

## INCOME AND HUMAN DEVELOPMENT: MEASURING REGIONAL DISPARITIES IN ITALY

### 1. Introduction

Italy is probably the European country with the widest and historically deep-rooted regional disparities within it, at least (but maybe not only) in economic terms. There is a huge literature dealing with the so-called «questione meridionale» – the social, cultural and economic backwardness of southern Italy – a literature dating back to the end of the XIX century. During the very last decades analyses and researches about the remarkable performances of other parts of the country, namely the north-eastern and central regions (Nec), have been flourishing too. We should add that in the second half of the XX century policy makers devoted many efforts to overcome the historical North-South divide, performing a massive regional policy mostly by way of the so-called «Cassa per il Mezzogiorno», yet with largely disappointing results.

Measuring regional disparities is a first and necessary step before trying to analyse their historical trends. Yet in Italy (as indeed in most of the countries) reliable data on regional income are available only from the second half of the XX century. This is the reason why, already by the end of the XIX century, some of the most relevant Italian thinkers (one of them, Nitti, who was prime minister) were arguing over the real extent of the North-South divide, in the 50 years after Unification. During the second half of the XX century, economic historians have been puzzling with the same questions, in some cases (from the seventies) producing new estimates of regional income. The debate is still going on, my recent estimates of regional value added for benchmark years from 1891 to 1951<sup>1</sup> being one of the last contributions.

Yet in order to catch the effective levels of well-being, an analysis focusing only on value added would be inadequate. In modern societies income is the key economic index, but it is not the only determinant of the standard of living. Particularly as economic development goes on, when almost everyone can satisfy the basic needs of «food» and «shelter», changes in income per capita can be unrelated with real changes in the level of well-being. Among the economists who have recognized this, Nobel prize Amartya Sen [1984; 1991; 1992; 1999; Anand, Sen 1993] has given the most important contribution to the building of a new indicator, known as human development index (Hdi), which should be more fit for approximating the «quality of life». Sen's approach rests on the idea of capability: according to him well-being is produced by a combination of the satisfaction of material needs, with a long and healthy life and the capacity of «choice», this last assured by an adequate education. These three factors, that is material resources, longevity and education, can be recognized as the three basic components of human life, in a broader view of economic growth aiming to include freedom and social development [United Nations 1994; 2005].

If income (value added) per capita can approximate resources, life expectancy at birth is, of course, the most appropriate index for longevity. The third one, education, is usually defined as a weighted mean of the adult literacy rate and the gross enrolment ratio. Hdi is given by the sum of these three indices, previously normalized. Officially adopted by the United Nations, Hdi was the object of many criticisms but also the only index which could

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<sup>1</sup> Published in «Rivista di Storia Economica», 2005, nn. 1 and 3.

seriously defy the long-standing primacy of income per capita, undisputed from the 1930s [Mamalakis 1996]; the reputation of Hdi is also due to the fact that it has a major ethical (and for some instances political) significance, for example taking into account – although indirectly – the effects of social and environmental policies.

This paper aims at building and briefly discussing regional estimates not only of income per capita, but also of life expectancy, education and hence of human development, for benchmark years from 1871/1891<sup>2</sup> up to 2001. For the 1891-1951 period income figures are taken from my cited works on regional value added, for the following years from official sources. Estimates of education are drawn from Istat data, yet with some caveats and variants that will be discussed. Estimates of life expectancy have been mostly taken from a working paper by Conte, Della Torre and Vasta [2001], and are unpublished at present. Finally, the three indices are put together in order to build a regional human development index (Hdi), for benchmark years from 1891 to 2001. For macro-regional areas (North-West, North-East-Centre and Mezzogiorno) both Hdi and income per capita are compared with those of other European and extra-European countries.

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<sup>2</sup> Life expectancy and education refer to 1871, income to 1891.

## 2. Income estimates

The new Italian state, born in 1861, organized the collection of statistical data all over the country, through the statistical office of the Ministry of agriculture, industry and trade. Besides two yearly statistical reviews, the «Annali di Statistica» (from 1871) and the «Annuario Statistico Italiano» (from 1878), the main results of this activity were the population censuses, starting from 1861 and with a ten-year interval (1891, however, was missing), and later the industrial censuses, starting from 1911 (from 1937 those will encompass some services too). However, in this period there were not official value added accounts, neither at a national or at a regional level. For this reason, economists who wanted to estimate regional income had to resort to indirect calculations, compounding – with some unavoidable arbitrariness – various and different indices, such as employment by sector, horsepower, fiscal revenues, deposits of particular banks (the Casse di risparmio), data of the postal services, and so on [Mortara 1913; Tagliacarne 1963].

As mentioned above, during the last decades some economic historians tried to produce more reliable regional income estimates, making use of new national accounts; these were allocated according to the regional employment by subsector, as recorded in the population or in the industrial censuses. For the period prior to world war I, the first attempt was made by Vera Zamagni in her classic book *Industrializzazione e squilibri regionali in Italia* [1978a], concerning the 1911 year. Zamagni's estimates would have stood alone for more than twenty years; the estimates for the industrial sector were adopted by Esposto [1997] in a more recent work for benchmark years: 1871 (for macro-areas), 1891 and 1911. Stefano Fenoaltea recently has been the one to bring seriously into question Zamagni's results, in his regional estimates covering also 1871, 1881 and 1901, but referring only to the industrial sector [2003a; 2003b; 2004]. My estimates for 1891 and 1911 [Felice 2005a] have followed at short distance: as those by Zamagni, they cover the three economic sectors (agriculture, industry and services), but they make use of the most updated national estimates [Rey 1992; Rey 2000] and of an allocative methodology which aims to integrate the approaches of Zamagni and Fenoaltea, trying to compensate for their respective weaknesses.

Referring to 1911, Fenoaltea's results turned out to be quite different from those of Zamagni. If we put Italy=1, the industrial value added per capita in the North-western regions (Lombardy, Piedmont and Liguria) would have been 1.53 according to Fenoaltea, 2.01 according to Zamagni; conversely, the industrial income of southern Italy would have been 0.69 according to the former, 0.42 to the latter<sup>3</sup>. This discrepancy is more puzzling since both authors worked under the same methodological assumption, i.e. allocating the national value added of each industrial subsector according to the corresponding regional employment<sup>4</sup>. Yet they made use of different sources. Zamagni took employment data from the industrial census (CI), which had a bias toward overlooking underemployment and home-based work; since both were probably stronger in southern Italy, this area should have been penalized by Zamagni's estimates. Unlike Zamagni, Fenoaltea adopted the population census (CP), which recorded a higher number of workers, including also underemployment and home-based work; yet the author did not consider productivity differences, which could exist within each single sector among the Italian regions, usually in favour of the more developed North-West: for this reason, he probably undervalued the North-South industrial divide. My own estimate tried to combine the data of both censuses, classifying, for each sub-

<sup>3</sup> Fenoaltea's data are corrected according to his new estimates for textile and utilities [2004; 2006].

<sup>4</sup> When data were available (indeed, only in few cases), Zamagni used regional production.

sector, as underemployment the workers of the CP exceeding those of the CI; then productivity per worker has been approximated through working wages, just as Zamagni did. The following results ranked roughly in between those of Zamagni and Fenoaltea: in 1911, industrial income per capita was 1.70 in the North-West, 0.57 in southern Italy.

There are other differences between my estimates and those of Fenoaltea and Zamagni, as I explained more thoroughly in my quoted work [Felice 2005a]. Here I will recall only two general clarifications, concerning agriculture and services. Agricultural regional value added was derived from Federico's estimates of the regional gross saleable production [2003] – which we can regard as quite reliable – using national value added by Federico, and three different shares of costs to allow for differences in the use of inputs by groups of regions [from Tassinari 1931]. For the services I adopted the same methodology used for the industrial sector: allocating national value added according to the regional employment by subsector, trying to consider – with different weights – underemployment as well as female and child labour, and approximating interregional differences in productivity per worker through wages. This approach, besides from being consistent with the one used for the industrial sector, seemed overall more reliable than the one by Zamagni and Esposto, which was based mainly on indirect indices or on fiscal revenues (the latter were not very reliable, because they were not systematically recorded and did not allow for different levels of tax evasion among the regions); in fact, you can hardly compare Esposto's estimates from 1891 to 1911 (Liguria, for instance, in the services would fall from 2.5 to 0.9 – Italy=1), while my own uses an approach which allows comparisons over time.

Also for the interwar years we miss regional official value added accounts, although the statistical efforts of the national state were improved (Istat was founded in 1926). For a long time, the only estimate of regional income has been the one by Svimez for the year 1938 [1961, 770-73], which, however, did not consider separately the three branches of agriculture, industry and services, and left out the public sector.

From 1952 we can resort to the yearly estimates by Guglielmo Tagliacarne, published on the review of the Banca Nazionale del Lavoro «Moneta e Credito», and reliable since the 1960s; he also produced an estimate for 1951, yet published only in 1960 and extrapolated back from his estimates for the following years [Tagliacarne 1960; 1973]. We must consider that both Tagliacarne and Svimez made use of the old national value added series produced by Istat in 1957, which have been seriously put into question, and by now superseded by the new estimates of the group led by Guido Maria Rey [2000]. If we compared Svimez's 1938 benchmark with the Tagliacarne estimate for 1951, we could hardly match the findings with those of a more «qualitative» literature: for instance, North-West would not improve relatively to the rest of the country, although fascist autarchy and Reconstruction favoured it. This discrepancy is partly due to the fact that Svimez's 1938 estimates did not consider the public sector, which probably was more equally distributed among the Italian regions, hence overvaluing north-western ranking in 1938.

My estimates for 1938 and 1951 [Felice 2005b] make use of the same methodology for 1891 and 1911 (yet with more reliable data on working wages), allocating the new national figures by Rey's group according to the regional employment, as recorded both by the industrial and the population censuses. Thanks to the use of a same approach for all the period from 1891 to 1951, we can now have a quite consistent (and plausible) long-term trend, instead of a set of data often contradictory.

From the 1960s official statistics can be regarded as quite reliable, thanks to the work of Tagliacarne, Svimez and of Istat itself<sup>5</sup>. Hence it is possible to have a picture of regional income disparities in Italy ranging from 1891 to 2001, as shown in table 1.

Table 1. Regional income disparities in Italy, 1891-2001 (per capita value added, Italy=1)

	1891	1911	1938	1951	1961	1971	1981	1991	2001
Piedmont									
Aosta Valley	1.10	1.18	1.39	1.47	1.31	1.21	1.14	1.15	1.15
Liguria	1.49	1.53	1.68	1.62	1.27	1.16	1.11	1.15	1.09
Lombardy	1.16	1.22	1.39	1.53	1.46	1.34	1.28	1.30	1.30
<i>North-West</i>	<i>1.18</i>	<i>1.24</i>	<i>1.43</i>	<i>1.52</i>	<i>1.39</i>	<i>1.28</i>	<i>1.22</i>	<i>1.24</i>	<i>1.24</i>
Trentino-Alto Ad.	-	-	0.95	1.06	1.12	1.01	1.12	1.10	1.29
Veneto	0.80	0.84	0.84	0.98	0.99	0.99	1.08	1.12	1.13
Friuli	-	-	1.19	1.11	0.94	1.00	1.09	1.14	1.12
Emilia	1.08	1.08	1.04	1.12	1.14	1.14	1.29	1.21	1.23
Tuscany	1.02	0.96	1.01	1.05	1.02	1.05	1.11	1.05	1.09
The Marches	0.86	0.81	0.79	0.86	0.89	0.91	1.05	0.99	0.99
Umbria	1.01	0.88	0.96	0.90	0.91	0.93	0.98	0.97	0.96
Latium	1.52	1.48	1.19	1.08	1.12	1.07	1.05	1.13	1.13
<i>North-East-Centre</i>	<i>1.01</i>	<i>0.99</i>	<i>0.99</i>	<i>1.04</i>	<i>1.04</i>	<i>1.04</i>	<i>1.11</i>	<i>1.11</i>	<i>1.13</i>
Abruzzi	0.63	0.67	0.58	0.58	0.73	0.80	0.84	0.89	0.84
Campania	0.97	0.94	0.82	0.69	0.71	0.71	0.67	0.68	0.65
Apulia	1.00	0.86	0.72	0.65	0.68	0.75	0.72	0.73	0.67
Lucania	0.69	0.70	0.57	0.47	0.68	0.75	0.68	0.66	0.73
Calabria	0.64	0.70	0.49	0.47	0.61	0.67	0.65	0.59	0.64
Sicily	0.93	0.85	0.72	0.58	0.60	0.70	0.71	0.68	0.66
Sardinia	0.95	0.90	0.83	0.63	0.75	0.85	0.72	0.74	0.76
<i>South and islands</i>	<i>0.87</i>	<i>0.84</i>	<i>0.70</i>	<i>0.61</i>	<i>0.67</i>	<i>0.73</i>	<i>0.70</i>	<i>0.70</i>	<i>0.68</i>
Italy (2001 euros)	1,293	1,841	2,596	2,940	6,461	10,027	13,199	16,470	19,928

Sources and notes: for 1891 and 1911 Felice [2005a]; for 1938 and 1951 Felice [2005b]; for 1961 Tagliacarne [1962]; for 1971 Svimez [1993]; for 1981 and 1991 Istat [1995]; for 2001 Istat [2006a]. All data are at the historical borders and at the present population.

First, we can look at the North-South divide. It grew bigger through all the period from 1891 to 1951, yet at a faster pace from 1911 to 1951, partly due to the consequences of world war I [cfr. Zamagni 2002], and then to that of fascist autarchy and of Reconstruction, all of which favoured the more developed northern economy. We can see that during the 1891-1911 years the North-South divide remained almost unchanged, although in the North-West this was the time when the industrial «triangle» took shape; this stability could be explained by the positive consequences of the great mass migration<sup>6</sup>, both in terms of wage convergence and of remittances from abroad<sup>7</sup>: maybe not by chance, during this period the only southern regions which made some relative progress were the ones with the major exodus, that is Abruzzi, Lucania and Calabria.

The North-South divide decreased from 1951 to 1971. Probably both migration and regional policies played a role in this result (we must consider that in this period the former was also within the country, and so in terms of convergence with stronger positive effects since they were bi-directional). However, during the seventies the convergence process came to a halt, and southern Italy began to lose ground again, although very slowly. By

<sup>5</sup> Some doubts exist for the 1961 benchmark, where the old national value added series produced by Istat are still used.

<sup>6</sup> For its international consequences, see O'Rourke and Williamson [1999].

<sup>7</sup> Besides, we must remember that income data are calculated over the present population, instead than over the officially resident.

2001, the divide between Centre-North and southern Italy was still at the same level as in 1961, that is bigger than it was through all the period prior to world war I.

For what concerns single regions, it should be said that, according to the new estimates, by the end of the XIX century southern Italy was a quite diversified area. In 1891 there were two important regions, Campania and Apulia, more or less on the national average, thanks to services in the first case, to agriculture in the second (see next paragraph). In the case of Campania, we must consider that at the end of the XIX century Naples was still not only the most populated Italian town, but also the capital of continental southern Italy (the so-called «Meridione»), as testified among other things by the house rents – which according to the statistics of the time [Giusti 1910, 215-216] were in Naples the highest among the Italian towns – and by the attractiveness and reputation of its university: Naples, in other words, seemed still able to play its historical role as a capital, a role which during the XX century was bound to lose in favour of Rome. Around these two regions we can notice an external «belt», including Abruzzi, Lucania and Calabria, which acted as the periphery of southern Italy, which was in turn an under-developed and peripheral area: it is not surprising that in terms of income per capita these three regions ranked at the bottom of Italy. Sardinia and (more clearly) Sicily, being two islands and so more independent economic systems (with their own small regional capitals), ranked in the middle.

These disparities within southern Italy grew weaker during the first half of the XX century, particularly the 1938-1951 years, mostly because the less backward southern regions were more rapidly losing ground. By 1951, internal disparities had almost disappeared: Campania, that was still the first southern region, ranked (with 0.69) 17 points below the Marches, the last region of north-central Italy, and only 8 points above the southern average. During the second half of the XX century, Campania was bound to lose also its southern primacy: by 2001 it had become the last region, together with Calabria. Meantime, new hierarchies had risen within the «Mezzogiorno»: Abruzzi – the most remarkable case – from the last positions had reached the first one, gaining, from 1951 to 1991, something like 31 points over the national average<sup>8</sup>.

From the 1970s, the falling behind of southern Italy was offset at the national level by the rise of the North-East-Centre (Nec). As a whole this area had remained in the same position through all the previous years, roughly around the national average, hence following, at a distance, the growth of the North-West. Yet in this decade it became the real «engine» of the Italian economy: in only ten years (1971-1981) Emilia gained 15 points over the national average, the Marches 14, Veneto and Friuli 9. Quite steady during the eighties, Nec improved again its position – although slowly – in the nineties.

Within the Nec, Latium must be regarded as a particular case, similar to that of Campania. The region of Rome was the richest in 1891, yet it lost grounds up to 1951, and especially from 1911 to 1951, when it lost something like 40 points over the national average. Then it remained almost steady, with a marked improvement only during the 1980s. Its XIX century primacy seems to be attributable to a legacy of its role as an *ancien régime* capital<sup>9</sup>, the falling behind of the XX century can be due to the rise of the North-West and so to that of new economic capitals (Milan, first of all), the final recovery can be reconnected with the new role of Rome, the national capital of a more geographically diversified economy, no longer led by the industrial triangle.

<sup>8</sup> For this result regional policies from 1950 to 1992 played an important role [Felice 2003].

<sup>9</sup> This is not surprising. According to Carreras' estimates, by 1900 in Spain the region of Madrid had a income per capita 2,22 as big as the national average [Carreras 1990].

We could treat these trends of catching-up and falling behind from a different geographical perspective: as a rise of the eastern regions (Veneto, Emilia, the Marches, Abruzzi) and a relative decline of the western ones (Liguria, Latium, Campania, yet not Tuscany), especially from the second half of the XX century. Yet, it is uncertain how this different approach would be consistent through time and space (for example, Liguria and Latium followed different paths). However, whatever perspective we prefer, to understand the contemporary economic history of the Italian regions (and not only to map it), we should start by looking at their reciprocal ties before Unification, and then at the changes that followed the creation of the new national state. The new infrastructural networks played a vital role in these processes: the railways built in the second half of the XIX century, the great highways built between the fifties and the seventies of the XX century, which, apart from connecting the South with the North (as also the railways did), were much more effective in linking the East to the West, for example the Abruzzi to Rome. Thanks to them, Abruzzi and the Marches have been no longer peripheral area as on their respective pre-unitarian states, but gained a new status as central regions of the peninsula, quite close to northern Italy as well as to Rome. Campania progressively lost its attractiveness for the rest of the Meridione, whose regions, and mainly the eastern ones, began to lean toward the Centre-North. In the northern part of the peninsula a very thick network of infrastructural links took shape, well beyond the regions of the industrial triangle. Finally, Latium had to find a new role at the centre of the peninsula, among centrifugal forces which tended to change, through time, their strengths and direction.

At the end of this session, it could be useful to place the ranking of the Italian macro-areas within the international context. Table 2 shows per capita value added of many European and extra-European countries, alongside with that of the Italian North-West, Nec and Mezzogiorno, at purchasing power parity (PPP), from 1913 to 1998 (US=100).

Already in 1913, the industrial triangle (North-West) ranked only a little below the most developed European countries (from UK to Denmark); during the XX century its relative position improved, so that by the 1990s this area could reach one of the highest scores, at the same level as Switzerland and Denmark. Meanwhile, the Nec lived through an impressive catching-up process, reaching the top group by the end of the XX century: at present its income per capita almost equals that of the Netherlands and, outside Europe, is not far from that of Canada, Australia or Japan.

It is clear, from this table, that the southern regions failed to keep the pace. There were some improvements, but overall they were disappointing, at least compared with those of Portugal, Spain, or Ireland; Greece too, by 1998 the only UE country still below southern Italy, performed a little better.

Table 2. International comparisons of per capita value added at PPP, 1913-1998 (US=100)

	1913	1950	1973	1990	1998	Yearly growth rates		
						1913-50	1950-73	1973-98
United Kingdom	92.8	72.2	72.0	70.7	68.5	0.92	2.44	1.79
France	65.7	55.1	78.6	77.9	71.6	1.12	4.05	1.61
Germany	68.8	40.6	71.7	68.6	65.1	0.17	5.02	1.60
Belgium	79.6	57.1	72.9	74.1	71.1	0.70	3.55	1.89
The Netherlands	76.4	62.7	78.4	74.4	74.0	1.07	3.45	1.76
Switzerland	80.5	94.8	109.1	93.1	78.2	2.06	3.08	0.64
Austria	65.4	38.8	67.3	72.7	69.2	0.18	4.94	2.10
Denmark	73.8	72.6	83.6	79.5	80.9	1.56	3.08	1.86
Sweden	39.5	70.5	80.8	76.2	68.4	2.12	3.07	1.31
Norway	47.2	57.1	67.4	79.6	86.6	2.13	3.19	3.02
Finland	39.8	44.5	66.4	72.7	67.0	1.91	4.25	2.03
Ireland	n.a.	36.0	41.1	50.9	66.5	-	3.04	3.97
Greece	30.0	20.0	45.9	43.0	41.2	0.50	6.21	1.56
Portugal	23.5	21.6	44.0	46.7	47.3	1.39	5.66	2.29
Spain	42.5	25.1	52.4	52.6	52.1	0.17	5.79	1.97
Italy	48.4	36.6	63.8	70.3	65.0	0.85	4.95	2.07
<i>North-West</i>	60.0	55.6	81.7	87.2	80.6	1.40	4.17	1.91
<i>North-East-Centre</i>	47.9	38.1	66.4	78.0	73.5	0.98	4.95	2.48
<i>South and islands</i>	40.7	22.3	46.6	49.2	44.2	-0.02	5.77	1.78
Total Western Europe	65.5	48.0	69.1	68.9	65.6	0.76	4.08	1.78
Poland	n.a.	25.6	32.0	22.0	24.5	-	3.45	0.91
Czechoslovakia	39.5	36.6	42.2	36.7	30.5	1.40	3.08	0.67
Hungary	39.6	25.9	33.5	27.9	23.7	0.45	3.60	0.59
Former Yugoslavia	19.4	16.6	26.1	24.5	15.5	1.17	4.49	-0.11
Albany	n.a.	10.5	13.5	10.7	8.8	-	3.59	0.26
Romania	n.a.	12.4	20.8	15.2	10.6	-	4.80	-0.74
Bulgaria	n.a.	17.3	31.7	23.9	16.8	-	5.19	-0.57
Total Eastern Europe	28.8	22.2	29.9	23.4	20.0	0.89	3.79	0.37
Former USSR	28.1	29.6	36.3	29.6	14.2	1.76	3.36	-1.75
Turkey	n.a.	19.0	22.5	23.4	24.0	-	3.20	2.25
Tunisia	n.a.	11.7	13.3	14.4	15.3	-	3.04	2.57
Argentina	71.6	52.2	47.8	28.1	33.7	0.74	2.06	0.58
Brazil	15.3	17.5	23.3	21.2	20.0	1.97	3.73	1.37
Venezuela	20.8	78.0	63.7	35.8	32.8	5.30	1.55	-0.68
Chile	50.0	40.0	30.5	27.6	35.7	0.99	1.26	2.63
Mexico	32.7	24.7	29.0	26.3	24.3	0.85	3.17	1.28
Canada	83.9	77.8	82.9	81.6	75.2	1.40	2.74	1.60
Australia	107.8	78.4	76.5	73.4	74.6	0.73	2.34	1.89
Japan	26.2	20.1	68.5	80.9	74.7	0.89	8.05	2.34
China	10.4	4.6	5.0	8.0	11.4	-0.62	2.86	5.39
India	12.7	6.5	5.1	5.6	6.4	-0.22	1.40	2.91
<i>United States</i> <i>(1990 international dollars)</i>	5,301	9,561	16,689	23,214	27,331	1.61	2.45	1.99

Sources and notes: Maddison [2001]. For the Italian macro-areas see table 1; in these cases, the five benchmark years are 1911, 1951, 1971, 1991 and 2001 respectively. All data are at the historical borders.

### 3. Sectorial trends: agriculture, industry and services

Estimates of total value added can be disaggregated for the three economic sectors (agriculture, industry and services). From that we can derive the data of table 3, i.e. regional value added per worker for each of the three sectors, from 1891 to 2001. These figures can be regarded as an approximation of the productivity of labour (of course value added per hour worked would have been better, but data on hours were available only for the last decades), an indicator which can allow us a better understanding of the trends sketched out in the previous paragraph.

Table 3. Regional per worker value added in agriculture, industry and services, 1891-2001 (Italy=1)

	Agriculture					Industry					Services				
	1891	1911	1951	1971	2001	1891	1911	1951	1971	2001	1891	1911	1951	1971	2001
Piedmont	0.80	0.86	1.34	0.82	1.14	1.65	1.16	1.16	1.04	1.03	0.98	1.08	1.03	1.04	1.02
Aosta Valley			0.78	0.49	0.48			1.76	1.66	0.95			0.97	0.97	1.03
Liguria	0.71	1.05	1.11	1.36	1.16	2.46	1.48	1.56	1.16	1.13	1.22	1.23	1.45	0.96	1.06
Lombardy	0.73	0.91	1.36	1.28	1.81	1.28	1.13	1.18	1.02	1.09	1.27	1.21	1.11	1.08	1.09
<i>North-West</i>	<i>0.76</i>	<i>0.90</i>	<i>1.31</i>	<i>1.07</i>	<i>1.43</i>	<i>1.52</i>	<i>1.18</i>	<i>1.21</i>	<i>1.04</i>	<i>1.08</i>	<i>1.16</i>	<i>1.17</i>	<i>1.15</i>	<i>1.05</i>	<i>1.07</i>
Trentino-Alto Ad.	-	-	0.94	0.98	0.85	-	-	1.11	1.17	1.16	-	-	1.05	0.86	1.08
Veneto	0.71	0.88	0.97	1.15	1.24	1.18	0.98	1.02	0.87	0.93	0.89	0.87	0.99	1.10	1.00
Friuli	-	-	0.68	0.77	1.42	-	-	1.02	1.03	0.95	-	-	1.18	0.89	0.98
Emilia	1.18	1.24	1.39	1.45	1.24	1.20	1.04	0.99	1.00	1.10	0.91	0.91	1.02	1.02	1.01
Tuscany	1.03	0.93	1.01	1.02	0.88	1.12	0.88	0.93	0.96	0.98	1.01	0.99	1.00	1.04	1.00
The Marches	0.93	0.91	1.19	0.67	1.19	0.65	0.78	0.61	0.89	0.78	0.83	0.78	0.80	1.07	0.95
Umbria	1.26	1.07	1.13	0.65	1.11	0.88	0.99	0.97	1.00	0.93	0.89	0.84	0.79	0.90	0.93
Latium	1.27	1.50	1.02	1.31	0.86	1.27	1.32	0.91	0.99	1.18	1.47	1.24	1.02	0.98	1.08
<i>North-East-Centre</i>	<i>1.00</i>	<i>1.04</i>	<i>1.08</i>	<i>1.11</i>	<i>1.09</i>	<i>1.11</i>	<i>0.98</i>	<i>0.95</i>	<i>0.96</i>	<i>1.01</i>	<i>1.01</i>	<i>0.97</i>	<i>1.01</i>	<i>1.01</i>	<i>1.02</i>
Abruzzi	0.78	0.75	0.74	0.78	0.97	0.17	0.74	0.65	1.07	0.88	0.84	0.93	0.76	0.91	0.87
Campania	0.88	0.83	0.83	0.91	0.84	0.88	0.90	0.74	0.94	0.90	1.03	1.00	0.91	0.94	0.91
Apulia	1.62	1.10	0.82	0.85	0.72	0.25	0.73	0.72	0.96	0.77	0.88	0.95	0.94	0.97	0.88
Lucania	0.83	0.79	0.59	0.67	0.80	0.26	0.72	0.33	1.12	0.76	0.80	0.86	0.63	0.96	0.91
Calabria	0.91	0.83	0.62	0.78	0.83	0.17	0.49	0.37	0.75	0.82	0.64	0.78	0.61	0.98	0.86
Sicily	1.66	1.40	0.95	1.07	0.76	0.54	0.76	0.55	1.01	0.90	0.75	0.77	0.85	0.92	0.93
Sardinia	1.59	1.62	0.86	1.23	0.89	0.98	0.82	0.81	1.43	0.86	0.78	0.71	0.69	0.87	0.87
<i>South and islands</i>	<i>1.18</i>	<i>1.03</i>	<i>0.80</i>	<i>0.91</i>	<i>0.80</i>	<i>0.50</i>	<i>0.77</i>	<i>0.64</i>	<i>0.99</i>	<i>0.85</i>	<i>0.86</i>	<i>0.88</i>	<i>0.83</i>	<i>0.94</i>	<i>0.90</i>
Italy (2001 euros)	983	1,383	2,052	4,849	28,334	1,151	1,912	4,836	12,857	46,634	2,526	3,955	4,880	18,948	60,201

Sources: see table 1; employment data for 1891 and 1911 are taken from Vitali [1970].

Figures for agriculture are a bit problematic. In 1891 and 1911 southern Italy had a value added per worker higher than the rest of the country, North-West and Lombardy in particular. Yet if we consider land productivity (table 4), which is not directly linked to income per capita but better indicates the level of «wealth» which this sector can ensure to the all economy<sup>10</sup>, the picture changes. For what concerns production per hectare, in 1891 southern Italy was around the national average; yet already in 1911 its position had worsened, although some southern regions, Sicily, Apulia and Campania (who were also the most populated ones), managed to hold quite high scores. Indeed, as we knew from previous research, in this period some southern productions, mainly in Sicily (citrus fruits) [Lupo 1990] or Apulia (olive oil), succeeded in reaching a very high productivity, and in ensuring international markets; agriculture was also the sector determining the high total value added reached by

<sup>10</sup> I was unable to estimate total factor productivity, the most appropriate index, since data on capital are not available.

Apulia in 1891. Besides, from table 4 we see confirmed the existence of strong disparities among the southern regions.

Table 4. Regional gross saleable production per hectare, 1891 and 1911 (Italy=1)

	1891	1911		1891	1911		1891	1911
Piedmont	1.03	1.06	Veneto	0.74	1.22	Abruzzi	0.82	0.72
Liguria	0.84	1.30	Emilia	1.07	1.50	Campania	1.22	1.24
Lombardy	1.13	1.39	Tuscany	0.95	0.79	Apulia	1.30	0.99
			The Marches	1.02	1.07	Lucania	0.55	0.42
			Umbria	0.72	0.74	Calabria	0.89	0.79
			Latium	0.98	1.00	Sicily	1.72	1.21
						Sardinia	0.41	0.38
<i>North-West</i>	1.05	1.22	<i>North-East-Centre</i>	0.91	1.08	<i>South and islands</i>	1.03	0.85

Sources: my estimates from Federico [2003, 133] and Maic [1893; 1912].

Agriculture of the Nec varied likewise, with Emilia having by 1911 the most productive agriculture (per hectare), while Umbria ranked among the poorest. On the whole – both with reference to productivity of labour and land – by 1891 North-West was not particularly advanced. Yet this situation was about to change quickly during the XX century. Between 1891 and 1951, north-western per worker value added in agriculture rose from 0.76 to 1.31 (Italy=1). Overall, it seems clear from table 3 that there were some regions, basically in the Po Valley (Lombardy, Piedmont, but also Liguria, Emilia and, later, Veneto and Friuli), more able than others to gain from technological change (mechanization, fertilizers). These disparities could be easily explained by «classical» economics, in so far as technological investments are directly correlated with land productivity, which usually was higher in the northern plains. Anyway, probably for the falling behind of southern Italy such an explanation would be incomplete. It is worth noticing that by 2001 both Sicily and Apulia had become the regions with the lowest productivity per worker, while the Abruzzi (a very mountainous area) has almost reached the national average: it seems plausible that over such different results also cultural and institutional factors have had their weight.

Trend of industrial productivity is much less linear, and inversely specular to that in agriculture. In 1891 the North-South divide was very high. By this year there were four southern regions (Abruzzi, Calabria, Apulia and Lucania) with a productivity per worker that was, on the average of all the industrial subsectors, at best one fourth of the national level; at the upper end, we can already detect a clear supremacy of the three north-western regions, even though the nearby ones (Veneto, Emilia, Tuscany), and Latium too, ranked quite high; in the middle there were Sardinia, Umbria and Campania. During the following twenty years there were some improvements of the most backward regions, the reasons of which (mass emigration) we have already mentioned. If by 1951 the North-South divide had grown bigger once again, by 1971 it had almost disappeared. Regional policy, and in particular the top-down plants of heavy industries funded by the Cassa per il Mezzogiorno, must have played a very important role in this catching-up. Yet during the seventies most of these plants faced severe hardships, following the oil crisis but also a short-sighted industrial policy; as a consequence of this, the gap slowly reopened. Finally, we should notice that also the Nec regions (Veneto, the Marches, Friuli, Umbria, as well as Abruzzi, but not of Emilia), which during the last three decades enjoyed the highest economic growth, share quite a low industrial productivity, because of their specialization toward lighter industries (textile, furniture, tools, pottery, light industrial machinery).

In services, from 1891 to 1951 regional disparities were weaker than in industry. Three kinds of explanations can be found. First, services include the public sector, where value added per worker, at least as far as central administration is concerned, is evenly distributed among the regions. Second, here on average technology (and the resulting gap) counts less. Last but not least, the great south-central regions (Latium, Campania, Apulia, Sicily) had a relatively high urbanization rate, and together with it a quite big tertiary sector. In some cases this high urbanization rate was due to an agricultural structure based on day labourers (especially in Apulia, while the tenancy system – entailing more self-consumption – prevailed in central Italy), in others – as we have noticed (Naples) – seemed to be rather a legacy of a previous *ancien régime* hierarchy. It is not surprising that North-South divide increased slowly during the first half of the XX century, yet remaining overall modest.

As we know, usually in every country the three sectors show, on average, different levels of productivity per worker. Agriculture has the lowest one, although improving with economic development. Industry ranks in the middle, but often at the beginning of industrialization is closer to agriculture, as is the case of Italy at least for the period prior to world war I.

Table 5 shows the percentages of employment by sector, for benchmark years from 1891 to 2001. Italy is not different from many other developed countries, but the fall of agricultural employment occurred mostly during the second half of the XX century, as a result of the rise of the industrial sector and later of services. From the 1970s the share of industrial workers began to decrease, while services almost reached two-third of the total employment; so, by the end of the XX century employment in services had taken the place agriculture had at the end of the previous century.

Table 5. Regional employment by sector, 1891-2001 (%)

	Agriculture					Industry					Services				
	1891	1911	1951	1971	2001	1891	1911	1951	1971	2001	1891	1911	1951	1971	2001
Piedmont	63.19	55.36	34.81	13.80	3.68	20.92	27.36	39.11	50.43	38.18	15.90	17.29	26.07	35.77	58.14
Aosta Valley			54.95	22.58	5.67			27.15	34.54	22.90			17.89	42.88	71.43
Liguria	45.72	35.09	25.81	10.78	3.51	25.08	32.32	29.86	32.42	23.08	29.20	32.59	44.33	56.80	73.41
Lombardy	52.20	43.32	23.22	6.35	1.88	30.66	37.63	46.26	54.65	39.89	17.14	19.05	30.52	39.00	58.23
<i>North-West</i>	<i>55.88</i>	<i>47.02</i>	<i>27.56</i>	<i>9.22</i>	<i>2.56</i>	<i>26.15</i>	<i>33.02</i>	<i>41.87</i>	<i>50.75</i>	<i>37.75</i>	<i>17.97</i>	<i>19.96</i>	<i>30.58</i>	<i>40.03</i>	<i>59.69</i>
Trentino-Alto Ad.	-	(66.50)	49.27	19.73	8.27	-	(15.50)	21.64	29.05	26.72	-	(18.00)	29.08	51.22	65.01
Veneto	62.97	61.05	48.60	17.07	4.22	19.76	21.47	25.50	42.59	40.65	17.27	17.48	25.90	40.35	55.13
Friuli	-	(51.90)	38.98	14.49	3.23	-	(25.20)	28.71	37.66	32.51	-	(22.90)	32.31	47.85	64.26
Emilia	61.12	58.29	47.74	18.71	5.64	21.15	24.18	24.13	39.04	35.92	17.73	17.53	28.13	42.25	58.44
Tuscany	56.39	50.86	41.00	13.04	3.87	24.83	30.78	30.75	42.98	34.08	18.78	18.36	28.25	43.98	62.05
The Marches	67.70	67.39	55.86	26.75	3.97	18.94	19.21	21.90	35.15	40.84	13.36	13.40	22.24	38.10	55.19
Umbria	72.90	69.51	55.64	23.38	4.71	14.50	17.48	21.59	36.12	32.78	12.61	13.01	22.77	40.50	62.51
Latium	53.02	44.86	32.84	10.00	3.64	18.43	23.03	20.54	26.30	19.71	28.56	32.11	46.62	63.70	76.65
<i>North-East-Centre</i>	<i>61.16</i>	<i>57.48</i>	<i>44.47</i>	<i>16.04</i>	<i>4.46</i>	<i>20.68</i>	<i>23.94</i>	<i>24.87</i>	<i>36.78</i>	<i>32.84</i>	<i>18.16</i>	<i>18.58</i>	<i>30.66</i>	<i>47.19</i>	<i>62.70</i>
Abruzzi	72.53	77.17	69.31	36.40	6.82	18.45	12.95	13.05	25.99	32.57	9.02	9.88	17.65	37.61	60.61
Campania	52.37	53.38	46.59	25.69	6.86	25.63	23.33	20.93	29.59	24.36	22.01	23.30	32.48	44.72	68.78
Apulia	59.71	62.99	64.70	39.88	11.74	24.59	20.10	13.36	24.08	26.09	15.70	16.92	21.93	36.04	62.17
Lucania	72.64	76.68	75.24	43.65	10.80	17.33	12.79	10.99	23.80	34.55	10.03	10.54	13.77	32.54	54.65
Calabria	55.29	67.33	66.39	38.76	12.04	33.10	20.56	15.31	25.56	19.43	11.60	12.11	18.31	35.67	68.53
Sicily	51.02	52.71	56.43	30.28	9.55	27.58	22.77	16.89	26.05	19.92	21.40	24.52	26.69	43.68	70.53
Sardinia	61.00	58.97	56.52	27.02	8.49	19.09	20.90	17.51	26.93	23.04	19.91	20.13	25.97	46.05	68.47
<i>South and islands</i>	<i>57.42</i>	<i>60.45</i>	<i>59.17</i>	<i>32.76</i>	<i>9.21</i>	<i>25.28</i>	<i>20.57</i>	<i>16.34</i>	<i>26.46</i>	<i>24.26</i>	<i>17.30</i>	<i>18.98</i>	<i>24.49</i>	<i>40.78</i>	<i>66.53</i>
Italy (2001 euros)	58.22	55.39	44.55	18.89	5.19	24.00	25.47	26.83	38.07	31.97	17.78	19.13	28.62	43.05	62.84

Sources: see tables 1 and 3; Zamagni [1987].

The trend of regional disparities and, moreover, some unlinear paths are worth being noticed. Still by 1891, southern Italy recorded a share of industrial employment slightly higher

than the Italian average. Stefano Fenoaltea [2003a; 2003b; 2006] holds that in the previous decades this kind of disparity could have been even stronger, also in terms of value added. According to him, by 1871 the industrialization divide ran between the western and the eastern regions of the peninsula, rather than between the northern and the southern ones: the most industrialized region was Lombardy, with an index of 1.36 (Italy=1), followed by Sicily (1.10), then by Piedmont and Liguria (1.07) and finally by Veneto, Tuscany, Latium and Campania (all between 0.95 and 1.01) [2003a, 172].

However, for most southern regions talking in terms of an «industrial» workforce, as employed in modern factories, would be misleading. With the partial exception of Campania, in most cases they worked as craftsmen, or as miners particularly in Sicily and Sardinia. On the other side, we know that Campania faced a de-industrialization process during the decades following Unification, also due to the free-trade policy of the new Italian state [cfr. De Rosa 1968; 1973]. As we can see, this process did not stop through the first half of the XX century. Meantime, already in 1911 the industrial triangle had taken its shape, encompassing Lombardy, Piedmont and Liguria; in just twenty years, from 1891 to 1911, Campania had slipped down from the second to the sixth position, behind Tuscany and Emilia too.

By 1951, in southern Italy the industrial share of workforce was just 16% of the total, while the agricultural one was around 60%. The reasons of the southern falling behind in terms of income per capita must be sought in this immobility. During the same period, in northern Italy the share of agricultural workers fell from 56 to 28%, in the Nec area from 61 to 44%.

Eventually, after world war II this change occurred also in southern Italy. Yet on the whole this area continued to hold a share of agricultural employment higher than the rest of the country; and this was true also for the region, the Abruzzi, where catching-up in the second half of the XX century has been most impressive. In the Centre-North, we should stress that, if by 1971 Lombardy and Piedmont were still the most industrialized regions, by 2001 they had been overcome by Veneto and the Marches (the latter in 1951 had ranked almost 5 points below the national average).

So we have had more than one shift in the industrial workforce rankings by region. Conversely, services have shown a more steady trend: here in 2001 the two leading regions were the same as in 1891, Latium and Liguria. However, by 2001 there was no Italian region with a share of service workforce below 50%. We can see how in 2001 some southern regions (Sicily, Campania, Calabria) have reached a very high share, but this is no longer an unquestioned sign of development; on the contrary, in most of these cases service jobs are a poor and precarious substitute for a declining industrial economy.

#### 4. Life expectancy and education

This paragraph presents and discusses the two components of Hdi beside income, that is life expectancy and education. A regional Hdi for the Italian regions, for benchmark years from 1891 until 2001, will be discussed in the next paragraph.

Regional data on life expectancy shown in table 6 have been made available to me by Leandro Conte, Giuseppe Della Torre and Michelangelo Vasta, who had estimated them in a working paper [Conte, Della Torre, Vasta 2001], where however they showed only the macro-areas totals. Their paper has remained as yet unpublished. We should stress that life expectancy refers to a biological parameter whose value remains basically unchanged through time and places, hence allowing more reliable comparisons both across countries and historical periods. It has a huge descriptive strength: as we can see, the exceptional Italian development from 1871 to 2001 can be summarized by a life expectancy rising, on average, from 33 to almost 80 years.

Table 6. Regional disparities in life expectancy, 1871-2001 (Italy=1)

	1871	1891	1911	1938	1951	1961	1971	1981	1991	2001
Piedmont	1.121	1.117	1.080	1.042	1.012	0.998	0.992	0.998	0.999	0.998
Aosta Valley					0.948	0.968	0.971	0.984	0.985	0.984
Liguria	1.079	1.059	1.057	1.064	1.043	1.026	1.012	0.998	0.994	0.998
Lombardy	1.012	1.046	0.957	0.980	0.984	0.984	0.988	0.990	0.996	0.999
<i>North-West</i>	<i>1.054</i>	<i>1.056</i>	<i>1.008</i>	<i>1.012</i>	<i>1.000</i>	<i>0.994</i>	<i>0.992</i>	<i>0.993</i>	<i>0.996</i>	<i>0.998</i>
Trentino-Alto Ad.	-	-	-	1.043	0.979	0.983	0.988	0.991	1.002	1.010
Veneto	1.063	1.127	1.078	1.032	1.019	1.003	0.998	0.992	1.005	1.008
Friuli	-	-	-	1.043	1.078	1.005	0.988	0.984	0.993	1.002
Emilia	0.994	1.023	1.078	1.053	1.036	1.016	1.011	1.006	1.004	1.005
Tuscany	0.937	1.059	1.092	1.062	1.041	0.996	1.019	1.015	1.012	1.008
The Marches	1.033	1.048	1.109	1.043	1.028	1.025	1.028	1.020	1.019	1.019
Umbria	1.106	1.038	1.105	1.048	1.038	1.026	1.020	1.016	1.011	1.009
Latium	0.879	1.008	1.024	1.011	1.012	1.010	1.005	1.004	0.998	0.996
<i>North-East-Centre</i>	<i>0.997</i>	<i>1.061</i>	<i>1.079</i>	<i>1.041</i>	<i>1.029</i>	<i>1.008</i>	<i>1.008</i>	<i>1.004</i>	<i>1.005</i>	<i>1.005</i>
Abruzzi	0.927	0.911	1.034	1.007	0.994	1.016	1.021	1.020	1.014	1.011
Campania	0.927	0.911	0.882	0.972	0.964	0.975	0.976	0.977	0.981	0.982
Apulia	0.927	0.911	0.914	0.933	0.958	0.990	1.003	1.006	1.007	1.002
Lucania	0.927	0.911	0.958	0.904	0.907	0.995	1.013	1.022	1.017	1.003
Calabria	0.927	0.911	0.999	0.979	0.977	1.010	1.016	1.018	1.005	1.003
Sicily	1.073	0.926	0.895	0.978	0.973	1.004	0.996	1.005	0.996	0.993
Sardinia	0.955	0.957	0.985	0.976	1.004	1.022	1.011	1.017	1.004	1.000
<i>South and islands</i>	<i>0.964</i>	<i>0.919</i>	<i>0.927</i>	<i>0.969</i>	<i>0.970</i>	<i>0.997</i>	<i>0.998</i>	<i>1.001</i>	<i>0.998</i>	<i>0.995</i>
Italy (years)	33.10	39.30	44.13	58.09	65.51	70.06	72.05	74.04	76.94	79.80

Sources: see text. For 2001 my calculations from Istat [2006b].

On the whole, over time regional disparities in life expectancy showed a tendency to decrease. North-South divide is partly confirmed, yet regional rankings are different. Campania, for example, in terms of life expectancy was (and still is) the weakest southern region, while it was the first one according to income per capita; also Sicily and Apulia ranked a bit lower. This was partially due to their higher urban rate; not by chance, Latium too had a lower score compared with income; moreover, we should notice that Lombardy fell down (in relative terms) during some of the very years of its industrial and economic rise, from 1891 to 1911. Hence, in some cases life expectancy and income per capita seem to be inversely correlated; at least, as long as economic growth coincides with the onset of industrialization and of the factory system, and with the expansion of polluted cities. We can see, however, that in some regions economic growth and longevity have been more able

to proceed together: in the Marches, Abruzzi, Umbria, Emilia, Tuscany, Veneto, Trentino. These regions have a lower urban rate, together with an economy resting on small plants and light industries, although their better longevity rates can be attributable also to other factors: the quality of the health service, more adequate environmental policies, a higher level of civicness.

It is worth noticing that in terms of life expectancy there was a catching-up of southern Italy towards the Centre-North. During the second half of the XX century the gap was completely filled out, so that southern Italy could rank roughly at the same level as the North-West; however, in the last two decades there has been a new falling behind also in terms of life expectancy – not only in income. Concerning longevity, if on the whole the southern story was a successful one, this was due mostly to the fact that from the second half of the XIX century medical improvements (vaccines, antibiotics), a better diet, and safer hygienic practices spread throughout the country (thanks to Unification), although with some delay in southern Italy, which in fact from 1871 to 1891 was still falling behind; over time this had huge and unprecedented benefits especially for the most backward regions, and in particular for what regards the decrease of infant mortality. From the second half of the XX century, also public expenditure can have played an important role; not by chance, during the last decades in southern Italy consumption per capita was slightly higher than production, and much higher for the basic needs [cfr. Svimez 2002, 79; 2003, 99].

As noticed before, by 2001 life expectancy disparities ran between the Nec regions (excluding Latium, yet including Abruzzi) and both the north-western and the southern ones. It is reasonable to suppose that when economic development has reached a level where basic needs are generally satisfied, the relevance of further income advancements to the fundamental biological parameter of each human being – longevity – tends to decrease; then other factors, such as environmental conditions, social and health infrastructures, the number and quality of human relationships, in other words what concerns the quality of life (and the quality of development), become more important. This simple fact that in our developed societies income and the quality of life are no longer undisputedly correlated makes for an integrated approach to the measurement of the standard of living, an approach not exclusively confined to monetary indices.

Building an index of education is a more difficult task. Here I am going to discuss and introduce some changes over the standard index commonly used for Hdi. The first change is due to «technical» reasons. According to its standard formula, one of the components of education is the gross enrolment ratio, that is the number of students registered, expressed as a percentage of the population included in the age bracket relative to the levels of primary, secondary, tertiary school and university attendance. For a comparison among the Italian regions, this formula would entail two kinds of problems: 1), in the elementary and secondary school (the compulsory ones), it would not consider school dispersion, that was quite hard to quantify, especially for the past, but higher in the Mezzogiorno; 2), with regard to university attendance it would not account for interregional mobility, which has grown quite notably during the last decades, usually from the southern regions to the northern ones, yet also from the smallest to the most populated ones. The use of the per capita years of schooling instead of the gross enrolment ratio could overcome both these problems, yet the necessary regional data<sup>11</sup> are recorded by the population censuses only from 1951 onwards [Istat 1957;

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<sup>11</sup> These are divided in five different groups: holders of university degree, of tertiary school diploma, of secondary school certificate, of primary school certificate, and literates without any certificate. In order to estimate the years of schooling, to each person of these groups are assigned, respectively, 18, 13, 8, 5 and 2 years of schooling.

1968; 1975; 1985; 1995; 2005]; so for the previous years we are forced to resort to the gross enrolment ratio, with the caveats we have mentioned (at that time, however, university inter-regional mobility counted much less than today).

The second change comes from a wider rethinking about the way to build the educational component, in order to have a Hdi comparable across different historical periods. As we said before, the standard formula of the educational component is the weighted mean of two indices, the adult literacy rate and the gross enrolment ratio; these two variables are weighted at 2/3 and 1/3, respectively, of the total. For historical comparisons, holding these weights as fixed through all the periods here could be considered misleading. As we know, during the XX century higher education spread progressively through all the developed countries, while all of these countries succeeded in achieving very high literacy rates. Hence, historical comparisons should take into account that the real weight of these two variables changed through time; nowadays, for example, comparing Italian regions according to the literacy rate would be a trivial task.

To have an idea of how great in the last century the Italian advancements were, we can take a look at table 7, showing regional data on education and literacy for benchmark years from 1871 up to 2001.

Table 7. Some literacy and education indices for the Italian regions, 1871-2001

	Illiteracy rate					Gross enrolment ratio			Tertiary and university enrolment ratio			Per capita years of schooling		
	1871	1891	1911	1951	2001	1871	1911	1938	1951	1971	2001	1951	1971	2001
Piedmont														
Aosta Valley	42.30	23.89	11.02	2.50	0.72	11.8	13.8	41.7	5.83	21.86	62.74	5.08	5.49	8.62
Liguria	56.30	34.36	17.01	4.14	0.60	8.3	13.7	48.0	9.76	31.13	72.25	5.12	5.86	9.02
Lombardy	45.20	28.26	13.43	2.64	0.51	10.4	13.6	43.5	6.08	22.29	64.07	5.17	5.62	8.90
<i>North-West</i>	<i>45.30</i>	<i>27.28</i>	<i>13.00</i>	<i>2.80</i>	<i>0.58</i>	<i>10.7</i>	<i>13.7</i>	<i>43.6</i>	<i>6.51</i>	<i>23.05</i>	<i>64.26</i>	<i>5.13</i>	<i>5.61</i>	<i>8.83</i>
Trentino-Alto Ad.	-	-	-	0.87	0.28	-	-	56.0	2.78	16.49	49.53	5.08	5.73	8.79
Veneto	64.70	43.75	25.16	6.39	0.54	6.1	13.3	44.7	4.05	22.67	61.29	4.60	5.28	8.58
Friuli	-	-	-	4.13	0.32	-	-	53.5	3.67	21.07	78.28	5.22	5.72	8.96
Emilia	71.90	54.23	32.73	8.06	0.70	5.6	13.4	42.2	5.08	31.80	85.66	4.62	5.23	8.72
Tuscany	68.10	54.64	37.41	10.79	0.80	5.9	10.6	45.5	5.57	30.87	80.16	4.38	5.16	8.57
The Marches	79.00	68.04	50.75	13.82	0.86	4.4	10.0	42.7	4.06	29.76	81.31	4.24	4.82	8.52
Umbria	80.10	66.65	48.61	13.95	1.11	4.7	9.9	41.1	3.95	38.39	85.55	4.13	4.91	8.70
Latium	67.70	50.49	33.21	9.89	0.92	3.5	12.1	45.5	10.71	34.50	86.79	4.77	5.85	9.40
<i>North-East-Centre</i>	<i>69.80</i>	<i>53.01</i>	<i>34.27</i>	<i>8.67</i>	<i>0.72</i>	<i>5.4</i>	<i>10.7</i>	<i>45.1</i>	<i>5.48</i>	<i>29.13</i>	<i>77.50</i>	<i>4.61</i>	<i>5.38</i>	<i>8.83</i>
Abruzzi	84.80	74.99	57.59	19.80	1.95	4.5	8.8	40.5	3.00	32.22	76.30	3.81	4.64	8.46
Campania	80.00	69.98	53.66	22.56	2.77	5.3	8.2	40.5	7.00	30.00	66.32	3.62	4.69	8.25
Apulia	84.50	74.62	59.39	23.61	2.70	3.4	8.1	33.4	4.15	26.46	60.39	3.44	4.49	8.00
Lucania	88.00	80.14	65.26	29.08	4.16	3.0	6.8	32.7	2.17	23.54	57.24	3.12	4.13	8.09
Calabria	87.00	81.77	69.62	32.10	4.74	3.1	6.7	32.1	2.98	23.43	61.82	2.97	4.23	8.14
Sicily	85.30	75.86	58.00	24.29	2.83	3.3	8.2	36.8	5.67	30.79	65.57	3.51	4.50	8.05
Sardinia	86.10	73.85	57.96	21.59	1.94	4.8	8.5	38.8	4.57	28.03	69.47	3.37	4.61	8.19
<i>South and islands</i>	<i>84.10</i>	<i>74.79</i>	<i>58.56</i>	<i>24.16</i>	<i>2.87</i>	<i>4.0</i>	<i>8.1</i>	<i>36.9</i>	<i>4.96</i>	<i>28.67</i>	<i>65.18</i>	<i>3.47</i>	<i>4.53</i>	<i>8.15</i>
Italy	68.80	54.80	37.62	12.74	1.45	6.3	10.5	41.7	5.54	27.36	69.16	4.33	5.15	8.59

Sources: for illiteracy rate and enrolment ratio Zamagni [1978b] Istat [1939; 1941; 1954; 1972; 2005]. For per capita years of schooling my estimates from Istat (see text). See Vasta [1999, 1052-1053] for a regional picture of literacy rates by gender, from 1861 to 1981.

In 1871 southern regions had an illiteracy rate far higher than the rest of the country, particularly higher than the north-western regions. We also have to notice that Italy as a whole was in a dismal situation. Between 1859 and 1911 the new Italian state progressively raised and enforced school obligation, although the new laws proved less effective in the South. However, literacy improved, also in the South. Some authors hold that in order to start modern economic growth a literacy rate of at least 40% is needed [Bowman and Anderson 1963;

Sandberg 1982; Nuñez 1990]. North-western regions had already passed this threshold by the middle of the XIX century; Nec regions reached it between 1871 and 1891, while southern Italy only at the beginning of the XX century. Illiteracy rates kept on falling throughout the XX century, although southern Italy remained behind; within it, Campania lost its relative advantage, while once again Abruzzi improved faster. Although by 2001 southern illiteracy rate was still twice the national average, absolute differentials had become too small to be of any use for approximating regional disparities of education.

Regional disparities in the gross enrolment ratio were also very high at the beginning. It is worth stressing that while southern regions kept on lagging behind through the first half of the XX century, Nec regions improved much more quickly, outperforming the north-western regions already during the inter-war years with reference to the compulsory school.

From 1951, we can have reliable estimates of the per capita years of schooling. By this year, there was still a strong divide between southern Italy and the rest of the country, especially the North-West. Yet during the second half of the XX century this picture changed, so that southern Italy managed to fill most of its gap; once again, we can see that Abruzzi has firmly become the most developed among the southern regions. The Nec regions too converged towards the north-western ones, succeeding in reaching them by 2001. Yet within the North-East-Centre we have different paths. If we look at the tertiary school and university enrolment ratios, in the last decades Veneto has been clearly falling behind (as well as, in the North-West, Lombardy and Piedmont); as a consequence of this, by 2001 in terms of per capita years of schooling Veneto has ended up slightly below the national average (while during the period prior to world war I it held the top of the Nec regions). Conversely, tertiary school and university enrolment ratios of the central regions have grown very high, by 2001 well above 80 per cent.

Because of the changes and improvements we have outlined, we should give to the components of education weights variable according to the different historical periods. The literacy rate is given a weight of 1/1 in 1871, 2/3 in 1891 and 1911; in these two years the remaining 1/3 is given to the gross enrolment ratio, according to the standard formula. In 1938 the literacy rate is given a weight of 55%, the gross enrolment ratio of 45%. By 1951 literacy rate has fallen to 50%, on a par with per capita years of schooling. Hence, every ten years the literacy rate loses 5% of its weight in favour of the years of schooling: by 2001 the weight of the former is just 1/4. The resulting estimates are shown in table 8.

On the whole, regional disparities trends are in line with those which can be derived from table 7. Unlike income, from 1871 to 1951 southern Italy succeeded in filling most of its gap, and the Nec regions improved too. Southern catching-up went on also during the second half of the XX century, although at a slower pace in the last two decades.

By 2001 North-West and Nec reached roughly the same level, yet individual regions ranked differently. Thanks to their economic strength, that attracted qualified workers, Latium and Lombardy had very high scores. Also some other northern regions (Liguria, Friuli, Emilia) were in a good position, while Piedmont, Veneto and Tuscany were placed around the national average. In central Italy, it is noticeable the rise of the Marches and – even more – of Umbria.

Table 8. Regional disparities in education, 1871-2001 (Italy=1)

	1871	1891	1911	1938	1951	1961	1971	1981	1991	2001
Piedmont					1.145	1.096	1.055	1.027	1.017	1.005
Aosta Valley	1.849	1.662	1.389	1.094	1.106	1.079	1.036	1.023	1.023	1.007
Liguria	1.401	1.376	1.322	1.146	1.140	1.118	1.098	1.066	1.056	1.040
Lombardy	1.756	1.523	1.357	1.111	1.155	1.106	1.072	1.052	1.045	1.030
<i>North-West</i>	<i>1.753</i>	<i>1.559</i>	<i>1.365</i>	<i>1.111</i>	<i>1.149</i>	<i>1.104</i>	<i>1.070</i>	<i>1.046</i>	<i>1.038</i>	<i>1.024</i>
Trentino-Alto Ad.	-	-	-	1.262	1.154	1.099	1.088	1.047	1.040	1.021
Veneto	1.131	1.234	1.222	1.088	1.067	1.030	1.029	1.010	1.010	1.002
Friuli	-	-	-	1.188	1.152	1.095	1.083	1.047	1.043	1.035
Emilia	0.901	1.019	1.144	1.041	1.060	1.038	1.019	1.015	1.020	1.013
Tuscany	1.022	0.932	1.005	1.057	1.016	1.011	1.005	1.002	1.003	1.000
The Marches	0.673	0.727	0.844	0.989	0.983	0.977	0.961	0.983	0.990	0.996
Umbria	0.638	0.776	0.864	0.971	0.970	0.975	0.970	0.995	1.001	1.011
Latium	1.035	1.088	1.098	1.056	1.066	1.082	1.088	1.079	1.073	1.072
<i>North-East-Centre</i>	<i>0.968</i>	<i>1.027</i>	<i>1.042</i>	<i>1.069</i>	<i>1.055</i>	<i>1.040</i>	<i>1.035</i>	<i>1.027</i>	<i>1.027</i>	<i>1.023</i>
Abruzzi	0.487	0.599	0.733	0.917	0.899	0.906	0.925	0.951	0.966	0.988
Campania	0.641	0.712	0.756	0.904	0.861	0.912	0.925	0.955	0.957	0.968
Apulia	0.497	0.580	0.691	0.809	0.834	0.882	0.904	0.926	0.938	0.946
Lucania	0.385	0.495	0.587	0.758	0.766	0.812	0.845	0.891	0.908	0.950
Calabria	0.417	0.449	0.537	0.735	0.731	0.800	0.850	0.903	0.914	0.953
Sicily	0.471	0.576	0.709	0.841	0.839	0.884	0.901	0.927	0.933	0.949
Sardinia	0.446	0.627	0.719	0.885	0.838	0.891	0.921	0.945	0.953	0.965
<i>South and islands</i>	<i>0.510</i>	<i>0.599</i>	<i>0.700</i>	<i>0.846</i>	<i>0.835</i>	<i>0.882</i>	<i>0.904</i>	<i>0.934</i>	<i>0.942</i>	<i>0.958</i>
Italy (absolute figures)	0.312	0.333	0.451	0.641	0.653	0.682	0.688	0.749	0.814	0.890

Sources: my estimates from Maic [1893], Istat [1963; 1981; 1982; 1991; 1992; 1996] and from the sources cited in the previous table.

## 5. The human development index

Among the economists, the use of Hdi has become widespread in the analysis of under-developed countries [Anand, Ravallion 1993; Streeten 1994; Ranis, Stewart, Ramirez 2000]; yet this was not the case in economic history, in order to compare historical national performances, or to test the long term relationship between growth and well-being. In this field the most important work is a paper by Nicholas Crafts [1997], where its author estimated the Hdi of the main industrialized countries for benchmark years from 1870 up to 1973. As explained above, the methodology of the regional Hdi shown in table 9 partially differs from that of Crafts, since in the former education has been built giving to its components variable weights. It is true that the possible better reliability of this kind of Hdi runs against its international comparability (at least at the present stage of research), yet this should not be a main concern for this work, whose primary aim is to compare interregional disparities within Italy.

Unlike income per capita, Hdi is a normalized index, whose values can vary from 0 to 1. In order to build each one of the three component indices, we resort to a quite simple formula:

$$\text{Index} = \frac{\text{actual } x_i \text{ value} - \text{minimum } x_i \text{ value}}{\text{maximum } x_i \text{ value} - \text{minimum } x_i \text{ value}}$$

In the case of Gdp per capita, its minimum and maximum values are the two threshold incomes of 1990 US\$ 100 and 40,000 respectively. This component index is expressed in logarithmic form, because of the decreasing yields in the transformation of income into well-being. In the case of life expectancy, the two thresholds are 25 and 85 years respectively.

In the case of education, literacy rates and gross enrolment ratios have already a natural variation between 0 and 100, and so they do not need to be normalized. Yet the following component index would tend to be very close to 100 in most developed countries, and this, as we have seen, would also be the case for the Italian regions. Our different methodology, giving a lighter weight to the literacy rates for the most recent years, entails lower scores and a higher variability too, which probably can better approximate regional disparities. In order to build the index of per capita years of schooling, these have been normalized on a scale between 0 and 10.

Lastly, the three component indices – resources, longevity and education – have been weighted each at 1/3 of the total.

Although income disparities followed an opposite trend, Hdi North-South divide grew smaller from 1891 until world war II, mostly thanks to its educational component. Southern Italy catching-up went on up to the seventies, but it almost stopped in the last two decades. In 1891 the north-western regions were by far the most developed; yet during the following decades they lived through a remarkable relative decline, with the exception of the 1938-1951 years. By the end of the XX century, on average the North-West ranked almost at the same level as the Nec. By 2001, the top Hdi region was Latium, followed by Trentino and then by Lombardy. This region, along with Liguria, already in the seventies had lost its primacy, while Piedmont had lost it between 1911 and 1938, and by 2001 was seventh. The

fourth and fifth positions were held by two other Nec regions, Emilia and Friuli, the sixth one by Liguria.

Table 9. Regional Hdi disparities in Italy, 1891-2001 (Italy=1)

	1891	1911	1938	1951	1961	1971	1981	1991	2001
Piedmont	1.327	1.224	1.095	1.099	1.022	1.029	1.019	1.016	1.012
Aosta Valley				1.054	1.028	1.020	1.019	1.013	1.010
Liguria	1.256	1.214	1.146	1.123	1.080	1.050	1.029	1.027	1.020
Lombardy	1.252	1.143	1.067	1.089	1.042	1.040	1.031	1.032	1.028
<i>North-West</i>	<i>1.269</i>	<i>1.177</i>	<i>1.087</i>	<i>1.096</i>	<i>1.041</i>	<i>1.038</i>	<i>1.027</i>	<i>1.027</i>	<i>1.023</i>
Trentino-Alto Ad.	-	-	1.121	1.053	1.047	1.023	1.021	1.022	1.031
Veneto	1.132	1.101	1.038	1.039	1.018	1.009	1.007	1.015	1.015
Friuli	-	-	1.116	1.114	1.038	1.021	1.015	1.021	1.022
Emilia	1.037	1.094	1.054	1.059	1.027	1.024	1.028	1.023	1.022
Tuscany	1.040	1.053	1.062	1.040	1.017	1.017	1.018	1.012	1.011
The Marches	0.913	0.967	1.001	1.003	1.016	0.998	1.010	1.008	1.010
Umbria	0.946	0.988	1.017	1.009	1.005	0.998	1.007	1.006	1.008
Latium	1.111	1.098	1.049	1.043	1.032	1.037	1.032	1.033	1.032
<i>North-East-Centre</i>	<i>1.054</i>	<i>1.065</i>	<i>1.051</i>	<i>1.045</i>	<i>1.024</i>	<i>1.020</i>	<i>1.020</i>	<i>1.020</i>	<i>1.020</i>
Abruzzi	0.719	0.858	0.924	0.918	0.988	0.973	0.985	0.990	0.993
Campania	0.829	0.833	0.933	0.903	0.948	0.940	0.948	0.953	0.956
Apulia	0.797	0.808	0.863	0.885	0.937	0.952	0.958	0.965	0.960
Lucania	0.697	0.772	0.806	0.801	0.922	0.939	0.952	0.954	0.967
Calabria	0.672	0.771	0.824	0.831	0.927	0.934	0.950	0.942	0.960
Sicily	0.787	0.803	0.901	0.885	0.941	0.943	0.958	0.953	0.956
Sardinia	0.828	0.864	0.929	0.911	0.956	0.971	0.970	0.969	0.974
<i>South and islands</i>	<i>0.778</i>	<i>0.816</i>	<i>0.894</i>	<i>0.886</i>	<i>0.945</i>	<i>0.947</i>	<i>0.957</i>	<i>0.959</i>	<i>0.961</i>
Italy (absolute figures)	0.3275	0.4132	0.5719	0.6228	0.7255	0.7415	0.7879	0.8379	0.8895

Sources and notes: see text.

It must be taken into account that generally Hdi has a tendency to flatten disparities over time (probably this is its worst «technical» problem). It could be the case for the Italian regions too, although our different methodology in the building of the educational indicator should partially compensate for this. However, it seems noticeable the result of regional human development convergence during the decades following Unification, while the income North-South divide was widening. During the last decades of the XX century southern improvements were much slower, so that by 2001 there was still a relatively significant difference with the Centre-North. Meanwhile, some Nec regions had overcome the north-western ones, Piedmont in particular.

Although limited to macro-areas – and with less accurate regional data – in their preliminary work Conte, Della Torre and Vasta [2001] had reached approximately the same conclusions. The three authors had made use of quite reliable national data. Since, unlike mine, their methodology was the same as the one adopted in most international studies [Crafts 1997; United Nations 1999], their national Hdi can be used to compare Italy with other countries, introducing my regional differentials in order to rank Italian macro-areas (table 10).

During the XX century Italian catching-up has been apparent also in terms of human development. However, by 1990 among the «historical» developed countries Italy was still ranking at the bottom, in the very last years being overcome also by Spain. In 1913 north-western Italian regions were still quite below north-western European countries, including France and Germany, both having with Italy a differential in human development higher than in income. Yet by 1990 both North-West and Nec had reached a far better position, not

much below many north European countries, and above the United Kingdom. It must be stressed that by this time international disparities had become on the whole quite slim; the only area which looked still relatively far from the others was the Italian South, its great advancements notwithstanding.

Table. 10. Hdi international comparisons, 1870-1990 (US=100)

	1870	1913	1950	1973	1990
United Kingdom	98.80	100.16	95.22	96.25	96.16
France	91.38	94.18	90.57	96.49	98.35
Germany	90.18	94.50	92.33	95.90	n.d.
Belgium	90.98	90.41	92.58	95.90	n.d.
The Netherlands	95.19	100.47	97.36	98.48	98.35
Switzerland	100.60	99.06	96.73	98.36	n.d.
Austria	63.53	76.57	88.81	94.96	97.26
Denmark	100.60	102.20	96.98	97.66	97.15
Sweden	94.99	99.53	96.98	98.95	97.48
Norway	87.78	96.86	95.72	97.07	97.80
Finland	45.29	68.87	87.30	94.38	98.02
Spain	57.92	64.31	77.48	92.04	95.61
Italy	57.72	70.91	82.52	92.97	94.51
<i>North-West</i>	n.d.	83.46	90.44	96.50	97.06
<i>North-East-Centre</i>	n.d.	75.52	86.23	94.83	96.40
<i>South and islands</i>	n.d.	57.86	73.11	88.04	90.64
Canada	94.99	99.37	95.22	99.30	101.43
Australia	102.20	107.70	96.86	93.79	96.60
Japan	47.29	71.07	83.40	96.60	99.45
<i>United States (absolute figures)</i>	0.499	0.636	0.795	0.854	0.911

Sources and notes: Conte, Della Torre, Vasta [2001]. For the Italian macro-areas see text; in these cases, the four benchmark years are 1911, 1951, 1971 and 1991 respectively.

## 6. An overall picture

Table 11 proposes two synthetic indices for each one of the measures of regional disparities considered in the previous paragraphs (income per-capita, life expectancy, education and Hdi). The first one is a weighted index of total regional disparities, estimated through the same methodology adopted by Albert Carreras for Spain [1990]: for each one of the benchmark years, absolute differentials between a region and the national average (=1) are weighted with the respective regional share of population, and then summed<sup>12</sup>. The second index is the ratio between the values of the five most advanced regions and those of the five most backward ones, each region being weighted with its respective share of population; hence, unlike the former, this index does not consider intermediate regional rankings.

Table 11. Regional disparity trends, 1871-2001

	Weighted index of total regional disparities				Ratio first 5 / last 5			
	Income per capita	Life expectancy	Education	Hdi	Income per capita	Life expectancy	Education	Hdi
1871	n.d.	0.064	0.435	n.d.	n.d.	1.171	3.396	n.d.
1891	0.146	0.074	0.353	0.190	1.608	1.202	2.778	1.639
1911	0.181	0.073	0.260	0.146	1.592	1.184	2.025	1.429
1938	0.256	0.036	0.111	0.080	2.099	1.097	1.342	1.237
1951	0.269	0.027	0.111	0.076	2.461	1.082	1.390	1.236
1961	0.252	0.012	0.087	0.040	1.973	1.038	1.249	1.101
1971	0.208	0.011	0.064	0.036	1.704	1.033	1.197	1.095
1981	0.206	0.010	0.047	0.030	1.781	1.032	1.145	1.079
1991	0.214	0.007	0.042	0.030	1.801	1.022	1.121	1.077
2001	0.227	0.006	0.030	0.027	1.863	1.016	1.091	1.071

Sources and notes: see text.

Total regional income disparities increased from 1891 to 1951, reflecting the widening of the North-South divide; yet it is worth noticing that the ratio among the richest regions and the poorest slightly decreased between 1891 and 1911, as a consequence of the catching-up of some of the latter (Abruzzi, Lucania, Calabria). From the 1950s to the 1970s income disparities were reduced, but in the last two decades both indices began to rise again, so that by 2001 income regional disparities were still quite high, remarkably higher than before world war I.

Unlike income, both indices of life expectancy disparities, after they had risen from 1871 to 1891, decreased continuously during the XX century, so much that we can say that, by the end of this period, they have practically disappeared. Of course this has been an important result, although we must recall that in this field there has been a general catching-up through all the world, especially among the high and middle income countries.

Also education disparities decreased, through all the period. On the whole, convergence in terms of human development has been quite strong, even when income disparities widened (indeed, these counted relatively less for the building of Hdi, because of the logarithmic scale); anyway, we can see that from 1981 to 2001 improvement has been much slower, largely due to the educational component.

<sup>12</sup> The basis of this index is the same as that of the variance and the standard deviation. The former is preferred because of technical reasons.

## 7. Conclusions

This paper proposes a broad historical picture of regional disparities in Italy, from 1871/1891 up to 2001, for benchmark years. Its focus is not only on income, but also on the human development index and on its two other single components (apart from income, longevity and education). Concerning value added per capita (income), for the years from 1891 to 1951 estimates are taken from my previous works, then connected with the official estimates starting from 1961. With regard to life expectancy (longevity), I make use of estimates by Conte, Della Torre and Vasta, precedently unpublished. In the case of education, a new indicator is built with the use of different sources and data, and computing – for the last half of the XX century – the per capita years of schooling. Lastly these three indicators are weighted in order to estimate a human development index of the Italian regions, from 1891 up to 2001. For income and Hdi, the rankings of the three Italian macro-areas (North-West, North-East-Central, South and islands) are compared with those of some of the main European and extra-European countries.

Historical trends on regional disparities have been briefly commented. Soon after Unification, Italy was a profoundly divided country, not only in terms of income per capita, but also – and maybe more – with regard to education and to other components of human development, which varied greatly among the regions. While until 1951 income disparities increased, those in education and longevity followed an opposite trend, so that there was a clear catching-up in terms of human development. This catching-up process went on also during the second half of the XX century – particularly in the 1950s, the 1960s and (partially) the 1970s – when at last income disparities fell down, thanks to regional policies as well as to the South-North migration; however, in the last two decades the process came almost to a halt, because of a new widening of the North-South income divide (there was still a catching-up in terms of education, while in terms of longevity regional disparities have practically disappeared). By 2001 Hdi disparities among the Italian macro-areas were still relatively high – although significantly reduced – if compared with those among the most developed countries.

Important changes occurred in the regional rankings. The relative decline of the north-western regions, particularly in terms of human development, was offset by the rise of the Nec. Within it, Veneto improved mostly in terms of income, hence becoming more like the other two great northern regions, Lombardy and Piedmont. Central regions (Abruzzi included) followed a different path, where income advancements went hand in hand with those in the standard of living; thanks to this, by 2001 some of them had reached the highest rankings in human development.

Within southern Italy we can detect relevant income disparities at the end of the XIX century. Yet these almost disappeared during the following decades, mostly to the detriment of Campania, Apulia and Sicily; meanwhile, southern Italy as a whole was falling behind compared with the Centre-North. During the second half of the XX century new rankings took the place of the old ones, with the smallest regions, Abruzzi, Sardinia and Lucania, being now leading the group. In this group, income and Hdi disparities seem to be more strictly correlated.

By presenting income and Hdi estimates of the Italian regions, this paper aims at giving a first contribution to the debate over the links between economic growth and the Hdi. There is a strong correlation between income and Hdi, not only because income stands as a basic component of Hdi, but also because, especially in the long term, it is strictly correlated with

another component of Hdi, education, as stressed by a vast international literature. However, the links between income and life expectancy have been far less explored, and probably they are not so apparent. Some results of this paper seem in line with this statement. Furthermore, Italian regional trends seem to confirm that high Hdi leads to long term economic growth, while the reverse causation is not always true: referring to the international context and to the last decades of the XX century, recent analyses [Ranis, Stewart, Ramirez 2000] have reached the same conclusions. Yet for the Italian regions further research is needed, and this work should be regarded as a preliminary one.

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