

Mortality by income position: should we revise divisor coefficients?

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Motivation

If life expectancy is heterogeneous by observables and retirement rules are homogeneous, there is (unintended) redistribution, from those who enjoy shorter lives and/or shorter retirement periods, towards those who live longer.

If the observable is gender, none objects while taking into account that women pensions are typically lower than men ones.

If the observable is income position, some doubts can be raised, once we take into account that income position could be questioned according to fairness.

In many cases, income position is associated to specific occupations, where the law of compensating differentials does not apply.

The Covid-19 pandemics may have exacerbated the problem if excess mortality has been unevenly distributed in the population.

What we do

We exploit INPS administrative data on pensions to provide partial answers to these questions

We work on the entire population available of retirees, observed in a specific window (2014-2020).

We show that income position (proxied by quintiles of pension income) affect death probability and life expectancy/duration of life.

Excess mortality during Covid19 pandemic was detrimental for central quintiles.

Literature

Leombruni et al (2010) follow a longitudinal sample of workers employed in the private sector retiring in the period 1985-2005 → they show that the top quintile computed on pension income exhibits a lower mortality risk by 10% when compared to the bottom quintile (rising to 20% if restricted to dependent employment).

Belloni et al (2013) utilizes the same sample, restricting to men who were previously dependent employees. They show a life expectancy gap between top and bottom quintiles of 3.5 years (43 months)

Ghislandi and Scotti (2020) exploit the current INPS archives of active workers and pensioners to analyse the income gradient in two life points: at the age of 50 (precise measure of income, estimated life expectancy) and at the retirement age (imperfect income measure, observed age at death). They find significant gaps in life expectancy (in the order of 3-4 years) for the male component, associated to income quintile or to job qualification. These gaps are widening across age cohorts.

Our data

In the absence of longitudinal data that are long enough to observe workers over the second half of their life (from the age of 50 onwards), we are forced to rely on repeated cross-sectional data interpreted as longitudinal (contemporaneous method).

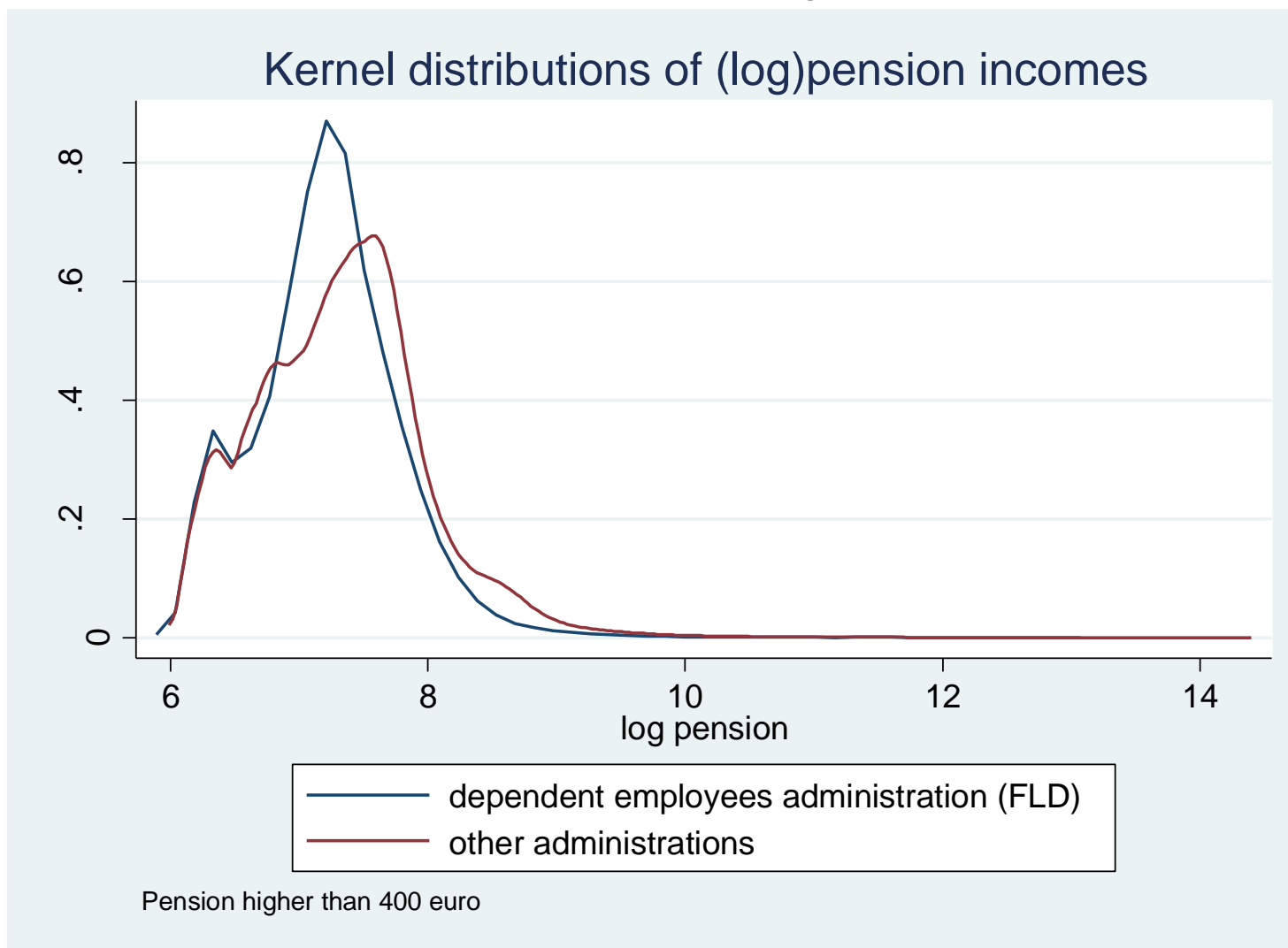
We consider the entire population available in INPS archives, which only excludes professionals (since lawyer, architects, journalists have their pension funds) and people without public pensions

The coverage of the resident population is higher among women and reaches 80% in the oldest cohorts.

age	resident population (2020)			population in INPS archives (2021)			coverage		
	men	women	total	men	women	total	men	women	total
60	399772	425767	825539	22387	37292	59679	5.6%	9.3%	7.2%
65	348378	381206	729584	102002	150550	252552	29.3%	43.2%	34.6%
70	328058	366082	694140	214552	256096	470648	65.4%	78.1%	67.8%
75	244277	289606	533883	167825	195993	363818	68.7%	80.2%	68.1%
80	227517	298567	526084	182818	196819	379637	80.4%	86.5%	72.2%
85	132945	211312	344257	124993	116794	241787	94.0%	87.9%	70.2%
90	56540	121480	178020	70306	50823	121129	124.3%	89.9%	68.0%
95	13171	42478	55649	19905	9605	29510	151.1%	72.9%	53.0%
≥100	2332	12472	14804	5040	1708	6748	216.1%	73.2%	45.6%

We restrict to people born between 1920 and 1960, observed over the time window 2014-2020. The oldest cohorts are observed in the final stage of their life (between 92 and 100) while the youngest at the entry of their retirement life (between 54 and 60). The underlying structure of the data (restricted to old-age pension) in tables 10 and 11.

There are differences according to the type of occupation and the sector of employment, which will be controlled for in regressions.



Our working sample and descriptive statistics in the following tables.

We define income position using pension incomes that only include old-age/seniority pensions (thus excluding assistance, disability and survival pensions). This identifies in a rather univocal way the top quintile, while there is some (mis)allocation in the bottom tail (see mobility matrix below in table 2).

Pensions quintiles are computed by birth year and region of actual residence, on the argument that pay-as-you-go pensions are correlated to earnings obtained during the working life. Only positive pensions are included in the calculation → housewives without working experience are excluded.

Table 1 – Descriptive statistics for selected birth years

SAMPLE SIZE						
birth year	1 st quintile	2 nd quintile	3 rd quintile	4 th quintile	5 th quintile	total
1920	10807	10776	10786	10788	10780	53937
1925	28590	28482	28522	28531	28521	142646
1930	55796	55652	55701	55728	55692	278569
1935	73844	73692	73794	73723	73753	368806
1940	94527	94522	94562	94477	94514	472602
1945	82241	82407	82044	82224	82220	411136
1950	100034	100983	99013	99980	99994	500004
1955	51343	51317	51324	51325	51314	256623
1960	11957	11951	11949	11951	11941	59749
Total	2529297	2527888	2526664	2526381	2527077	12637307
AVERAGE PENSION INCOME (euro 2012)						
birth year	1 st quintile	2 nd quintile	3 rd quintile	4 th quintile	5 th quintile	total
1920	342.7	527.6	671.3	1061.9	1892.1	897.8
1925	378.3	532.1	678.8	1069.0	2030.5	936.2
1930	416.4	546.8	741.4	1135.1	2177.7	1002.5
1935	444.4	585.0	880.5	1287.6	2382.9	1114.8
1940	453.0	707.8	1074.2	1482.5	2709.0	1284.9
1945	484.2	851.3	1242.8	1651.4	2884.4	1422.0
1950	558.3	1001.0	1418.6	1854.4	3101.5	1586.7
1955	883.1	1393.2	1751.5	2176.8	3364.8	1913.6
1960	924.5	1362.3	1702.9	2096.8	2895.6	1796.1
Total	521.1	832.9	1166.9	1582.0	2753.0	1370.0

AVERAGE AGE AT DEATH							
birth year	1 st quintile	2 nd quintile	3 rd quintile	4 th quintile	5 th quintile	total	
1920	94.83	95.15	94.73	94.86	95.21	94.95	
1925	90.64	91.05	90.62	90.72	90.97	90.80	
1930	86.33	86.49	86.21	86.37	86.60	86.40	
1935	81.60	81.66	81.62	81.76	81.83	81.69	
1940	76.60	76.66	76.81	76.87	76.97	76.78	
1945	71.55	71.68	71.89	71.94	71.90	71.80	
1950	66.97	67.15	67.03	67.07	67.08	67.06	
1955	62.86	62.88	62.91	63.03	63.27	62.97	
1960	58.67	58.80	58.98	58.78	58.70	58.78	
Total	83.01	82.52	82.50	82.85	83.32	82.83	

SHARE OF DECEASED (2021)							
birth year	1 st quintile	2 nd quintile	3 rd quintile	4 th quintile	5 th quintile	total	
1920	93.5%	92.9%	94.2%	94.2%	92.6%	93.5%	
1925	79.8%	75.3%	80.8%	81.5%	79.1%	79.3%	
1930	53.8%	53.0%	60.2%	60.0%	55.6%	56.5%	
1935	30.8%	33.7%	37.6%	37.1%	33.0%	34.4%	
1940	17.2%	21.0%	21.4%	20.8%	18.0%	19.7%	
1945	10.8%	12.0%	12.7%	11.9%	10.2%	11.5%	
1950	5.6%	5.8%	6.9%	5.9%	5.2%	5.9%	
1955	2.5%	2.6%	2.4%	1.9%	1.7%	2.2%	
1960	0.8%	0.7%	0.8%	0.9%	1.2%	0.9%	
Total	22.3%	23.4%	25.2%	24.9%	22.6%	23.7%	

Differences in income definitions by quintiles

Table 2 – Quintiles according to different income definitions

total pension income quintiles	old-age pensions quintiles					Total
	1	2	3	4	5	
1	1348268	992079	182250	1801	0	2524398
2	567371	853219	1030025	75154	0	2525769
3	363227	291049	808997	1057420	3182	2523875
4	193226	232005	275825	1044381	772983	2518420
5	84954	115898	222033	340138	1742337	2505360
Total	2557046	2484250	2519130	2518894	2518502	12597822
total pension income quintiles	old-age pensions quintiles					Total
	1	2	3	4	5	
1	53%	39%	7%	0%	0%	100%
2	22%	34%	41%	3%	0%	100%
3	14%	12%	32%	42%	0%	100%
4	8%	9%	11%	41%	31%	100%
5	3%	5%	9%	14%	70%	100%
Total	20%	20%	20%	20%	20%	100%

We have also explored the robustness of our results by using an alternative definition of income, including the (possible) income of the (surviving) partner: the two measures are rather correlated: 0.81 correlation for men - 5183906 observations – and 0.55 correlation for women - 4505386 observations). Information available for married or widowed.

The first outcome we investigate is the age of death, where the age differential wrt the first quintile is estimated controlling for gender, marital status, possible disability, birth year and past sector of employment (proxied by the pension fund of origin) → we find that higher income quintiles die at a later age, the average difference between top and bottom quintiles being 0.6 years for men and 0.7 years for women (see table 3).

The estimation sample is obviously biased, since we only observe those who died, i.e. the population with the worst sanitary conditions.

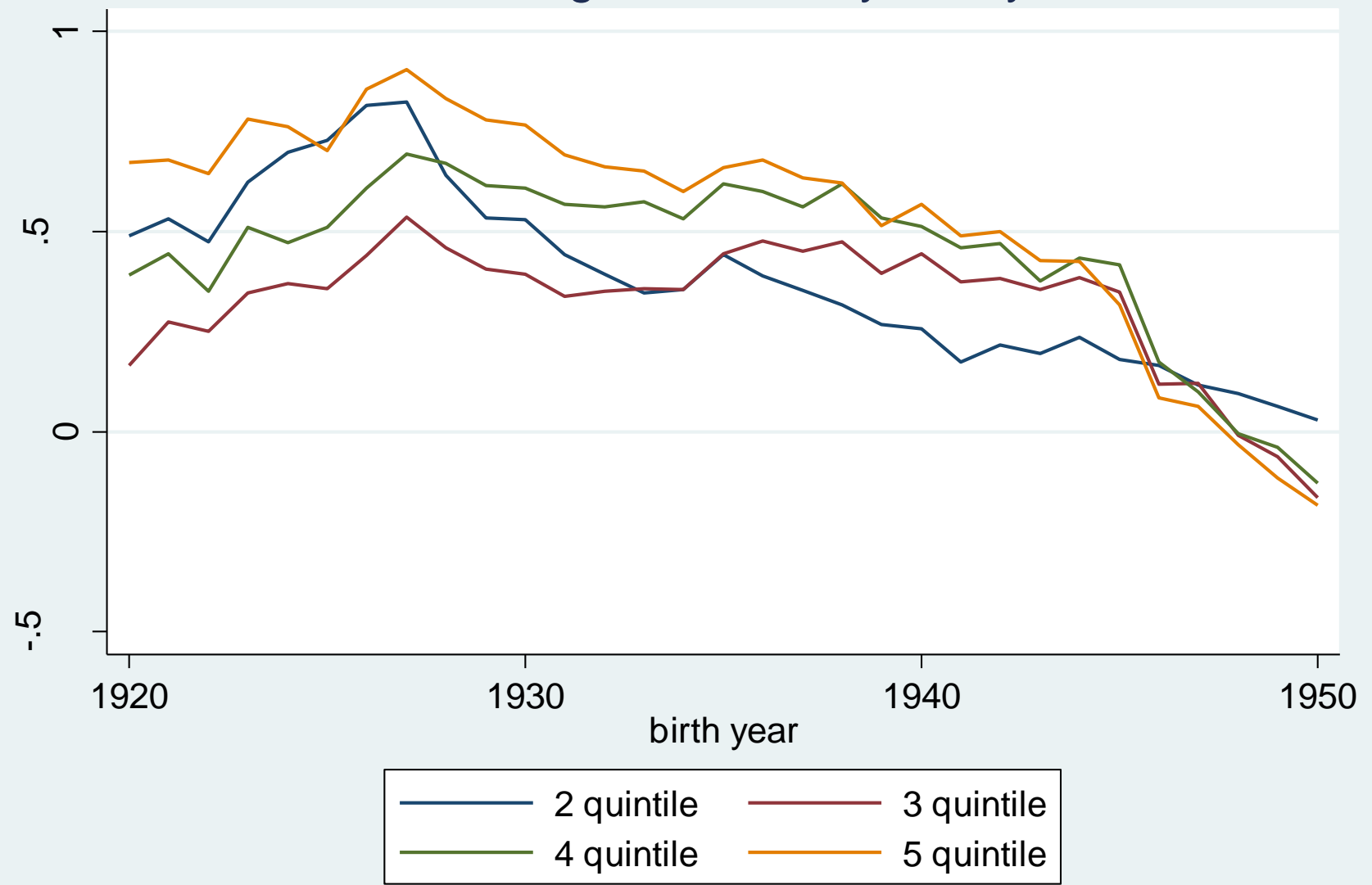
Table 3 – Age at death – Italy 2014-2020 - OLS

	1	2	3	4	5	6	7
dep.var.: age at death	men - no controls except income quintiles	men - region and birth year	men - region, birth year and past sector of employment	women - no controls except income quintiles	women - region and birth year	women - region, birth year and past sector of employment	all - region, birth year and past sector of employment
2 nd quintile	0.721*** [0.018]	0.305*** [0.006]	0.440*** [0.006]	0.232*** [0.029]	0.338*** [0.009]	0.457*** [0.009]	0.419*** [0.005]
3 rd quintile	1.728*** [0.019]	0.174*** [0.007]	0.262*** [0.007]	0.888*** [0.027]	0.378*** [0.009]	0.505*** [0.009]	0.370*** [0.005]
4 th quintile	1.717*** [0.024]	0.449*** [0.008]	0.397*** [0.009]	2.165*** [0.026]	0.539*** [0.008]	0.656*** [0.009]	0.510*** [0.005]
5 th quintile	1.854*** [0.029]	0.831*** [0.009]	0.654*** [0.011]	2.913*** [0.026]	0.701*** [0.008]	0.743*** [0.009]	0.629*** [0.006]
female							-0.262*** [0.004]
Observations	1225185	1225185	1225185	1757281	1757281	1757281	2982466
R ²	0.01	0.89	0.893	0.019	0.89	0.893	0.896

Robust standard errors in brackets - *** p<0.01, ** p<0.05, * p<0.1

Replicating the estimates by birth year we observe that the age differential declines among younger cohorts. The effect is larger when considering total pension incomes.

Income effect on age of death, by birth year cohort



If we want to retain the entire population, we can estimate the probability of dying (see table 4): the advantage of income position declines in most recent cohorts.

Table 4 – Probability of death – Italy 2014-2020 – linear probability model

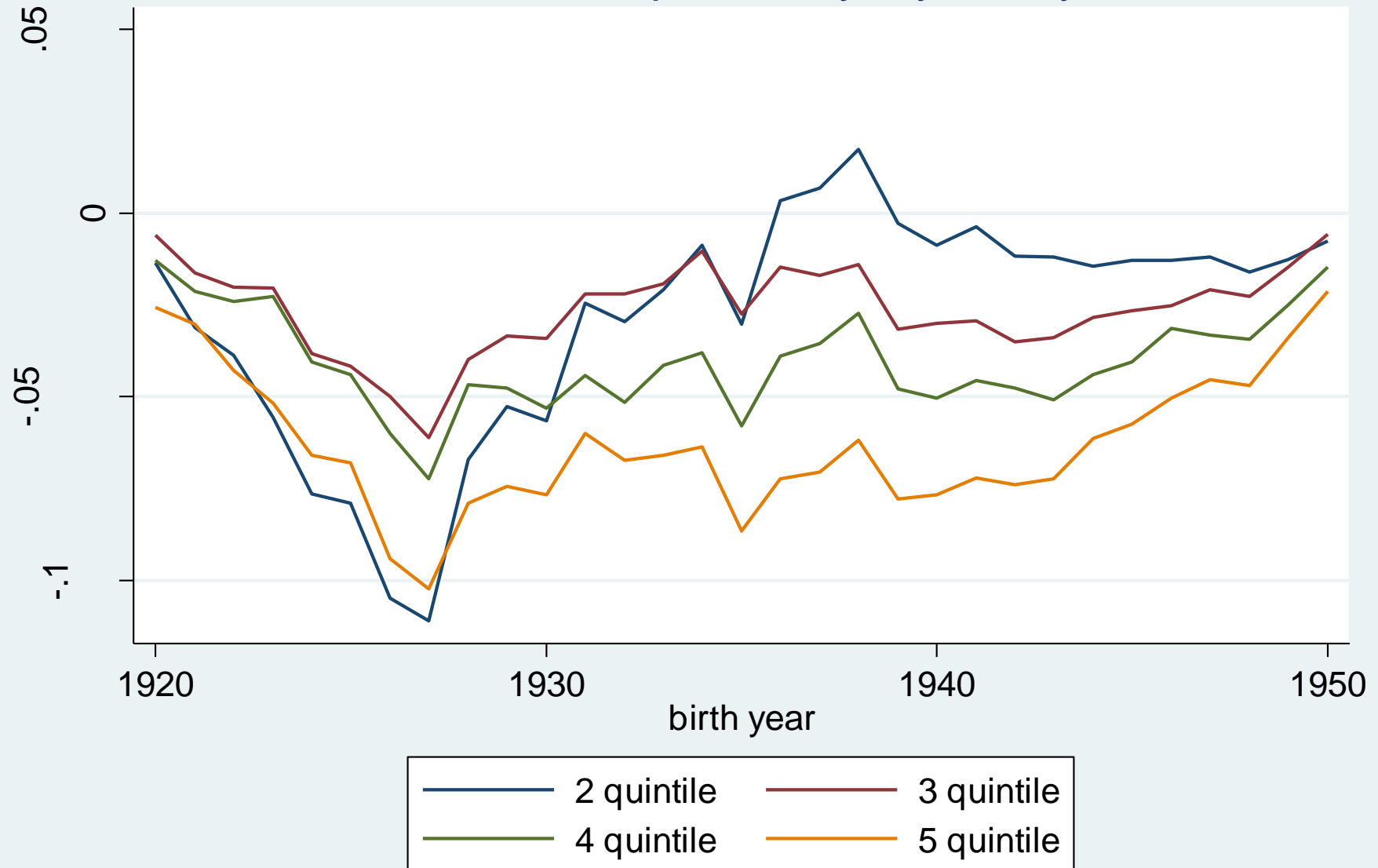
	1	2	3	4	5
dep.var: dead=1	men born 1920-39	men born 1940-59	women born 1920-39	women born 1940-59	all born 1920-60
2 nd quintile	-0.027*** [0.001]	-0.006*** [0.000]	-0.056*** [0.002]	-0.014*** [0.001]	-0.013*** [0.000]
3 rd quintile	-0.011*** [0.001]	-0.009*** [0.000]	-0.078*** [0.002]	-0.029*** [0.001]	-0.017*** [0.000]
4 th quintile	-0.017*** [0.001]	-0.012*** [0.000]	-0.105*** [0.002]	-0.043*** [0.001]	-0.027*** [0.000]
5 th quintile	-0.049*** [0.001]	-0.016*** [0.000]	-0.134*** [0.002]	-0.060*** [0.001]	-0.053*** [0.000]
female					0.085*** [0.000]
Observations	2427305	3324711	2263169	4270866	12286051
R ²	0.226	0.045	0.193	0.071	0.314

Robust standard errors in brackets - *** p<0.01, ** p<0.05, * p<0.1

Controls for birth year, region of residence, marital status, possible disability and (past) sector of employment included

By replicating year by year we notice a shrinking divide.

Income effect on death probability, by birth year cohort



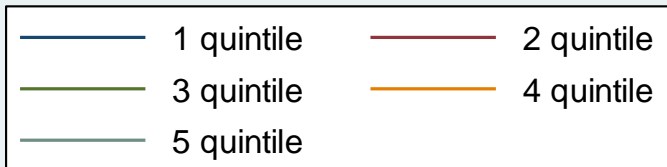
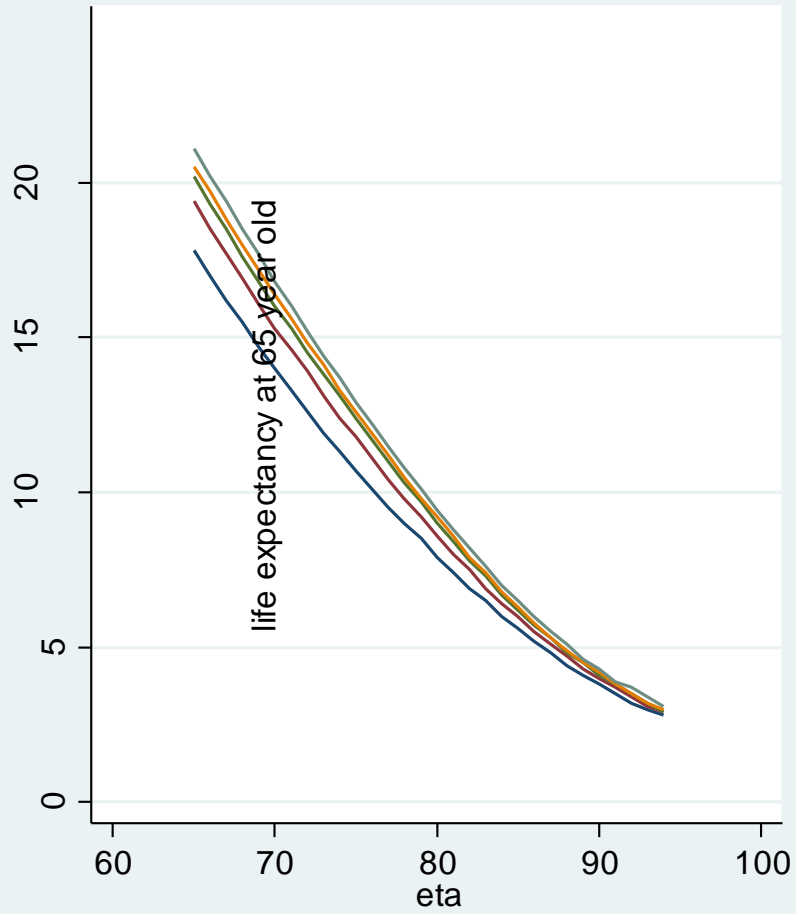
An alternative output is the study of life expectancy at a fixed age (usually 65 year old). Life expectancy is estimated from constructing mortality tables, considering that an individual aged t will survive 0.5 years with probability $(1 - q_t)$, 1.5 years with probability $[(1 - q_t) \cdot q_t + 1]$, 2.5 years with probability $[(1 - q_t)(q_t + 1)q_t + 2]$ and so on.

The life expectancy gap between top and bottom quintile is 1.7 at the age of 65 (both for men and women), becoming 2.2 for men and 1.0 for women at the age of 75 and declining to 0.9 and 0.4 respectively at the age of 85. These estimates are reported in the next table 5 and plotted in the graph.

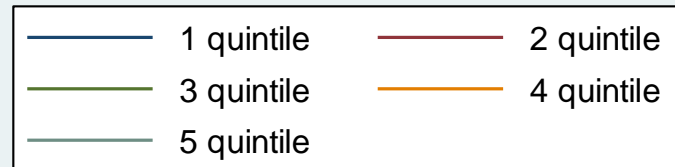
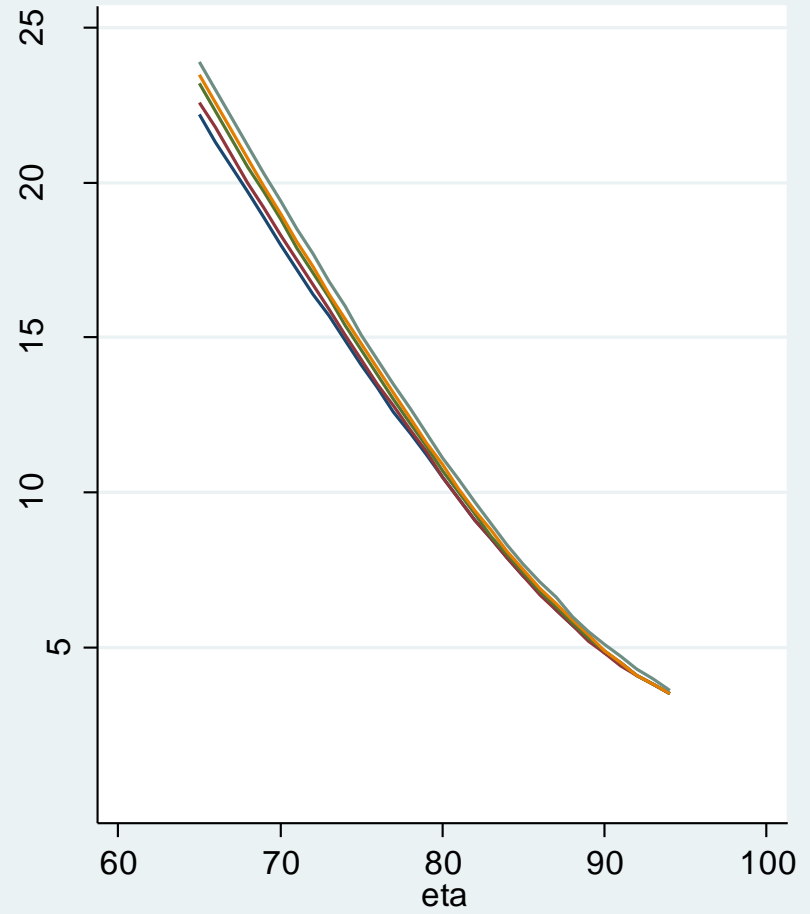
Table 5 – Life expectancy estimated from mortality tables

age	men 1 st quintile	men 2 nd quintile	men 3 rd quintile	men 4 th quintile	men 5 th quintile	women 1 st quintile	women 2 nd quintile	women 3 rd quintile	women 4 th quintile	women 5 th quintile
65	17.8	19.4	20.2	20.5	21.1	22.2	22.6	23.2	23.5	23.9
66	17.0	18.5	19.3	19.7	20.2	21.3	21.8	22.3	22.6	23.0
67	16.2	17.7	18.5	18.8	19.4	20.5	20.9	21.4	21.7	22.1
68	15.5	16.9	17.6	18.0	18.5	19.7	20.0	20.5	20.8	21.2
69	14.7	16.1	16.8	17.2	17.7	18.9	19.2	19.7	19.9	20.3
70	14.0	15.3	16.0	16.4	16.8	18.0	18.3	18.8	19.0	19.4
71	13.3	14.6	15.3	15.6	16.0	17.2	17.5	17.9	18.1	18.5
72	12.6	13.9	14.5	14.8	15.2	16.4	16.7	17.1	17.3	17.7
73	11.9	13.1	13.8	14.1	14.4	15.7	15.9	16.3	16.4	16.8
74	11.3	12.4	13.1	13.3	13.7	14.9	15.1	15.4	15.6	16.0
75	10.7	11.8	12.4	12.6	12.9	14.1	14.3	14.6	14.8	15.1
76	10.1	11.1	11.7	11.9	12.2	13.4	13.5	13.8	14.0	14.3
77	9.5	10.4	11.0	11.2	11.5	12.6	12.8	13.0	13.2	13.5
78	9.0	9.8	10.3	10.5	10.8	11.9	12.0	12.2	12.4	12.7
79	8.5	9.2	9.7	9.8	10.1	11.2	11.3	11.5	11.6	11.9
80	7.9	8.6	9.0	9.2	9.4	10.5	10.5	10.7	10.9	11.1
81	7.4	8.0	8.4	8.6	8.8	9.8	9.8	10.0	10.1	10.4
82	6.9	7.5	7.8	7.9	8.2	9.1	9.1	9.3	9.4	9.7
83	6.5	6.9	7.3	7.4	7.6	8.5	8.5	8.6	8.8	9.0
84	6.0	6.4	6.7	6.8	7.0	7.9	7.9	8.0	8.1	8.3
85	5.6	6.0	6.2	6.3	6.5	7.3	7.3	7.4	7.5	7.7
86	5.2	5.5	5.7	5.8	6.0	6.8	6.7	6.8	6.9	7.1
87	4.8	5.1	5.3	5.3	5.5	6.2	6.2	6.3	6.4	6.6
88	4.4	4.7	4.8	4.9	5.1	5.7	5.7	5.8	5.9	6.0
89	4.1	4.3	4.5	4.5	4.6	5.3	5.2	5.3	5.4	5.5
90	3.8	4.0	4.1	4.2	4.3	4.8	4.8	4.9	4.9	5.1
91	3.5	3.7	3.8	3.8	3.9	4.5	4.4	4.5	4.5	4.7
92	3.2	3.4	3.5	3.5	3.7	4.1	4.1	4.1	4.1	4.3
93	3.0	3.1	3.2	3.2	3.4	3.8	3.8	3.8	3.8	4.0
94	2.8	2.9	2.9	3.0	3.1	3.5	3.5	3.5	3.5	3.6

men



women



When considering the possible differential effect of COVID-19 on socio-economic factors associated to death probability, we consider two strategies:

① we estimate the death probabilities for two identically aged populations

Table 6 - Death probability during the pandemic

	1 born in 1950 observed alive in 2019	2 born in 1951 observed alive in 2020	3 born in 1945 observed alive in 2019	4 born in 1946 observed alive in 2020	5 born in 1940 observed alive in 2019	6 born in 1941 observed alive in 2020
2 nd quintile	-0.049** [0.019]	-0.042** [0.019]	-0.011 [0.017]	-0.049*** [0.014]	0.013 [0.014]	-0.017 [0.014]
3 rd quintile	-0.047** [0.020]	-0.023 [0.020]	-0.052*** [0.019]	-0.099*** [0.016]	-0.019 [0.014]	-0.056*** [0.014]
4 th quintile	-0.096*** [0.022]	-0.086*** [0.022]	-0.083*** [0.020]	-0.137*** [0.017]	-0.082*** [0.016]	-0.082*** [0.016]
5 th quintile	-0.138*** [0.023]	-0.144*** [0.023]	-0.157*** [0.021]	-0.231*** [0.018]	-0.117*** [0.017]	-0.166*** [0.017]
female	0.247*** [0.014]	0.302*** [0.015]	0.322*** [0.014]	0.392*** [0.012]	0.321*** [0.011]	0.359*** [0.011]
Observations	479961	453071	378663	494902	409504	371004
Pseudo R ²	0.0308	0.0794	0.024	0.0517	0.0184	0.0409

Robust standard errors in brackets - *** p<0.01, ** p<0.05, * p<0.1

Controls for region of residence, marital status, possible disability and (past) sector of employment included

There is a clear increase in death probability at all ages and all income positions, but it is highest in the middle of the pension distribution.

Table 7 - Estimated probability of death (percentage points)

quintile	born in 1950 observed alive in 2019	born in 1951 observed alive in 2020	born in 1945 observed alive in 2019	born in 1946 observed alive in 2020	born in 1940 observed alive in 2019	born in 1941 observed alive in 2020	2020-2019 aged 70	2020-2019 aged 75	2020-2019 aged 80
1 st quintile	0.844	0.950	1.405	1.696	2.429	2.886	0.106	0.290	0.457
2 nd quintile	0.906	1.046	1.754	2.042	3.230	3.709	0.139	0.288	0.479
3 rd quintile	1.062	1.250	1.882	2.260	3.478	3.915	0.188	0.378	0.437
4 th quintile	0.910	1.021	1.830	2.154	3.268	3.947	0.111	0.324	0.679
5 th quintile	0.835	0.916	1.533	1.744	3.020	3.302	0.081	0.211	0.282
Total	0.911	1.036	1.680	1.978	3.080	3.545	0.125	0.298	0.465

② we compute mortality tables for both years (2019-20) and observe variations in life expectancies.

Table 8 - Life expectancy at 65 year old – averages within quintiles

Income quintiles	2019		2020		difference %	
	men	women	men	women	men	women
Italy						
1 st quintile	17,8	22,2	16,9	21,1	-5,4%	-4,8%
2 nd quintile	19,4	22,6	18,2	21,6	-6,3%	-4,5%
3 rd quintile	20,2	23,2	18,7	22,1	-7,1%	-4,6%
4 th quintile	20,5	23,5	19,1	22,4	-6,9%	-4,6%
5 th quintile	21,1	23,9	19,9	23,1	-5,5%	-3,3%
TOTAL	19,8	23,1	18,6	22,1	-6,1%	-4,4%
<i>for comparison: ISTAT</i>	19,4	22,6				
Lombardy						
1 st quintile	18,0	22,4	15,8	20,4	-12,3%	-9,1%
2 nd quintile	19,5	22,8	17,1	20,9	-12,5%	-8,6%
3 rd quintile	20,3	23,3	17,6	21,4	-13,1%	-8,5%
4 th quintile	20,7	23,7	18,0	21,7	-12,9%	-8,4%
5 th quintile	21,2	24,2	18,8	22,4	-11,4%	-7,3%
TOTAL	19,8	23,3	17,5	21,4	-12,0%	-8,3%
Bergamo						
1 st quintile	17,9	22,3	14,1	19,0	-21,1%	-14,8%
2 nd quintile	19,4	22,7	15,4	19,5	-20,6%	-14,0%
3 rd quintile	20,2	23,3	16,0	20,1	-21,0%	-13,7%
4 th quintile	20,6	23,6	16,4	20,4	-20,5%	-13,5%
5 th quintile	21,2	24,1	17,2	21,1	-18,9%	-12,4%
TOTAL	19,7	23,2	15,8	20,1	-19,9%	-13,5%

Pandemic had heterogeneous impacts (hardest on 70-79 age cohorts, in bottom quintiles, living in Northern regions). Controlling for income position without age may be inadequate, since age distribution within quintiles is not identical.

Table 9 – Excess mortality due to Covid-19 - Dependent employee (FPLD) and self employed (AGO) old-age/seniority paid at 1/1/2020

age groups	old-age pensions	actual deaths	expected deaths	"Excess" deaths	% "Excess" death	resident population
Italy						
aged 60-69	1.728.038	14.834	12.618	2.216	17,6%	7.364.364
aged 70-79	3.159.873	76.246	63.339	12.907	20,4%	5.968.373
aged 80-89	2.161.509	167.160	143.218	23.942	16,7%	3.628.160
beyond 90	451.796	95.893	85.153	10.740	12,6%	791.478
TOTAL	7.501.216	354.133	304.327	49.806	16,4%	17.752.375
Lombardy						
aged 60-69	408.130	3.965	2.809	1.156	41,2%	1.189.118
aged 70-79	651.094	18.091	12.631	5.460	43,2%	996.209
aged 80-89	433.241	37.369	27.801	9.568	34,4%	609.477
beyond 90	94.847	22.372	17.684	4.688	26,5%	128.163
TOTAL	1.587.312	81.797	60.924	20.873	34,3%	2.922.967
Bergamo						
aged 60-69	52.685	636	368	268	72,8%	132.811
aged 70-79	71.020	2.540	1.413	1.127	79,8%	104.052
aged 80-89	41.523	4.518	2.726	1.792	65,7%	58.777
beyond 90	8.883	2.268	1.657	611	36,9%	11.846
TOTAL	174.111	9.962	6.163	3.799	61,6%	307.486

"Excess" mortality is computed by applying 2019 mortality tables to pensioners alive at 1/1/2020 and comparing them to actual deaths

Concluding remarks

We have confirmed that there is a death gradient associated to income.

The differences between top and bottom quintiles are significant when compared at the age of 65: 3.3 years for men and 1.7 for women. Then they decline with age, in a quicker way for women than for men.

With the pandemic we have observed a generalized decline in life expectancy by approximately 1 year (3-4 year in Bergamo), which is highest in the bottom quintiles.

The use of identical divisor coefficients irrespective of income position (proxying for life histories) seems questionable. Why not change the retirement ages by income positions (instead of spending efforts in identifying fatiguing occupations *lavori usuranti*)?

Table 10 – Old-age pensions paid at January 1st in each year – Dependent employee (FPLD) and self employed (AGO) – population born between 1920 and 1960

age cohort	2014		2015		2016		2017		2018		2019		2020		2021	
	number	avg age at Jan 1 st	number	avg age at Jan 1 st	number	avg age at Jan 1 st	number	avg age at Jan 1 st	number	avg age at Jan 1 st	number	avg age at Jan 1 st	number	avg age at Jan 1 st	number	avg age at Jan 1 st
1920	32 695	93.5	26 304	94.5	19 994	95.5	15 275	96.5	10 983	97.5	7 733	98.5	5 186	99.5	3 265	100.5
1921	43 563	92.5	35 883	93.5	28 406	94.5	22 184	95.5	16 522	96.5	12 239	97.5	8 726	98.5	5 751	99.5
1922	55 026	91.5	46 152	92.5	37 253	93.5	29 985	94.5	22 988	95.5	17 292	96.5	12 729	97.5	8 737	98.5
1923	69 592	90.5	59 539	91.5	49 240	92.5	40 442	93.5	31 849	94.5	24 717	95.5	18 718	96.5	13 195	97.5
1924	83 376	89.5	72 701	90.5	61 333	91.5	51 522	92.5	41 665	93.5	33 107	94.5	25 825	95.5	18 843	96.5
1925	101 210	88.5	89 572	89.5	77 130	90.5	65 992	91.5	54 636	92.5	44 576	93.5	35 559	94.5	26 719	95.5
1926	118 780	87.5	106 661	88.5	93 390	89.5	81 211	90.5	68 741	91.5	57 303	92.5	47 000	93.5	36 304	94.5
1927	140 517	86.5	127 950	87.5	113 928	88.5	100 765	89.5	87 022	90.5	74 260	91.5	62 099	92.5	49 507	93.5
1928	158 516	85.5	145 859	86.5	131 822	87.5	118 320	88.5	103 790	89.5	90 151	90.5	76 915	91.5	62 433	92.5
1929	178 188	84.5	165 650	85.5	151 642	86.5	138 286	87.5	123 427	88.5	109 073	89.5	94 720	90.5	79 386	91.5
1930	212 547	83.5	199 328	84.5	184 566	85.5	170 065	86.5	154 188	87.5	138 552	88.5	122 627	89.5	104 670	90.5
1931	222 479	82.5	210 667	83.5	197 019	84.5	183 611	85.5	168 355	86.5	153 239	87.5	137 634	88.5	119 735	89.5
1932	235 166	81.5	223 944	82.5	211 139	83.5	198 295	84.5	184 230	85.5	169 821	86.5	154 833	87.5	137 148	88.5
1933	256 252	80.5	245 528	81.5	233 006	82.5	220 621	83.5	206 756	84.5	192 363	85.5	177 328	86.5	159 551	87.5
1934	273 136	79.5	263 030	80.5	251 599	81.5	239 918	82.5	226 629	83.5	212 983	84.5	198 571	85.5	181 015	86.5
1935	288 553	78.5	278 988	79.5	268 343	80.5	257 453	81.5	245 050	82.5	232 208	83.5	218 314	84.5	201 261	85.5
1936	286 532	77.5	278 539	78.5	269 060	79.5	259 770	80.5	248 994	81.5	237 779	82.5	225 413	83.5	210 091	84.5
1937	311 586	76.5	303 839	77.5	294 831	78.5	285 725	79.5	275 332	80.5	264 261	81.5	252 314	82.5	237 545	83.5
1938	341 392	75.5	333 791	76.5	325 157	77.5	316 435	78.5	306 358	79.5	295 589	80.5	284 003	81.5	269 583	82.5
1939	353 254	74.5	346 417	75.5	338 661	76.5	330 469	77.5	321 333	78.5	311 431	79.5	300 724	80.5	287 213	81.5
1940	356 839	73.5	350 498	74.5	343 420	75.5	336 081	76.5	327 609	77.5	318 793	78.5	309 081	79.5	296 375	80.5
1941	325 266	72.5	320 323	73.5	314 574	74.5	308 501	75.5	301 593	76.5	294 228	77.5	286 471	78.5	276 494	79.5
1942	320 301	71.5	315 887	72.5	310 854	73.5	305 448	74.5	299 227	75.5	292 615	76.5	285 619	77.5	276 421	78.5
1943	317 016	70.5	313 188	71.5	308 847	72.5	304 170	73.5	298 867	74.5	293 221	75.5	287 081	76.5	278 929	77.5
1944	313 029	69.5	309 923	70.5	306 380	71.5	302 555	72.5	297 995	73.5	292 976	74.5	287 530	75.5	280 470	76.5
1945	294 313	68.5	291 733	69.5	288 813	70.5	285 701	71.5	281 980	72.5	277 906	73.5	273 394	74.5	267 188	75.5
1946	382 871	67.5	380 473	68.5	377 228	69.5	373 880	70.5	370 123	71.5	365 489	72.5	360 129	73.5	353 038	74.5
1947	359 922	66.5	370 747	67.5	368 726	68.5	365 855	69.5	362 756	70.5	359 499	71.5	355 042	72.5	348 782	73.5
1948	330 760	65.5	355 171	66.5	366 965	67.5	365 138	68.5	362 409	69.5	359 552	70.5	356 703	71.5	351 078	72.5
1949	300 627	64.5	301 474	65.5	326 975	66.5	338 449	67.5	337 086	68.5	334 731	69.5	332 001	70.5	327 457	71.5
1950	282 797	63.5	284 049	64.5	285 965	65.5	299 838	66.5	325 973	67.5	324 907	68.5	322 845	69.5	318 918	70.5
1951	243 591	62.5	246 286	63.5	251 839	64.5	254 812	65.5	273 705	66.5	304 025	67.5	303 430	68.5	300 202	69.5
1952	134 127	61.5	147 197	62.5	166 930	63.5	182 373	64.5	207 480	65.5	235 982	66.6	283 513	67.5	280 858	68.5
1953	100 944	60.5	117 574	61.5	138 908	62.5	150 520	63.5	162 330	64.5	169 912	65.5	181 900	66.5	180 358	67.5
1954	80 172	59.5	92 255	60.5	113 620	61.5	129 740	62.5	145 533	63.5	157 111	64.5	175 337	65.5	174 024	66.5
1955	55 114	58.5	67 780	59.5	89 646	60.5	104 391	61.5	123 749	62.5	138 988	63.5	163 742	64.5	162 595	65.5
1956	27 483	57.6	41 962	58.6	66 894	59.5	82 371	60.5	100 082	61.5	118 640	62.5	151 586	63.5	150 674	64.5
1957	8 720	56.6	16 818	57.6	41 633	58.6	59 143	59.5	79 593	60.5	97 262	61.5	126 864	62.5	126 169	63.5
1958	3 184	55.5	5 747	56.6	15 837	57.6	32 492	58.6	54 991	59.5	73 572	60.5	87 713	61.5	87 290	62.5
1959	2 080	54.5	2 433	55.5	5 277	56.6	11 351	57.6	27 834	58.6	48 399	59.5	66 540	60.5	66 253	61.5
1960	1 450	53.5	1 677	54.5	2 089	55.5	3 449	56.6	10 377	57.6	26 728	58.6	44 856	59.5	44 706	60.5
Total	8 002 966	73.5	7 893 537	74.5	7 828 939	75.5	7 722 602	76.5	7 650 140	77.5	7 563 213	78.5	7 500 615	79.5	7 160 231	80.5

Table 11 – Old-age pensions paid at January 1st and cancelled during the year – Dependent employee (FPLD) and self employed (AGO) – population born between 1920 and 1960

age cohort	2014		2015		2016		2017		2018		2019		2020		2021	
	number	avg age at Jan 1 st	number	avg age at Jan 1 st	number	avg age at Jan 1 st	number	avg age at Jan 1 st	number	avg age at Jan 1 st	number	avg age at Jan 1 st	number	avg age at Jan 1 st	number	avg age at Jan 1 st
1920	6 325	93.5	6 206	94.5	4 705	95.5	4 193	96.5	3 152	97.5	2 508	98.5	1 895	99.5	243	100.5
1921	7 636	92.5	7 349	93.5	6 238	94.5	5 486	95.5	4 223	96.5	3 437	97.5	2 924	98.5	420	99.5
1922	8 808	91.5	8 796	92.5	7 239	93.5	6 901	94.5	5 528	95.5	4 498	96.5	4 014	97.5	571	98.5
1923	9 938	90.5	10 218	91.5	8 801	92.5	8 489	93.5	6 997	94.5	5 894	95.5	5 559	96.5	795	97.5
1924	10 754	89.5	11 208	90.5	9 962	91.5	9 725	92.5	8 374	93.5	7 206	94.5	7 008	95.5	994	96.5
1925	11 598	88.5	12 417	89.5	11 228	90.5	11 233	91.5	9 923	92.5	8 863	93.5	8 958	94.5	1 314	95.5
1926	12 125	87.5	13 216	88.5	12 298	89.5	12 354	90.5	11 254	91.5	10 270	92.5	10 814	93.5	1 593	94.5
1927	12 544	86.5	14 059	87.5	13 341	88.5	13 663	89.5	12 567	90.5	12 047	91.5	12 915	92.5	1 938	93.5
1928	12 742	85.5	14 080	86.5	13 591	87.5	14 457	88.5	13 533	89.5	13 244	90.5	14 765	91.5	2 228	92.5
1929	12 612	84.5	14 073	85.5	13 528	86.5	14 833	87.5	14 279	88.5	14 242	89.5	15 726	90.5	2 674	91.5
1930	13 251	83.5	14 820	84.5	14 748	85.5	15 885	86.5	15 524	87.5	16 018	88.5	18 426	89.5	2 959	90.5
1931	11 890	82.5	13 695	83.5	13 716	84.5	15 207	85.5	15 102	86.5	15 570	87.5	18 409	88.5	3 086	89.5
1932	11 258	81.5	12 950	82.5	13 013	83.5	14 144	84.5	14 351	85.5	15 073	86.5	18 245	87.5	3 065	88.5
1933	10 848	80.5	12 532	81.5	12 574	82.5	13 948	83.5	14 299	84.5	15 173	85.5	18 382	86.5	3 266	87.5
1934	10 177	79.5	11 517	80.5	11 892	81.5	13 416	82.5	13 520	83.5	14 585	84.5	18 243	85.5	3 174	86.5
1935	9 629	78.5	10 750	79.5	11 093	80.5	12 514	81.5	12 880	82.5	13 980	83.5	17 602	84.5	3 055	85.5
1936	8 116	77.5	9 563	78.5	9 553	79.5	10 871	80.5	11 245	81.5	12 442	82.5	15 946	83.5	2 733	84.5
1937	7 953	76.5	9 119	77.5	9 315	78.5	10 547	79.5	11 111	80.5	12 028	81.5	15 420	82.5	2 717	83.5
1938	7 791	75.5	8 788	76.5	9 027	77.5	10 230	78.5	10 841	79.5	11 631	80.5	15 065	81.5	2 715	82.5
1939	7 047	74.5	7 951	75.5	8 471	76.5	9 340	77.5	9 957	78.5	10 774	79.5	14 102	80.5	2 529	81.5
1940	6 552	73.5	7 290	74.5	7 734	75.5	8 620	76.5	8 873	77.5	9 938	78.5	13 229	79.5	2 254	80.5
1941	5 298	72.5	5 948	73.5	6 463	74.5	7 067	75.5	7 466	76.5	7 927	77.5	10 440	78.5	1 833	79.5
1942	4 743	71.5	5 330	72.5	5 753	73.5	6 405	74.5	6 744	75.5	7 190	76.5	9 607	77.5	1 696	78.5
1943	4 269	70.5	4 659	71.5	5 064	72.5	5 594	73.5	5 800	74.5	6 345	75.5	8 470	76.5	1 504	77.5
1944	3 685	69.5	4 043	70.5	4 316	71.5	4 861	72.5	5 227	73.5	5 594	74.5	7 376	75.5	1 285	76.5
1945	3 208	68.5	3 593	69.5	3 716	70.5	4 073	71.5	4 300	72.5	4 771	73.5	6 385	74.5	1 134	75.5
1946	3 768	67.5	4 076	68.5	4 307	69.5	4 621	70.5	5 087	71.5	5 708	72.5	7 417	73.5	1 311	74.5
1947	3 014	66.5	3 516	67.5	3 848	68.5	4 293	69.5	4 536	70.5	4 982	71.5	6 526	72.5	1 131	73.5
1948	2 509	65.5	2 960	66.6	3 392	67.5	3 688	68.5	4 035	69.5	4 284	70.5	5 915	71.5	990	72.5
1949	1 960	64.5	2 181	65.6	2 647	66.5	2 986	67.5	3 275	68.5	3 537	69.5	4 751	70.5	826	71.5
1950	1 648	63.5	1 868	64.5	1 981	65.5	2 373	66.6	2 895	67.5	3 059	68.5	4 073	69.5	715	70.5
1951	1 263	62.5	1 439	63.5	1 452	64.6	1 668	65.5	2 005	66.6	2 516	67.5	3 328	68.5	630	69.5
1952	676	61.5	853	62.5	980	63.6	1 169	64.6	1 445	65.5	1 754	66.6	2 750	67.5	502	68.5
1953	461	60.5	569	61.5	732	62.5	868	63.6	1 026	64.5	1 120	65.5	1 618	66.5	295	67.5
1954	307	59.5	416	60.6	543	61.5	656	62.5	801	63.5	978	64.5	1 390	65.5	246	66.5
1955	200	58.5	261	59.5	339	60.5	451	61.5	613	62.5	727	63.5	1 179	64.5	211	65.5
1956	94	57.5	144	58.5	233	59.6	337	60.6	429	61.5	574	62.6	967	63.6	165	64.6
1957	25	56.7	56	57.6	137	58.6	208	59.5	317	60.5	412	61.5	723	62.5	124	63.6
1958	10	55.5	22	56.6	39	57.5	100	58.5	180	59.6	259	60.5	442	61.5	77	62.5
1959	6	54.5	3	55.5	14	56.6	27	57.5	83	58.6	182	59.5	295	60.5	52	61.6
1960	3	53.7	4	54.6	2	55.2	16	56.6	38	57.6	76	58.5	146	59.6	28	60.7
Total	246 741	73.5	272 538	74.5	268 025	75.5	287 517	76.5	283 835	77.5	291 416	78.5	351 445	79.5	59 078	80.5