literacy Rate (%) |
|---|---|---|---|
| Australia | 3801 | 48.0 | 64 |
| Austria | 1875 | 31.7 | 40 |
| Belgium | 2640 | 40.0 | 66 |
| Canada | 1620 | 42.6 | 79 |
| Denmark | 1927 | 45.5 | 81 |
| Finland | 1107 | 36.5 | 12 |
| France | 1858 | 42.0 | 69 |
| Germany | 1913 | 36.2 | 80 |
| Italy | 1467 | 28.0 | 32 |
| Japan | 741 | 37.0 | 21 |
| Netherlands | 2640 | 38.9 | 78 |
| Norway | 1303 | 49.3 | 55 |
| Sweden | 1664 | 45.8 | 75 |
| Switzerland | 2172 | 41.0 | 85 |
| UK | 3263 | 41.3 | 76 |
| USA | 2457 | 44.0 | 75 |

*Sources:*

**GDP/Head:** Maddison (1995)

**Life Expectancy:** Australia: McDonald et al. (1987); Austria: Helczmanovski (1979); Belgium and Netherlands: Deprez (1979); Canada: Bourbeau and Legare (1982); Denmark: Andersen (1979); Finland: Turpeinen (1979); France, Sweden and UK: Wrigley (1987); Germany: Lee (1979); Italy: Vallin (1979); Japan: Mosk and Johansson (1987); Norway and Switzerland: Dublin et al. (1949); USA: Haines (1994).

**Literacy:** Australia: Mulhall (1892); Austria, Belgium, France, Germany, Italy, Switzerland, UK: Cipolla (1969); Canada: Greer (1978); Denmark, Finland, Norway: Markussen (1990); Japan: Taira (1971); Netherlands: Adelman and Morris (1988); Sweden: Johansson (1977); USA: Soltow and Stevens (1981).

**Table 2. Components of HDI in 1913**

| | GDP/Head ($1990int) | Life Expectancy ($e_0$) | Literacy Rate (%) | Schooling Years |
|---|---|---|---|---|
| **Maddison 16** | | | | |
| Australia | 5505 | 59.1 | 96 | 8.9 |
| Austria | 3488 | 42.2 | 66 | 5.3 |
| Belgium | 4130 | 49.6 | 86 | 5.1 |
| Canada | 4213 | 52.5 | 94 | 7.1 |
| Denmark | 3764 | 57.7 | 99 | 7.0 |
| Finland | 2050 | 46.2 | 50 | 0.7 |
| France | 3452 | 50.4 | 92 | 7.7 |
| Germany | 3833 | 49.0 | 97 | 7.3 |
| Italy | 2507 | 47.2 | 62 | 3.5 |
| Japan | 1334 | 44.4 | 72 | 4.2 |
| Netherlands | 3950 | 56.1 | 97 | 6.4 |
| Norway | 2275 | 57.2 | 98 | 6.2 |
| Sweden | 3096 | 57.0 | 98 | 7.0 |

| Table 2. Components of HDI in 1913 | | | | |
|---|---|---|---|---|
| | GDP/Head ($1990int) | Life Expectancy ($e_o$) | Literacy Rate (%) | Schooling Years |
| Switzerland | 4207 | 52.2 | 99 | 7.6 |
| UK | 5032 | 53.4 | 96 | 4.8 |
| USA | 5307 | 51.6 | 92 | 8.1 |
| **Other Countries** | | | | |
| Argentina | 3797 | 46.3 | 64 | 1.3 |
| Brazil | 839 | 31.0 | 35 | 0.7 |
| Chile | 2653 | 30.3 | 63 | 2.1 |
| India | 663 | 24.8 | 9 | 0.3 |
| Ireland | 2733 | 53.8 | 91 | 3.8 |
| Mexico | 1467 | 29.5 | 29 | 1.9 |
| New Zealand | 5178 | 61.4 | 95 | 7.5 |
| Spain | 2255 | 41.8 | 52 | 5.4 |

*Sources:*

**GDP/Head**. Maddison (1995).

**Life Expectancy**. United Nations (1957) except Canada from Bourbeau and Legare (1982) and Brazil, Chile, Mexico from Arriaga (1968).

**Literacy.** Argentina: Diaz-Alejandro (1970); Australia, Brazil, Canada, Chile, France, India: United Nations (1960); Austria, Belgium, Denmark, Germany, Ireland, Netherlands, Norway, Sweden, Switzerland, UK: O'Rourke and Williamson (1996); Finland: Myllantaus (1990); Italy, USA: interpolated from United Nations (1960) and O'Rourke and Williamson (1996); Japan: Taira (1971); Mexico: Vaughan (1990); New Zealand: Flora (1973); Spain: Nunez (1990).

**Schooling:** based on 10 x the primary enrollment rate in 1880 calculated from Mitchell (1992) (1993) (1995).

| Table 3. Components of HDI in 1950 | | | | |
|---|---|---|---|---|
| | GDP/Head ($1990int) | Life Expectancy ($e_o$) | Literacy Rate (%) | Schooling (Years) |
| **Maddison 16** | | | | |
| Australia | 7218 | 69.6 | 99.0 | 7.0 |
| Austria | 3731 | 65.7 | 99.0 | 7.6 |
| Belgium | 5346 | 67.5 | 96.7 | 7.8 |
| Canada | 7047 | 69.1 | 99.0 | 8.6 |
| Denmark | 6683 | 71.0 | 99.0 | 6.6 |
| Finland | 4131 | 66.3 | 90.0 | 6.4 |
| France | 5221 | 66.5 | 96.4 | 8.4 |
| Germany | 4281 | 67.5 | 99.0 | 7.3 |
| Italy | 3425 | 66.0 | 85.9 | 6.2 |
| Japan | 1873 | 64.0 | 97.8 | 7.2 |
| Netherlands | 5850 | 72.1 | 99.0 | 7.2 |
| Norway | 4969 | 72.7 | 99.0 | 7.0 |
| Sweden | 6738 | 71.8 | 99.0 | 6.1 |
| Switzerland | 8939 | 69.2 | 99.0 | 7.0 |
| UK | 6847 | 69.2 | 99.0 | 8.5 |
| USA | 9573 | 69.0 | 96.8 | 9.0 |
| **Other Countries** | | | | |
| Argentina | 4987 | 62.7 | 86.4 | 5.3 |
| Brazil | 1673 | 51.0 | 49.4 | 2.2 |
| Chile | 3827 | 54.1 | 80.2 | 5.0 |
| China | 614 | 40.6 | 16.0 | 1.3 |
| Columbia | 2089 | 50.6 | 62.3 | 2.6 |
| Greece | 1951 | 65.9 | 74.1 | 4.8 |

| Table 3. Components of HDI in 1950 | | | | |
|---|---|---|---|---|
| | GDP/Head ($1990int) | Life Expectancy ($e_o$) | Literacy Rate (%) | Schooling (Years) |
| Hong Kong | 1962 | 60.9 | 57.9 | 4.0 |
| India | 597 | 38.7 | 18.9 | 1.5 |
| Indonesia | 874 | 37.5 | 59.6 | 1.3 |
| Ireland | 3518 | 66.9 | 96.0 | 9.0 |
| Mexico | 2085 | 50.7 | 56.8 | 4.3 |
| New Zealand | 8495 | 69.6 | 99.0 | 8.4 |
| Peru | 2263 | 43.9 | 40.6 | 2.3 |
| Philippines | 1293 | 47.5 | 60.0 | 3.1 |
| Portugal | 2132 | 59.3 | 55.9 | 3.1 |
| Singapore | 2038 | 60.4 | 45.9 | 4.5 |
| South Korea | 876 | 47.5 | 76.8 | 1.3 |
| Spain | 2397 | 63.9 | 82.4 | 4.5 |
| Sri Lanka | 969 | 59.9 | 67.6 | 3.8 |
| Taiwan | 922 | 53.3 | 56.0 | 2.7 |
| Thailand | 848 | 47.0 | 52.0 | 2.5 |
| Turkey | 1299 | 47.0 | 31.9 | 1.5 |
| Venezuela | 7424 | 52.3 | 52.2 | 2.4 |

*Sources:*

**GDP/Head:** Maddison (1995).

**Life Expectancy:** United Nations (1988) except for Taiwan from Morris (1979).

**Literacy:** UNESCO (1977) except for Taiwan from Morris (1979) and China from Chen and Galenson (1969).

**Schooling:** based on 10 x primary enrollment rate in 1930 in UNESCO (1958).

The compilations of data required to construct the estimates of HDI are reported in Tables 1, 2 and 3. The resulting estimates of HDI are shown in Table 4 in which United Nations's estimates for recent years are also displayed. Despite the doubtful quality of the estimates for 1870 and perhaps 1913, they are surely good enough to suppport the uses to which they are put in the following section.

| **Table 4. Human Development Index, 1870-1992** | | | | | |
|---|---|---|---|---|---|
| | 1870 | 1913 | 1950 | 1970 | 1992 |
| **Maddison 16** | | | | | |
| Australia | 0.530 | 0.787 | 0.842 | 0.862 | 0.926 |
| Austria | 0.248 | 0.493 | 0.729 | 0.857 | 0.917 |
| Belgium | 0.417 | 0.618 | 0.827 | 0.851 | 0.916 |
| Canada | 0.403 | 0.672 | 0.851 | 0.887 | 0.932 |
| Denmark | 0.444 | 0.683 | 0.845 | 0.879 | 0.912 |
| Finland | 0.149 | 0.353 | 0.729 | 0.855 | 0.911 |
| France | 0.387 | 0.611 | 0.825 | 0.871 | 0.927 |
| Germany | 0.390 | 0.637 | 0.772 | 0.856 | 0.918 |
| Italy | 0.179 | 0.435 | 0.672 | 0.831 | 0.891 |
| Japan | 0.151 | 0.372 | 0.595 | 0.875 | 0.929 |
| Netherlands | 0.445 | 0.677 | 0.855 | 0.867 | 0.923 |
| Norway | 0.352 | 0.576 | 0.844 | 0.878 | 0.928 |
| Sweden | 0.412 | 0.634 | 0.847 | 0.881 | 0.928 |
| Switzerland | 0.447 | 0.685 | 0.842 | 0.872 | 0.931 |
| UK | 0.493 | 0.717 | 0.850 | 0.873 | 0.919 |
| USA | 0.453 | 0.730 | 0.851 | 0.881 | 0.925 |
| **Other Countries** | | | | | |
| Argentina | | 0.502 | 0.748 | 0.748 | 0.853 |
| Brazil | | 0.157 | 0.365 | 0.507 | 0.756 |

| Table 4. Human Development Index, 1870-1992 | | | | | |
|---|---|---|---|---|---|
| | 1870 | 1913 | 1950 | 1970 | 1992 |
| Chile | | 0.343 | 0.610 | 0.682 | 0.848 |
| China | | | 0.159 | 0.372 | 0.644 |
| Columbia | | | 0.421 | 0.554 | 0.813 |
| Greece | | | 0.540 | 0.723 | 0.874 |
| Hong Kong | | | 0.471 | 0.737 | 0.875 |
| India | | 0.052 | 0.155 | 0.254 | 0.382 |
| Indonesia | | | 0.255 | 0.306 | 0.586 |
| Ireland | | 0.553 | 0.726 | 0.829 | 0.892 |
| Mexico | | 0.185 | 0.422 | 0.642 | 0.804 |
| New Zealand | | 0.786 | 0.854 | 0.861 | 0.907 |
| Peru | | | 0.345 | 0.528 | 0.642 |
| Philippines | | | 0.352 | 0.489 | 0.621 |
| Portugal | | | 0.462 | 0.588 | 0.838 |
| Singapore | | | 0.450 | 0.682 | 0.848 |
| South Korea | | | 0.349 | 0.523 | 0.859 |
| Spain | | 0.381 | 0.574 | 0.820 | 0.888 |
| Sri Lanka | | | 0.422 | 0.506 | 0.665 |
| Taiwan | | | 0.348 | 0.622 | 0.867 |
| Thailand | | | 0.298 | 0.465 | 0.798 |
| Turkey | | | 0.275 | 0.441 | 0.739 |
| Venezuela | | | 0.608 | 0.728 | 0.820 |

*Sources:* For 1870, 1913 and 1950 derived from Tables 1 to 3; 1970 and 1992 from United Nations (1994).

## IV. DISCUSSION

A first use of the estimates in Table 4 is to follow the lead of the United Nations (1994, p. 92) and to compare today's levels of HDI in developing countries with that of earlier developers. The results are striking: in 1870 the HDI of Australia was equal to that of Bolivia in 1992, a country ranked 113th in the world, while Finland, Italy and Japan are all below the bottom country in 1992, Guinea, which scored 0.191 (United Nations, 1994, p. 94). Disappointments in development of the recent past like the Philippines still emerge by 1992 with an HDI in excess of any country of 1870 and even India is comparable to France or Germany in 1870. A comparison based on real GDP per person is far less favourable to the today's developing countries: real GDP/person in 1990 international dollars in 1992 is estimated by Maddison (1995, p. 24, 218) for Bolivia(1990), India and Philippines to be $1744, $1348 and $2213 respectively - well behind the leaders of 1870 in Table 1.

In the terminology of the United Nations a level of HDI below 0.5 are considered to have a low level of human development, those between 0.5 and 0.8 a medium level and those above 0.8 a high level. On this basis, all but Australia were still at a low level of development in 1870 while nobody had quite arrived at a high level in 1913. Twelve countries had reached a high level of development by 1950 (though not Germany or Japan) compared with 40 in 1992 (United Nations, 1994, p. 92). These include the Asian star successes - Hong Kong, Singapore, South Korea and Taiwan - three of which have an HDI higher than any country in 1950.

The decline in mortality in low income countries during the twentieth century is a major factor behind the relatively better showing of poor countries on HDI in the 1870/1992 comparisons. Life expectancy at birth in 1990 averaged 56.8 years in countries of low human development (United Nations, 1994) which exceeds any observation in Table 1 and is broadly comparable with the leaders in 1913 in Table 2. By contrast, the average of adult literacy in countries of low human development

in 1990 was only 48.3 per cent which is well below the median of Maddison's sixteen in 1870.

It is indeed now generally recognized that improvements in mortality since 1870 have largely resulted from factors other than increases in income such as advances in science and better provision of public health measures (Preston and Haines, 1991) which are available to poor as well as rich countries (Sen, 1995). Regression analysis of the data in Tables 1 to 3 suggests an elasticity of life expectancy with respect to income of at most 0.1 which would imply that only about a quarter of the decline in mortality between 1870 and 1950 in the Maddison 16 countries could be attributed to income growth.

A second comparison that can be drawn from Table 4 is of the speed of development in different eras. Here, the most interesting aspect is perhaps to look at progress in the industrializing countries of the late nineteenth century and in the developing world since 1950. For Maddison's 16 the (unweighted) average gain in HDI between 1870 and 1913 was 0.236 points whereas for the sixteen countries with an HDI in 1950 less than the 0.530 level of the leader, Australia, in 1870 the (unweighted) average gain in HDI between 1950 and 1992 was 0.387 points. The biggest gainer in the recent past has been Taiwan whose HDI rose by 0.519 points between 1950 and 1992 a much larger increase than the high between 1870 and 1913 of 0.277 points posted by the United States.

A third interesting feature of the estimates of HDI concerns disparities in the rankings of countries by HDI and by real GDP/head. This is, of course, a comparison which is highlighted by the United Nations in its Human Development Report. In each year, the rank correlations between HDI and real GDP/Head are very high - 0.898 in 1870, 0.924 in 1913, 0.915 in 1950 and 0.936 in 1992 - but there are always a few cases where significant discrepancies occur. There seem to be three possible and, by no means mutually exclusive, reasons.

The first and most obvious is measurement error particularly in the earlier years. Although my earlier discussion focused on possible errors in the estimates of HDI, it may also be that the discrepancies indicate weaknesses in national accounts data. It may be that further attention should be given to improving estimates both of HDI and GDP in these cases especially.

The second possibility is that at least some of the discrepancies are genuine and that the HDI ranking is a leading indicator of subsequent changes in GDP/head rankings. This might be justified on the basis that the HDI ranking reflects relative prowess at human capital formation. The leading indicator hypothesis receives some support from the data. Reflecting the increased sample size, a 'big' discrepancy might be regarded as a difference in rankings of plus/minus 3 in 1870, plus/minus 4 in 1913 and plus/minus 6 in 1950 and the prediction would be that a country ranked higher (lower) will subsequently rise (fall) in GDP/head ranking by the next Maddison benchmark year - 1913, 1950 and 1992 respectively. This prediction turns out to be correct 13 times out of 17.

The third explanation is that the discrepancies primarily reflect policy choices in terms of the priority given to enhancing capabilities through provision of public services. There have been marked differences recently in the policy stances of developing countries in terms of public health and education programmes which seem to be reflected in life expectancy and literacy outcomes (Sen, 1995). Similarly, changes in public health and education policies appear to have been substantially responsible for declining mortality and partly responsible for rising school enrolment and literacy in late nineteenth century Britain when HDI advanced strongly despite disappointing economic growth (Szreter, 1988; Mitch, 1986).

If this third explanation turns out to be of central importance historically, this has policy implications. As Anand and Ravallion point out (1993, p. 144, 147), it would strengthen the view that intervention and certain components of public expenditure

matter for human development over and above any role that they may have in promoting income growth. Further historical research into this suggestion seems highly desirable.

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