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The Impact of the Crisis on Territories

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Disparities in Local Social Protection from a Demographic Perspective. Population Ageing

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The study of economic and social phenomena cannot ignore an in-depth analysis of the population and its demographic features, as strictly related to the phenomenon of interest.

The old age function of social protection represents an important share of social spending in Italy, hence it appears useful, if not essential, to focus on the aging process of the Italian population. Even if progressive population ageing is spreading throughout the Italian territory, it does not show the same intensity across different regions. In this Chapter, we try to understand if and how investments by local governments in this area of social protection are consistent with the picture suggested by the demographic context.

It is well known that Italy is one of the "oldest" countries (average age in 2016: 45.1 years), together with Germany (average age: 46.3) in Europe, and, on a global scale, Japan (average age: 46.5). In recent years, a growing proportion of very old aged people is emerging (the so called "oldest old") as well as centenarians (over 18,000 units). This ageing process can be seen not only as "ageing from the top", but also as "ageing from the bottom" (meaning a progressive reduction of young people) with a resulting imbalance in intergenerational relationships as, in social terms as well, as this involves a reallocation of resources in favor of the elderly (health, disability, long-term care).

Demographic analysis helps us reveal deficiencies and possible differences between the amount of social spending allotted to the elderly and

the actual demographic weight of aged people, both at the national and regional levels.

1 Introduction

What exactly do we mean when we talk about ageing? There are many answers to this question, as the term comprises several meanings and viewpoints. As Ghékière noticed a few years ago, the very notion of "... *vieillissement demographique...désigne, tout d'abord, le degre de vieillissement d'une population à un moment donnéé*", thus referring to the ratio of the elderly on the entire population; but this same definition "... *désigne également le processus conduisant au renforcement de cette proportion*" (Ghékière, 2000; pag. 483). Furthermore, as Capacci duly reminds us, on the one hand we have individual and unrelenting biological ageing and, on the other, there is demographic ageing, which is collective and in some way contextualized, as it varies according to the different workings of its causes (Capacci, 2004). Certainly though, demographic ageing – "*il fenomeno strutturale più importante verificatosi ... in questo ultimo scorcio di millennio*" (Egidi, 1997; page 349) – meant as the increasing proportion of the elderly, combined with the speed with which the process occurs, certainly has economic, social and cultural effects which are not secondary.

The following analysis mainly focuses on ageing as a phenomenon and not as a process, even though phenomenon and process are strictly connected. What do we mean when we refer to the elderly? It is in fact necessary to establish when one is considered an old person, so as to quantify the phenomenon.

Conventionally, one becomes senior citizen once one has reached the age of 65 and many statistics and measurements are based on this age limit. However, it is necessary to reflect upon the "meaning of old", a term which in some ways is affected by historical contexts. In other words, a sixty-five year old individual today has a very different life style than a sixty-five year old person even only forty years ago, as far as health[1], life expectancy and opportunities[2], are concerned. Therefore, it is appropriate, actually "*sempre più necessario*", as Rosina emphasises, to

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[1] As early as the '90s, Istat emphasized how "*l'anziano non è sempre un soggetto da assistere*" (Istat, 1997, p. 9) and that the situation at present, as far as health and life style are concerned, is different from the past and it will differ in the future.

[2] Burgalassi, in 1979, in an essay on old age alienation, while tackling problems concerning terminology and its complexity, among a number of definitions reports that of "*età inutile*", which later became the title of the volume (Burgalassi, 1979).

distinguish between "*anziani giovani*" (the younger-old), from 65 to 79 years of age and "*grandi anziani*" (the oldest-old), 80 years old and over, indicating 80 as the age when the impact of disability becomes greater (Rosina, 2012). This very distinction is particularly significant when the demographic aspect of ageing is connected to the share of social spending for the protection of the elderly.

2   The Italian context

We first consider the share of senior citizens at the conventional age of 65. We can observe that the steady increase, starting from the first Census to date, has greatly hastened in recent years (Fig. 1). This is even more significant because the index reported in Figure 1 is computed considering the weight of senior citizens (top-down ageing) on the young population (0 – 14)[3]. If we only focus on the past five years this process is even more evident: in Italy we now observe about 160 citizens over-65 every 100 teenagers under 15. The ratio increases to almost 190 for females, known to live longer (Fig. 2).

In other terms, from 2011 to 2015, the annual over-65 population growth rate was 2% compared to the decrease of -0.13% of the 0-14 age group, which translates in an increase of about three elderly people every 100 young people, per year. The importance of this phenomenon appears even more prominent if we consider that top–down ageing corresponded to bottom–up ageing, i.e. the progressive erosion of the younger age groups, resulting from an extended and steady decrease in fertility[4], currently equal to 1.35 children per woman. Therefore, the "*debito demografico*" (demographic debt) has established itself and it will weigh on future generations as far as social security and health care provision are concerned (Istat, 2014a; p.141).

Further, the protracted low fertility regime has caused a contraction in the working age population, from ages 14 to 64. The consequence is that if at the beginning of the 2000s the number of potential non-working (youth plus elderly people) was still below 50 units per 100 potential working individuals, today, there are 55.5 units, as measured by the DTDR

[3]Old Age Index=$[Pop_{(65+)}/Pop_{(0-14)}] \times 100$.

[4]As known, fertility reduction is a decisive push factor towards population ageing, which subsequently leads to health, economic and social condition improvements, thus extending life expectancy. From this point of view, the Italian situation is particularly critical, with the TFR (Total Fertility Rate) below the replacement level since the early '70s. In 1971 there were 2 old age members for every individual under 6 years of age; while today, a pre-school child "bears the weight" of more than 4 elderly people.
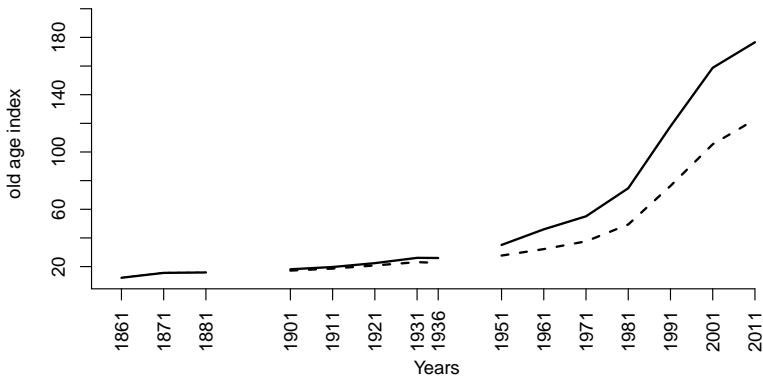
Figure 1: Old Age Index Trend by sex (females: continuous line; males: dashed line). Census 1861-2001 and 31/12/2011. Source: our data processing on Istat data.

(demographic total dependency ratio)[5]. These data are also confirmed by the fact that the establishment of the ageing process only rests on the old age component (Table 1). In fact, if we calculate the old age potential support ratio with the inverse of the old age dependency ratio, we find that, to date, there are fewer than three working age individuals to support each potential retirement-age person, against the 3.6 units in 2004. If we move from the demographic old age DR to the economic old age DR[6] we see that in Italy, as early as 2013, the weight of the old age component ratio was 57 per 100 employed, aged 15 to 64 (EC, 2015).

The existing generational imbalance in the Italian population is also testified by the average age, currently 45 -about three extra years since the beginning of the 2000s- second only to Japan (46.5) and Germany (46.3), and higher than the worldwide average by 15 years (UNDP, 2015).

It is worth to be noted the progressing of old age shown by the positive

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[5]DTDR= $[(Pop_{(0-14)} + Pop_{(65+)})/Pop_{(15-64)}] \times 100$ or DTDR=$[Pop(0 - 14)/Pop_{(15-64)} + Pop_{(65+)}/Pop_{(15-64)}] \times 100$, were the first ratio stands for demographic young dependency ratio, and the second is the demographic old age dependency ratio.

[6]In this case, the ratio is inactive over-65 population as percentage of employed population 15-64.
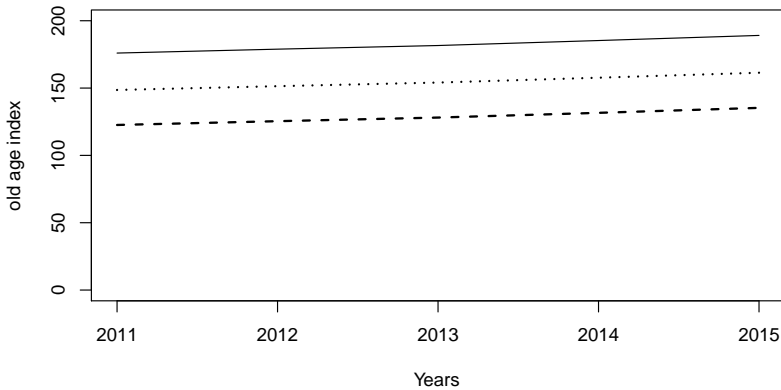
Figure 2: Old Age Index Trend by Sex (females: continuous line; males: dashed line; total: dotted line). Years 2011-2015. Source: our data processing on Istat data.

trend of life expectancy at birth (e_0), which has recently introduced the issue of counter-ageing (see, for example, Capacci, 2004). In fact, if we observe the e_0 trend in the last 40 years, we see that it shows an almost unstoppable, progressive, almost linear increase, except for the slight slackening during the more recent period when life expectancy at birth has exceeded 82, for both males and females[7] (Fig. 3).

[7]During the last year, for the first time in history, life expectancy has receded (from 80.3 to 80.1 years for males and from 85 to 84.7 for females), accompanied by a sensible increase in death rate (+ 9.1%), which has raised major concerns (the number of deaths in 2015 is the highest since 1945; Istat, 2016a) but which does not seem entirely due to old age (Blangiardo,

Table 1: . Demographic Total Dependency Ratio and by age. Years 2002 and 2016. Source: our data processing on Istat data.

Years	Young DR	Old age DR	Total DR
2002	21.2	28.2	49.4
2016	21.2	34.3	55.5

Nevertheless, from the point of view of postponed old age, it is also interesting to watch the trend of life expectancy at ages 65 and 80. The threshold for these two ages has moved forward considerably; hence, a 65 year old, whose life expectancy in 1975 was scarcely 15 years, in 2015 it was over 20 years. In the same period, life expectancy for an 80 year old stepped from 6.2 to 9.1 years (Tab. 2).

These figures have produced a considerable increase in the impact of the oldest-old on older adults in general, amounting to more than 30% of the over-65. In addition, if we take centenerians into consideration, we see that, from a little more than 6,000 individuals at the beginning of the 2000s, they totalled 18,765 in 2015, with an average yearly increase, only in the last five years, of 5.7%. If we then consider that the yearly average increase during the same period, for the over-80, was of "barely" 2.6%, we may notice a trend forward even for the oldest-old. On the other hand, this is in line with what is occurring in other European countries, such as England and Wales, referring to which Leeson even talks of the "*emergence of large numbers of centenerians*" in the context of ageing population (Leeson, 2016).

These life gains do not seem to correspond to health gains. In fact, if we observe e_0 and e_{65} trends according to "good health" standards[8], we can see that the situation is quite different. From 2004 to 2014, a male born in Italy saw his healthy life years (HLY) reduced by over 6 years and females by 9.5 years; there has also been a considerable decrease in the number of HLY, even starting from the age of 65 (3.6 years less for males and 5.2 years less for females) (Tab. 3). This decline means that in 2014 the "loss" in life expectancy years, understood as the difference between general life expectancy and healthy life expectancy, is consistent, while e_0 is of 80.3 years for males and 85 for females, as HLY at birth decreases at 62.5 and at 62.3 respectively.

Restrictions to "good health" seem confirmed by the increase of pathologies typical of old age: in 2013 about half of the over-65 suffered from arthrosis/arthritis or hypertension and, compared to 2005, sufferers from Alzheimer's or senile dementia increased by 50% (Istat, 2014b). In recent years diagnostic capabilities and early diagnosis have improve, but cer-

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2015). The reduction in vaccination coverage, which has decreased by 50% in the over-65 population, may be a relevant factor (Oliva, 2016). This "death postponement", compared to the 2013 – 2014 period seen as "*più favorevole per la sopravvivenza*" (more favorable for survival; Istat, 2016b) is thought to have affected mainly the oldest-old and may, in fact, be the consequence of a saving on health care and the persisting economic crisis (Blangiardo, 2015). Nevertheless, it is undeniable that 85% of the death surplus in 2015 affected the elderly from 75 to 95 (Istat, 2016c).

[8]This indicator (HLY) was conceived in the '70s and it takes into consideration mortality as well as the age specific proportion of population with and without disability (EU, 2014).
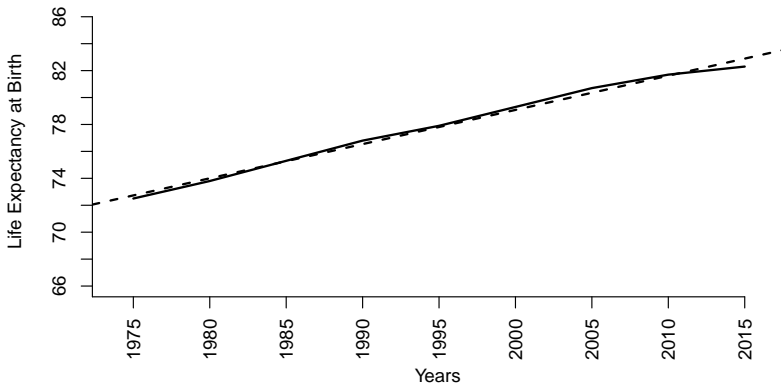
Figure 3: Life expectancy at birth(e_0) since 1975 to 2015 (continuous line) and linear trend (dashed line). Source: our data processing on Istat data.

tainly population aging is a determining factor. Still in 2013, approximately 82% of the roughly 2 million and 500 hundred thousand senior citizens, who suffered from serious functional limitations, were over 75 years old (Istat, 2015a). In addition, while among senior citizens between the ages of 70 and 74 the share of those who suffered from functional limitations was lower than 10%, it exceeded 43% among the population over-80 (Filippi, 2014).

3   Regional disparities

Ageing is confirmed as being a structural phenomenon in the Italian population even though it does not affect the whole of the national territory in the same way. The intensity of the phenomenon varies across different territories (regions). Here, we are going to refer to the regional context also from the point of view of local social spending allotted to the elderly population.

Table 2: Life expectancy at birth (e_0), at 65 (e_{65}) and at 80 (e_{80}), since 1975 to 2915. Source: Istat.

Life expectancy	1975	1980	1985	1990	1995	2000	2005	2010	2015
e_0	72.5	73.8	75.3	76.8	77.9	79.3	80.7	81.7	82.3
e_{65}	14.9	15.3	16	17.0	17.7	18.5	19.3	20.0	20.3
e_{80}	6.2	6.6	69	7.0	8.0	8.3	8.6	8.9	9.1

Table 3: Healthy life years at birth and at old age, by sex; years 2004 and 2014. Source: European Commission.

Years	e_0		e_{65}	
	M	F	M	F
2004	68.7	71.8	11.4	12.5
2014	62.5	62.3	7.8	7.3

3.1 The elderly

As in the previous section, we first focus on the 65 year old threshold to define the ageing population. We can see that until December 31st, 2015, the old age index in 12 out of 20 Italian regions was higher than the national average, which was 161.4 at the date. In three regions, Friuli-Venezia Giulia, Liguria and Molise, the ageing population was more than twice as many the young people, especially in Liguria, where the index almost reached 247 (Fig. 4). On the opposite end of the spectrum, we find Campania, the youngest region (Old Age Index = 117.3), Trentino-Alto Adige and Sicily.

This picture has also consequences on the demographic total dependency ratio. In fact, "older" Liguria counted 65.8 non-working age individuals every 100 working age ones, while the "younger" Campania had 'only' 49.5 non-working age individuals (55.5 at the national level). In addition, if we separate the two components of the index, we see that where the DTDR is the highest, i.e. Liguria, the old age dependency ratio is at the top as well (46.8). Differently in Campania, which is the youngest region, we find the minimum old age dependency ratio of 26.7 (34.3 at the national level). If we analyse this difference in terms of generational turnover, we see that, strictly from the demographic point of view, the

situation in Liguria appears increasingly weaker, as there are little more than 16 very young "potential" working individuals every 100 working age individuals. These individuals in the future will be increasingly less capable of "bearing" the weight of an ageing population which is bound to increase[9]. The young dependency ratio in Campania (22.8), instead, shows how this region actually has a more favourable demographic situation as far as the generational balance is concerned, even for the future.
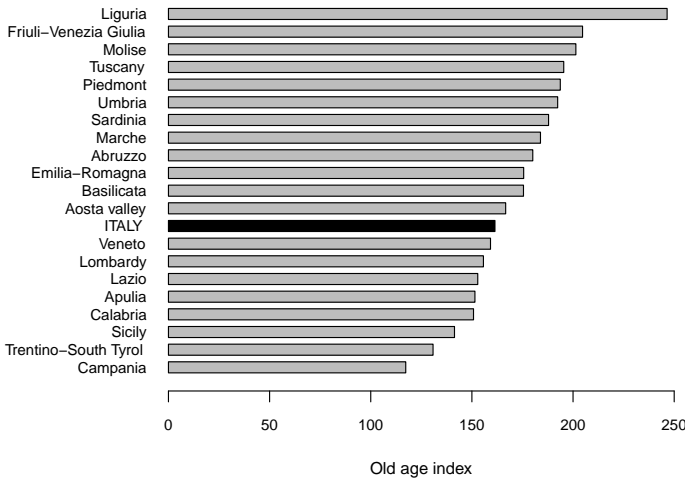

Figure 4: Old Age Index by Region at 31/12/2015. Source: our data processing on Istat data.

Trying to assess the balance between "grandparents and grandchildren", pre-school children "support" the smallest number of "grandparents" in Campania; which is half of the number for the children in Liguria (respectively: 3.22 and 6.64; 4.27 elders to under-6 at the national level).

The situation of the oldest-old is also interesting. As already mentioned, they form 30.3% of the ageing population. In seven regions, the population over-80 is over 1/3 larger than the over-65 population, especially in Molise, where the over-80 exceed 34% (Fig. 5). Centenerians, instead, are roughly 0.5% of the over-80 population, everywhere.

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[9]To date, the old potential support ratio in Liguria is about 2.

3.2   Social spending

Concerning overall spending for social intervention and services[10], the situation at the regional level is also very differentiated, as clearly expounded in Fig.6. Indeed, against the national average of about 117 euros per capita, we have regions like Valle d'Aosta (277), Trentino-Alto Adige (259), Friuli-Venezia Giulia (241) and Sardegna (229): those regions allocate many more funds for intervention and social services. On the contrary, there are eight regions which allot less than 100 euros per capita, particularly Calabria, where the per capita spending for social intervention does not reach 25 euros (Istat, 2015b). Therefore, the range between the highest and the lowest expenditure is 252.5 and the standard deviation (σ = 75.3 euro) is about 60% of its maximum (σ_{max} = 124)[11].
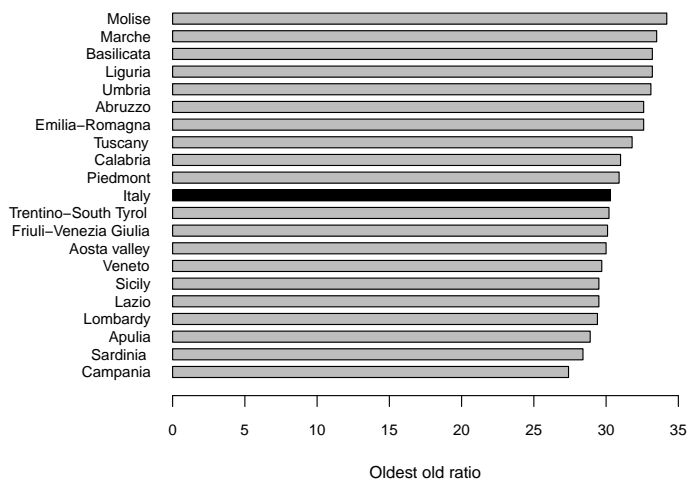

Figure 5: Oldest-old Ratio by Region at 31/12/2015. Source: our data processing on Istat data.

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[10]All data regarding intervention and social service spending and population, listed below, refer to the year 2012.

[11]$\sigma_{max} = \sqrt{(A - l) \cdot (L - A)}$; where A is the arithmetic mean, l is smallest value and L is the largest value of the distribution.

3.3 Elderly and social spending

Italian regions show differences in social spending for elderly people, which at the national level is 107 euros per capita[12]. Among these regions, there is Valle d'Aosta where funds allotted for elderly amount to 883 euros per capita (the highest value) and Calabria with 25 euro per capita (the lowest value), (Fig. 7).

Variability is even greater than the one observed for general social spending. Indeed, the range is much wider compared to general social spending (858 euros) and the standard deviation (σ = 187.88) is 63.8% of its maximum (σ_{max} = 293.3). This is even more apparent if we compare the coefficient of variation (CV[13]), since the CV of per capita expenditure distribution for social interventions on the whole is 0.11, while the CV of per capita expenditure distribution for interventions on elderly population is 1.28. However, if we compare the two rankings, we see that there are no substantial differences in the position occupied by each region. Spearman's rank correlation coefficient[14], which compares the position of each region in the ranking of global expenditure for social interventions with the one in the ranking for elderly expenditure, approaches 1 (ρ_s = 0.97).

This seems to indicate a kind of 'consistency' between the per capita amount of social spending for the whole population and the per capita amount of social spending on old age: where there is higher social spending for the whole population, higher amounts are allotted for the elderly and vice-versa.

However, if instead of social spending per capita we consider the share of social spending on old age (on the global amount of social spending) related to the percentage of elderly population, there are variants worth noticing. As we can see in Fig. 8, the percentage of senior citizens does not always corresponds to a greater share of social spending on the elderly.

We notice the peak value of Valle d'Aosta, which allots 68.4% for social spending to the elderly (19.1% is the national level), although the percentage of the over-65 is approximately in line with national figures, respectively 21.6% and 21.2%. Conversely, Umbria, which has one of the highest percentages of population ageing (23.8%), has the lowest spending rate allotted to old age (13%). Moreover, if we measure the relationship between the two rankings on the regional level, i.e. the over-65 percentage

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[12]Note that the population of reference (denominator) only consists of the elderly population.

[13]CV = standard deviation/mean.

[14]$\rho_s = 1 - [6 \times \sum d^2)/(n(n^2 - 1)]$; where d is the difference between the ranks of each unit and n is the number of the couple of differences.
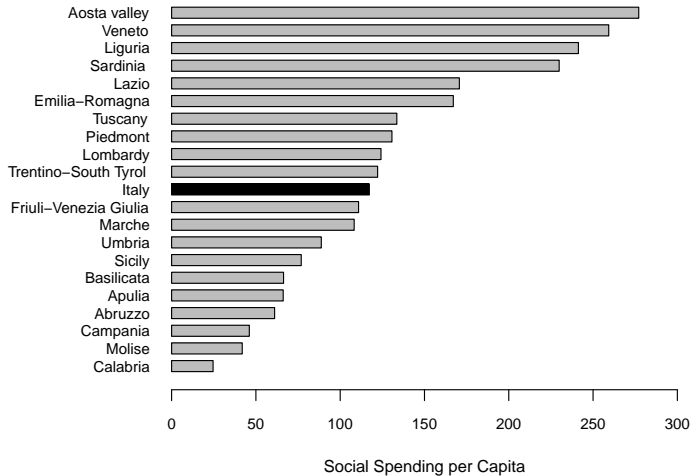
Figure 6: Social spending per capita by Region. Year 2012. Source: Istat.

and share of social spending on the elderly, we see that it is weak (ρ_s = 0.21) as if the share to allot to senior citizens were 'independent' from the share of the elderly on the entire population.

In the overall picture, Campania emerges as it shows the lowest percentage of population over-65 and lowest share of social spending for the elderly. Trentino-Alto Adige presents a similar pattern that would induce to think that where the elderly population is small it is not necessary to allot a large share of social spending. However, if we consider e_{65} as an indicator of possible ageing, we see that while in Trentino-Alto Adige the over-65 population still has a life expectancy of 21 years (by far the highest in Italy whose e_{65} is 20.1 years), in Campania life expectancy for the over-65 population does not reach 19 years (the lowest among the 20 regions). Therefore, if in Trentino-Alto Adige a relatively low spending is justified by the little 'weight' of ageing population, in Campania, instead, scarce spending for the protection of the elderly could contribute to the causes for lower life expectancy. A similar situation can be observed also for Sicily (e_{65} = 19.3), while Lazio spends little – so to speak – on elderly population (18° in decreasing order) despite the fact that over 1/5 of its population is over-65 and that in this region e_{65} is one of the lowest in the country (19.8 years). Generally speaking, it is not easy to find univocal explanations to the consistency or non-consistency between the demographic situation
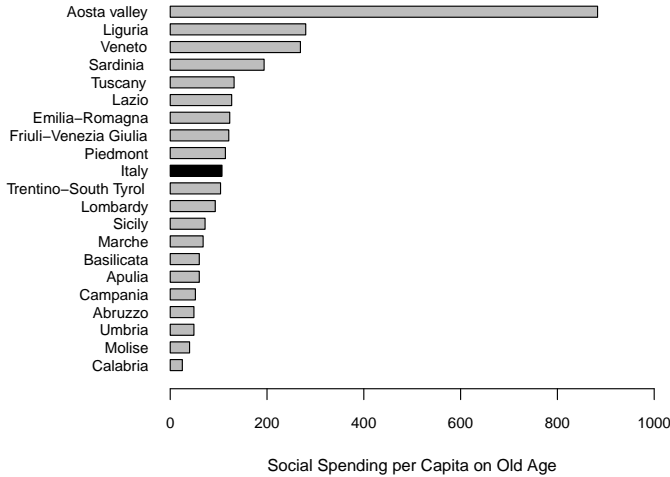
Figure 7: Social spending per capita on old age by Region. Year 2012. Source: Istat.

and social spending. This is the case of Umbria, where we find one of the highest percentages of elderly population (23.8%) , with the lowest share of spending on the elderly (13%), and a life expectancy at 65 rather high (e_{65} = 20.5). Another example is Valle d'Aosta, where the great attention for elderly population, in terms of social spending, does not match an equally significant increase in their life expectancy (e_{65} = 20.4).

4 Conclusions

The demographic perspective provides us some insights to analyze the differences among local social protection systems, even if some relevant issues remains to be disentangled. We have seen that stabilization of old age throughout the entire Italian population, now one of the oldest in the world, emerges in different ways among the 20 regions. Therefore, we could hypothesize that local response to the needs of the elderly, in terms of spending allotted to them, is a consequence of the different occurrences of such phenomenon. In fact, our attempt to analyze this phenomenon would lead one to think that social policies are completely independent and disconnected from the local demographic context. High variability among
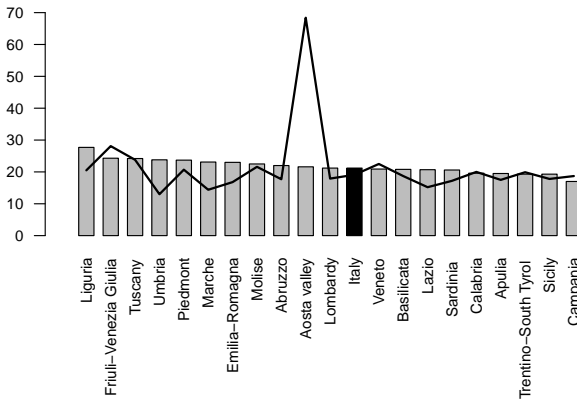
Figure 8: Share of Social spending on old age (line) and over-65 percentage (bars) by Region. Year 2012. Source: Istat.

the regions in the percentage of the over-65 is not consistent with the even greater variability of the spending share for the elderly, or even with the variability of life expectancy for the over-65.

If, however, demography seems unable to support social policies, it should/it must alert us. The established economic crisis of recent years forces an increasing attention to the use of resources. This is particularly important for the protection of the elderly, who are destined to weigh more and more on the rest of the Italian population and not only as regards to figures. Indeed, the biological clock is constantly moving the threshold of old age forward, but the lengthening of life expectancy does not necessarily translate into a life spent in good health. The growing number of the oldest-old people implies an increase in degenerative pathologies connected to old age, which produce disabilities and the need for long term support, thus demanding an increasingly greater engagement in resources and in adequate social policies. Knowledge of the context and adequate programming of social spending, together with the demographic frame of the territory, especially in times of economic crisis, is now, more than ever, un unavoidable commitment for the policy maker.

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