SAPIENZA
UNIVERSITÀ DI ROMA

PSDE, Paris Seminar in Demographic Economics
Palais Brongniart

Paris, 3 February 2015

Differential mortality and the design of the Italian system of public pensions

Graziella Caselli

graziella.caselli@uniroma1.it

Department of Statistical Sciences
Sapienza University of Rome

The outline

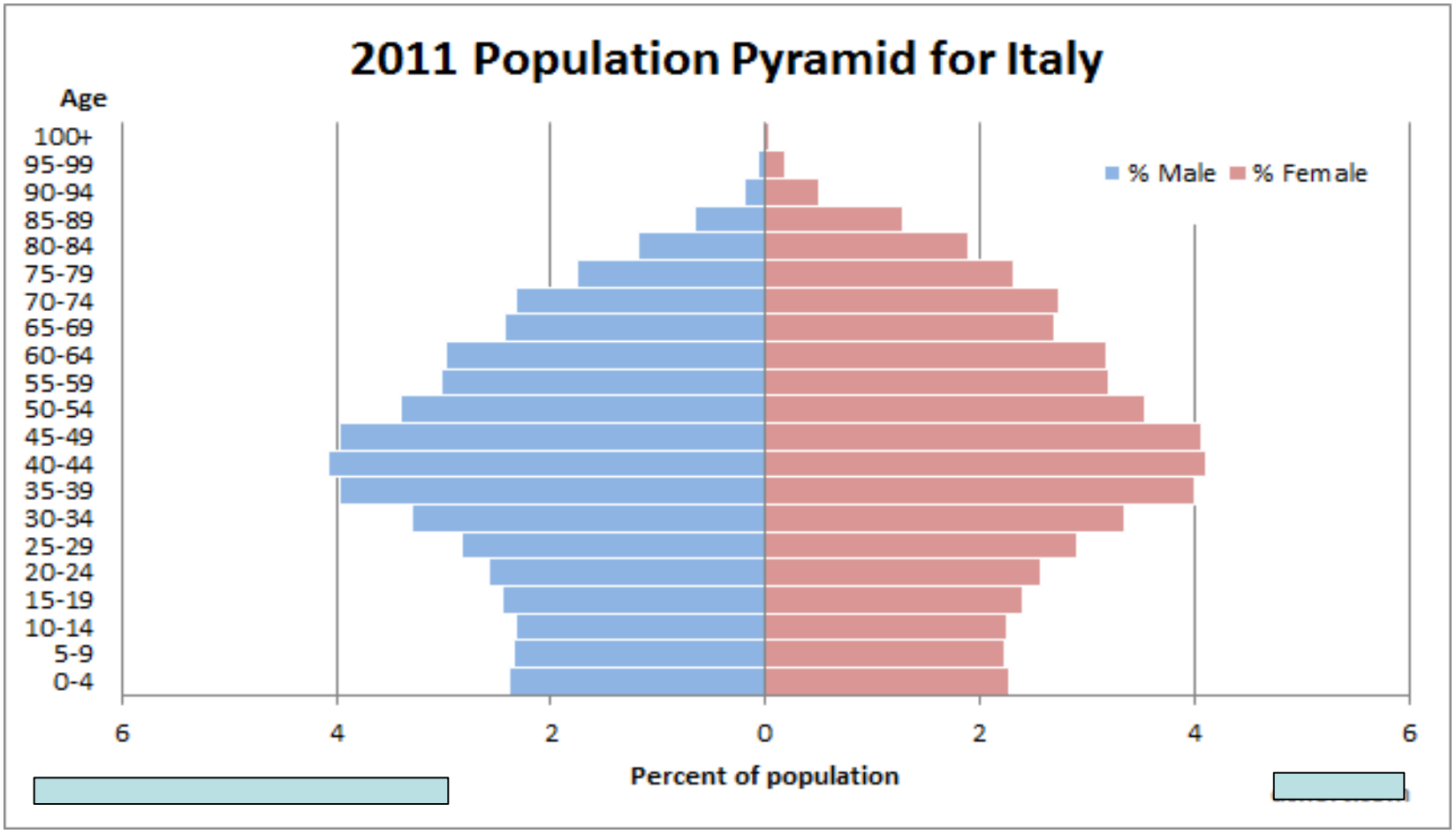
- ✓ POPULATION DYNAMIC
  and survival in old age, for Italy

- ✓ DEFINITION
  of Conversion Factors for calculating annuity pension

- ✓ ITALIAN PENSION REFORMS; A long history

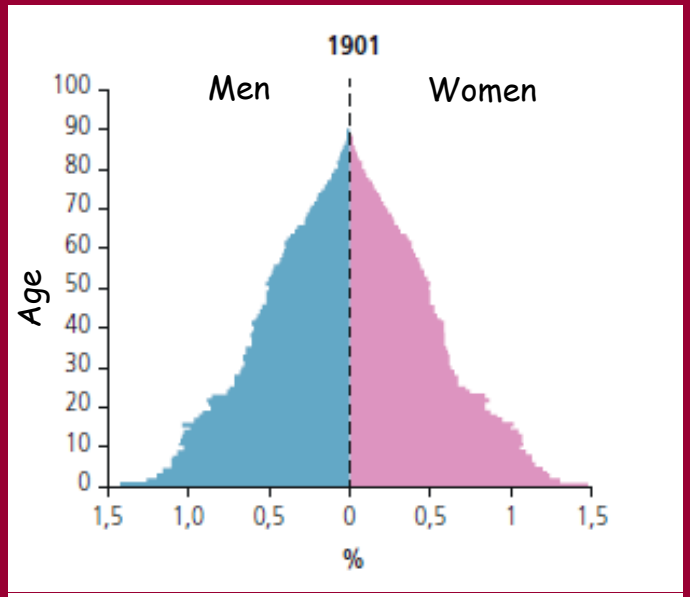
The outline

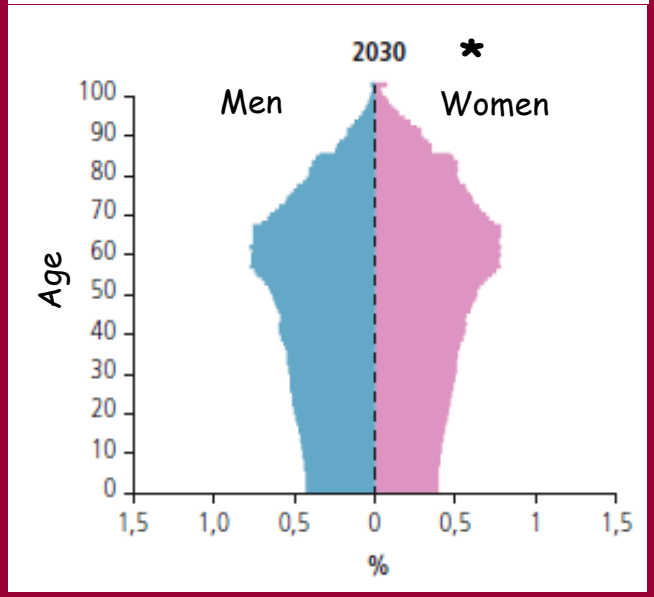
- ✓ The aim of this presentation is to analyze the IMPACT of demographic variables on the design of Italian System of Public Pensions. In particular, I will analize the issue of actuarial fairness of the new Italian Public Pension System in view of the trends in old age mortality and also of the survival differences by gender … and education


2011 Population Pyramid for Italy
Age
100+
95-99
90-94
85-89
80-84
75-79
70-74
65-69
60-64
55-59
50-54
45-49
40-44
35-39
30-34
25-29
20-24
15-19
10-14
5-9
0-4
% Male
% Female
6
4
2
0
2
4
6
Percent of population

Pyramids of the Italian population by sex. Years: 1901, 1951, 2009 and 2030* (%)

Source: My own elaboration based on Human Mortality Database and Istat (HMD, 2010; Istat, 2008 & 2010)





* Projections ISTAT, medium variant

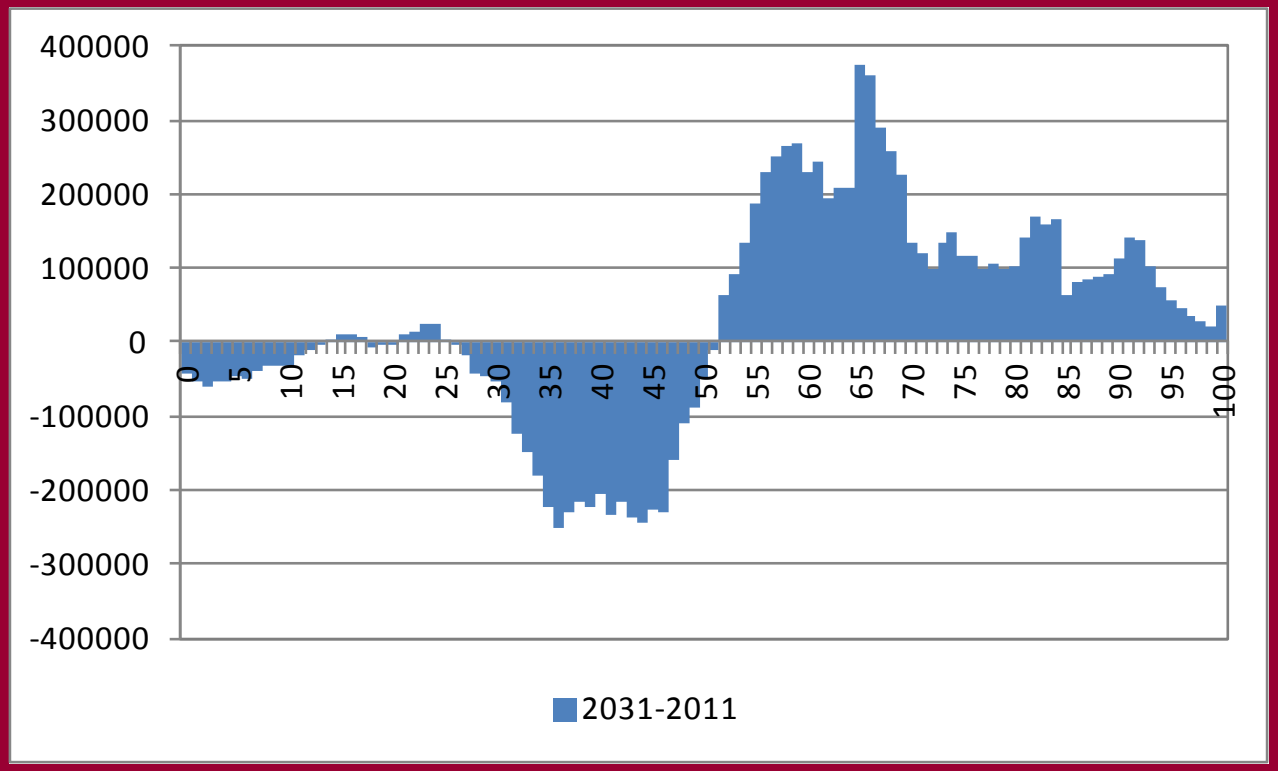
Population age structure by major age groups (absolute values in per thousands and percentage values). Italy. Years: 1951, 2014 and 2030 (medium variant)

Age	01.01.1951		01.01. 2014		Projected: 01.01.2030	
	Population	Per cent/T	Population	Per cent/T	Population	Per cent/T
0-14	12 362	26.5	8 448	13.9	8 009	12.9
15-64	30 442	65.3	39 320	64. 7	37 679	60.6
65 +	3 804	8.2	13 015	21.4	16 441	26.5
Total	46 608	100.0	60 783	100.0	62 129	100.0

Men: 18.7%
Women: 23.6%

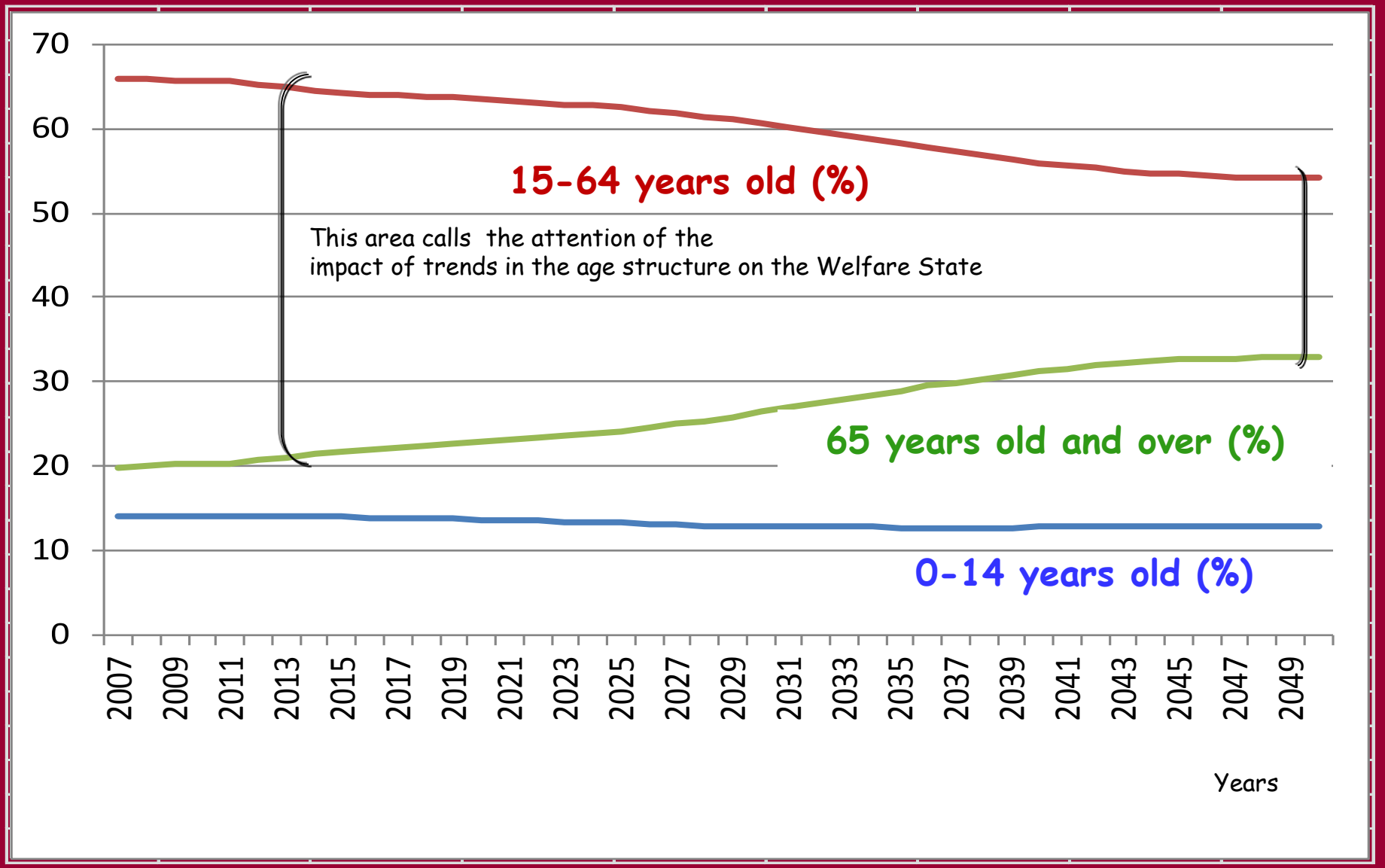
Source: Istat database

Absolute differences in Italian population, 2031 - 2011



Source: elaboration on ISTAT data http://demo.istat.it

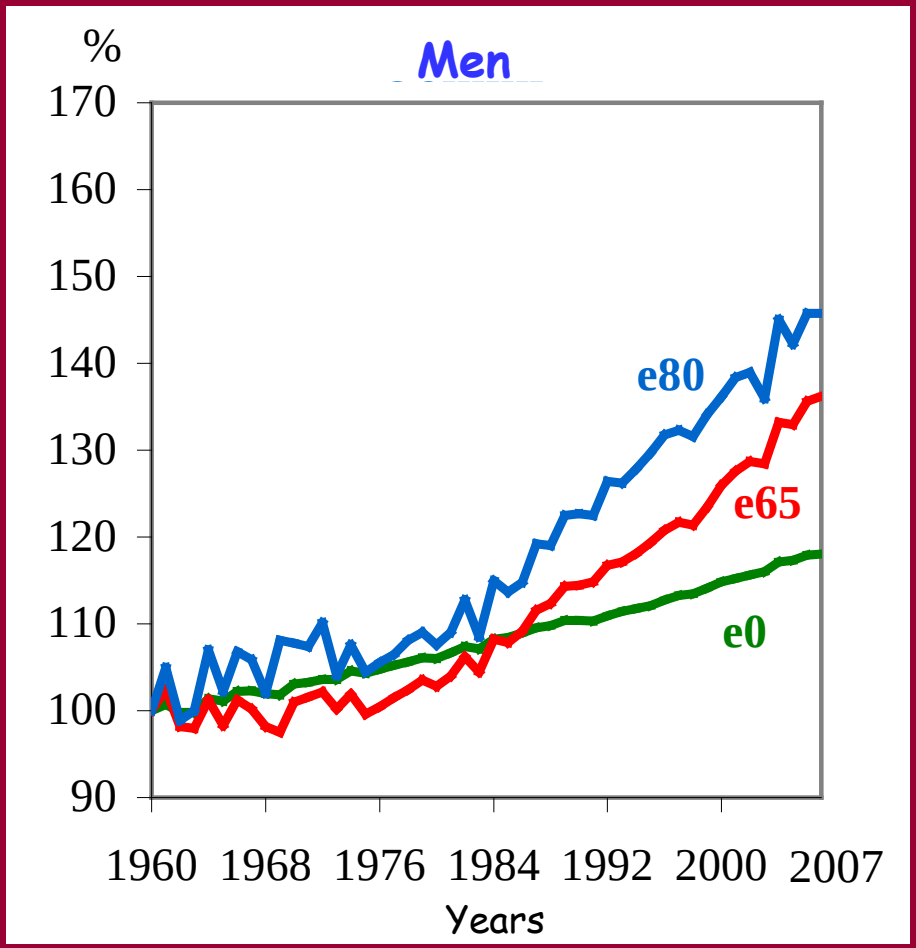
Population projections by age groups from 2007 to 2050. Italy (percentage values)

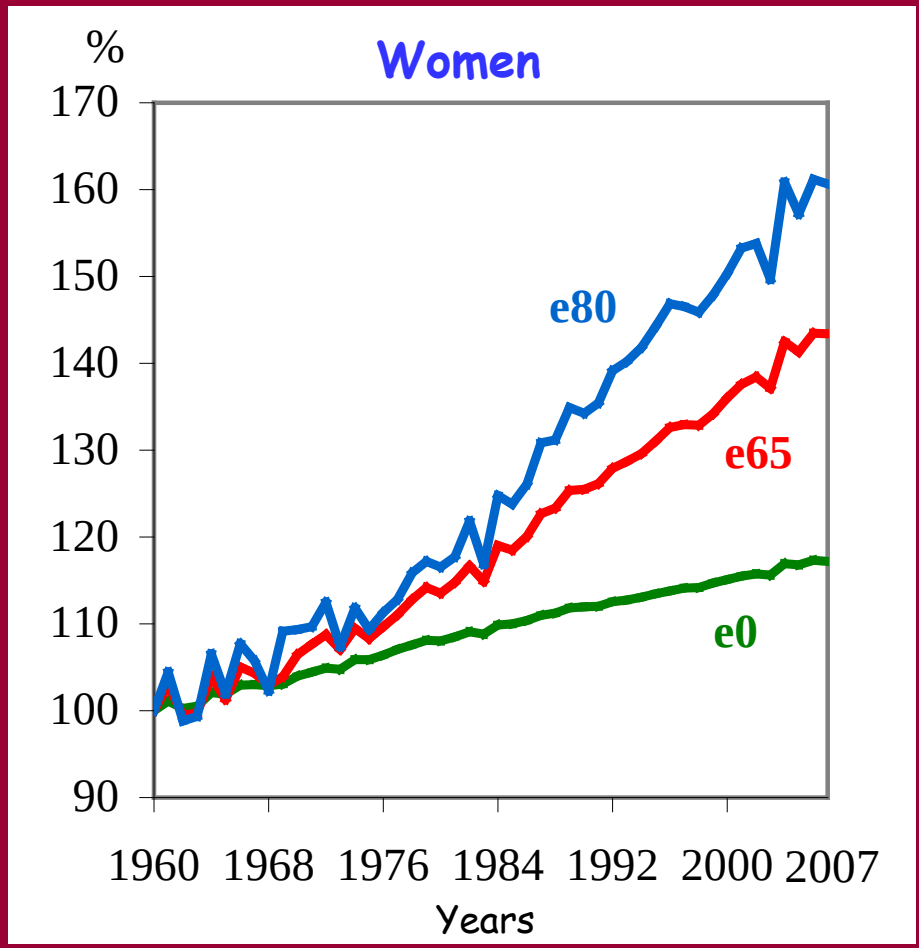


Source: My own elaboration of ISTAT data (2014)

Increasing life expectancy for the oldest old

Index number (1960 = 100) of life expectancy at birth (e0), at 65 (e65) and at 80 (e80) by sex. Italy,1960 -2008





Mortality decline at older ages has the greatest impact on longevity increase

Source: own Elaboration on Human Mortality Database and ISTAT, 2013

Life expectancy at birth and at 65 years from 1995 to 2050 and differences between female and male e65

Years	Men		Women		e65 (women-men)
	e_0	e_{65}	e_0	e_{65}	
1995	74.8	15.7	81.1	19.6	3.9
2012	79.6	18.3	84.4	21.9	3.6
2020*	80.7	19.4	86.1	23.3	3.9
2050*	84.5	22.2	89.5	26.0	3.8
2050**	86.8	24.1	91.6	27.9	3.8
Diff. 2050* -1995	9.7	6.5	8.4	6.4	

* Projection: Medium variant

** Low variant

Please pay attention

Source: My own elaboration of ISTAT data (2014)

continue …

Life expectancy at age 15, 35 and 65 by education and differences between level of education (high and low) Year 2004. Men and women. Italy

	Men		Diff. High – Low (in years)	Women		Diff. High – Low (in years)
	Level of education			Level of education		
	Low	High		Low	High	
e_{15}	62.1	69.3	*7.2*	68.4	74.8	*6.4*
e_{35}	43.1	49.8	*6.8*	48.9	55.0	*6.1*
e_{65}	16.9	21.9	*4.9*	21.1	26.5	*5.4*

***N.B. Today e65 is 18.3 for men and 21.9 for women:
Dif. = *3.6*

Source: Cnel-Cer, 2011

Life expectancy at age 65 by social class. Period 2002-2005. Men and women. England and Wales

	Men		Diff. High – Low (in years)	Women		Diff. High – Low (in years)
	Social class			Social class		
	Low*	High**		Low*	High**	
e_{65}	14.1	18.3	*4.2*	17.7	22.0	*4.3*

* Social class V = manual worker

** Social class I = engineer, doctors, etc.

Source: ONS Longitudinal Study, 2007

Welfare system reform

Many reforms of the welfare system have been introduced by Italian governments in order to face the aging problem and the relative sustainability of pensions expenditure, but the most important has been the so-called "Dini reform"
(Law no. *335/1995*)

Welfare system reform

… the 1995 reform changed the pay-as-you-go public pension system from a defined-benefit to a defined-contribution scheme based on the principle of actuarial fairness (that is, equity of the internal real rate of return from social security for individuals that only differ in their retirement age) and imitating some features of private insurance. (The reform would be fully phased in around 2030-2035).

Welfare system reform

The Dini reform is built on the principle of actuarial fairness, not enough consideration has been given to the fact that the latter can only be guaranteed on average and that, at the individual level, deviations from the parameters assumed by the lawmakers may translate into large deviations from the "target" internal rate of return.

Welfare system reform

In particular, because the survival probabilities used by the lawmakers are, to a first approximation, those of an average Italian (irrespective of gender or any other characteristic except age), the system introduced by the Dini reform can only be actuarially fair for those Italians whose survival probabilities happen to coincide with the average ones. For all the others, the system is more or less than actuarially fair depending on whether their survival probabilities are above or below the average.

continue … … …

The system is designed to guarantee, on average, an internal rate of return equal to the long-run growth rate of gross domestic product, assumed to be equal to 1.5 percent per year in real terms (taking into account the difference between inflation and the discount rate of the benefit pension).

In the new system, pension benefits depend on:

1) the age at retirement
2) the capitalized value of lifetime social security contributions (M)
3) this (M) is converted into a real pension annuity (D_x) using a set of legislated coefficients, or **Conversion Factors (Ctf_x)** (**computed** by taking into account, among other things, **average survival probabilities at the various ages**).

LEGISLATED CONVERSION FACTORS

"The *legislated conversion factors*" were computed from age 57 (the early retirement age) to age 65. The conversion factor increases with age at retirement over the 57-65 age range, and is the same for men and women.

First, the calculation of the conversion factors introduced by the Dini reform will be shown, along with a close approximation to the unknown formula with which they were computed.

Secondly, the impact of a further decline in elderly mortality over the next few decades will be evaluated.

Present value of an annuity "D_x"

1st Annual pension benefits at retirement:

$$P = M * Ctf_x$$

Capitalized value of lifetime social security contributives

Legislated conversion factors for retirement at age x

$$Ctf_x = \frac{1}{D_x}$$

Present value of an annuity

To avoid gender disparities

$$Ctf_x = \frac{Ctf_{x,m} + Ctf_{x,f}}{2}$$

continued ……

$$Ctf_x = \frac{1}{D_x} = \frac{1}{\left[a_x^{v} + A_x^{(v,f)}(\gamma)\right]^{*}}$$

The present value of a real annuity of one euro paid to the pensioner until his/her death

The present value of the corresponding annuity subsequently paid to the surviving spouse

Legislated conversion factors

TABLE A. *(law n. 335/95, article 1, paragraph 6)*

Present value D_x	Age	Values $Ctf_x = \frac{1}{D_x}$
21.1869	57	4.720%
20.5769	58	4.860%
19.9769	59	5.006%
19.3669	60	5.163%
18.7469	61	5.334%
18.1369	62	5.514%
17.5269	63	5.706%
16.9169	64	5.911%
16.2969	65	6.136%
Annual real discount rate = 1.5%		

Components of D_x

For each gender and each retirement age, we consider the following approximation of the formula adopted by the lawmakers:

$$D_x = \left[a_x^{v} + A_x^{(v,f)}(\gamma) \right]$$

$$= \left\{ \sum_{t=0}^{w-1-x} \frac{l_{x+t}^{v}}{l_x^{v}} \cdot (1+i)^{-t} + \beta \cdot \sum_{t=0}^{w-1-x} \left[\frac{l_{x+t}^{v}}{l_x^{v}} \cdot q_{x+t}^{v} \cdot a_{x+t+1}^{F} \cdot (1+i)^{-(t+1)} \right] \right\} - 0{,}4231$$

refers to pensioner (direct pension)

refers to surviving spouse (indirect pension)

Actuarial adjustment factor that takes into account that pensions were paid every two months

$$D_x = \left[a_x^{v} + A_x^{(v,f)}(\gamma) \right]$$

$$= \sum_{t=0}^{w-1-x} \frac{l_{x+t}^{v}}{l_x^{v}} \cdot (1+i)^{-t}$$

Annual real discount rate (set equal to 1.5%, assumed to be equal to the long-run annual growth rate of gross domestic product in real terms)

FINANCIAL PARAMETER

pensioner's probability at age x of being alive at age x+t

DEMOGRAPHIC PARAMETER

$$D_x = \left[a_x^{v} + A_x^{(v,f)}(\gamma) \right]$$

$$= \beta \cdot \sum_{t=0}^{w-1-x} \left[\frac{l_{x+t}^{v}}{l_x^{v}} \cdot q_{x+t}^{v} \cdot a_{x+t+1}^{F} \cdot (1+i)^{-(t+1)} \right]$$

$\frac{l_{x+t}^{v}}{l_x^{v}}$: the pensioner's probability at age x of being alive at age x+t

a_{x+t+1}^{F}: present value of a real annuity of one euro paid to the surviving spouse (if there is one) after the pensioner's death at age x+t+1

q_{x+t}^{v}: probability of dying between age x+t and age x+t+1

i: Annual real discount rate (set equal to 1.5%, assumed to be equal to the long-run annual growth rate of gross domestic product in real terms) → FINANCIAL PARAMETER

DEMOGRAPHIC PARAMETERS

β: is the fraction of the pension paid out to the surviving spouse (if there is one)

$$D_x = \left[a_x^{v} + A_x^{(v,f)}(\gamma) \right]$$

Refers to surviving spouse

$$= \beta \cdot \sum_{t=0}^{w-1-x} \left[\frac{l_{x+t}^{v}}{l_x^{v}} \cdot q_{x+t}^{v} \cdot a_{x+t+1}^{F} \cdot (1+i)^{-(t+1)} \right]$$

$$a_{x+t+1}^{F} = \gamma \cdot \theta_{x+t+1}^{F} \cdot \sum_{s=0}^{w-y-t-2} \frac{l_{y+t+1+s}^{ved}}{l_{y+t+1}^{ved}} \cdot (1+i)^{-s}$$

Fraction of the annuity paid to the widow set equal to 60%

Pensioner's probability of leaving a family after his/her death

The widow's pensioner probability at age y of being alive at age y+t+1

$$D_x = \left[a_x^{v} + A_x^{(v,f)}(\gamma) \right]$$

Refers to surviving spouse

$$= \beta \cdot \sum_{t=0}^{w-1-x} \left[\frac{l_{x+t}^{v}}{l_x^{v}} \cdot q_{x+t}^{v} \cdot a_{x+t+1}^{F} \cdot (1+i)^{-(t+1)} \right]$$

$$a_{x+t+1}^{F} = \gamma \cdot \theta_{x+t+1}^{F} \cdot \sum_{s=0}^{w-y-t-2} \frac{l_{y+t+1+s}^{ved}}{l_{y+t+1}^{ved}} \cdot (1+i)^{-s}$$

The formula takes into consideration only the widow(er) excluding other family members

Demographic and financial parameters

- Upper age at death — **$w = 100$**
- Survival probabilities for the pensioner — **Year 1990**
- Annual real discount rate — **i = 1,5%**
- Death probabilities for old age pensioners — **INPS 1989**
- Fraction of the annuity paid to the widow — $\gamma = 60\%$
- Fraction of the pension paid out to the surviving spouse (if there is one) — $\beta_M = 90\%$, $\beta_F = 70\%$

continued ……

- Differences between age at marriage — **c = 3 years**
- Survival probabilities, for surviving spouse of the pensioner — **INPS 1989**
- Pensioner's probability of leaving a family after his/her death — **INPS 1989**
- Actuarial adjustment factor that takes into account that pensions were paid every two months — **-0.4231**

In 1995 data used to compute legislated conversion factors were outdated because no updated statistical information was available!!!

Life expectancy at birth and at 65 years from 1989 to 1995 and differences between female and male e65

Years	Men		Women		e65 (women-men)
	e_0	e_{65}	e_0	e_{65}	
1989	73,5	14,9	79,9	18,7	3,8
1995	74,8	15,7	81,1	19,6	3,9
Diff. 1995 -1989	1,3	0,8	1,2	0,9	0,1
Please pay attention					

Source: My own elaboration of ISTAT data (2012)

Legislated conversion factors by age (age 57-65) and conversion factors estimated at **1995** using the **1997** life tables (age 57-70), and an upper age at death of 100 years

Age	Legislated conversion factors	Estimated conversion factors			Percentage deviations between estimated and legislated		
	Total	Men	Women	Total	Men	Women	Total
57	0.04720	0.04698	0.04509	0.04603	–0.5	–4.7	–2.5
58	0.04860	0.04834	0.04636	0.04735	–0.5	–4.8	–2.6
59	0.05006	0.04981	0.04771	0.04876	–0.5	–4.9	–2.7
60	0.05163	0.05137	0.04916	0.05026	–0.5	–5.0	–2.7
61	0.05334	0.05303	0.05070	0.05186	–0.6	–5.2	–2.8
62	0.05514	0.05479	0.05235	0.05357	–0.6	–5.3	–2.9
63	0.05706	0.05667	0.05411	0.05539	–0.7	–5.5	–3.0
64	0.05911	0.05869	0.05600	0.05734	–0.7	–5.6	–3.1
65	0.06136	0.06085	0.05803	0.05944	–0.8	–5.7	–3.2
66	0.06392*	0.06317	0.06023	0.06170	–1.2	–6.1	–3.6
67	0.06654*	0.06568	0.06260	0.06414	–1.3	–6.3	–3.7
68	0.06937*	0.06838	0.06515	0.06678	–1.5	–6.5	–3.9
69	0.07243*	0.07129	0.06792	0.06961	–1.6	–6.6	–4.1
70	0.07578*	0.07443	0.07092	0.07268	–1.8	–6.8	–4.3

Source: Caselli et al., 2003

* Legislated conversion factors at 1997 do not include these ages

Comparison between conversion factors estimated at 1995 and 2005, annual real discount rate i = 1.5%

Age	Legislated conversion factors 1995	Legislated conversion factors 2005	Percentage deviations between 2005 and 1995
57	0.04720	0.04419	-6.4%
58	0.04860	0.04538	-6.6%
59	0.05006	0.04664	-6.8%
60	0.05163	0.04798	-7.1%
61	0.05334	0.04940	-7.4%
62	0.05514	0.05093	-7.6%
63	0.05706	0.05257	-7.9%
64	0.05911	0.05432	-8.1%
65	0.06136	0.05620	-8.4%
66	-	-	
67	-	-	
68	-	-	
69	-	-	
70	-	-	

Source: Own elaboration, 2012

Taking into account the recent and future increase in life expectance

Life expectancy at birth and at 65 years from 2001 to 2050 and differences between female and male e65

Years	Men		Women		e65 (women-men)
	e_0	e_{65}	e_0	e_{65}	
2001	76.7	16.7	82.7	20.7	4.0
2012	79.6	18.3	84.4	21.9	3.6
2020*	80.7	19.4	86.1	23.3	3.9
2050*	84.5	22.2	89.5	26.0	3.8
2050**	86.8	24.1	91.6	27.9	3.8
Diff. 2050* -2001	7.8	5.5	6.8	5.3	-0.2

* Projection: Medium variant

** Low variant

Please pay attention

Source: My own elaboration of ISTAT data (2011)

In 2007 the government decided some changing in legislation

2007 reforms and new estimations

- ✓ law 247/2007
  - Introduction of the "exit window" mechanism: combining age at retirement with a minimum contributive period
  - The minimum retirement age is fixed at 58 from January 2008 and will gradually increase over time up to 62

Legislated conversion factors by age (age 57-65) and conversion factors estimated using the **2008** life tables (age 57-70), annual real discount rate i = 1.5%; an **upper age at death of 105 years instead of 100 years.**

Age	Legislated conversion factors 2005	Estimated conversion factors ISTAT 2008 Annual real discount rate = 1.5%			Percentage deviations between estimated for 2008 and legislated 2005		
	Total	Men	Women	Total	Men	Women	Total
57	0.04419	0.04386	0.04300	0.04343	-0.8	-2.7	-1.7
58	0.04538	0.04504	0.04414	0.04459	-0.7	-2.7	-1.7
59	0.04664	0.04631	0.04534	0.04583	-0.7	-2.8	-1.7
60	0.04798	0.04765	0.04663	0.04714	-0.7	-2.8	-1.8
61	0.04940	0.04910	0.04800	0.04855	-0.6	-2.8	-1.7
62	0.05093	0.05065	0.04947	0.05006	-0.6	-2.9	-1.7
63	0.05257	0.05230	0.05104	0.05167	-0.5	-2.9	-1.7
64	0.05432	0.05407	0.05272	0.05340	-0.5	-2.9	-1.7
65	0.05620	**0.05596**	**0.05453**	0.05525	-0.4	-3.0	-1.7
66	-	0.05797	0.05646	0.05722	-	-	-
67	-	0.06017	0.05855	0.05936	-	-	-
68	-	0.06256	0.06081	0.06169	-	-	-
69	-	0.06516	0.06328	0.06422	-	-	-
70	-	0.06803	0.06597	0.06700	-	-	-

Source: Own elaboration, 2012

News Age at retirement and life expectancy

- ✓ new law 122/2010
  - Further increased to 65 years the minimum pension age for women starting from 2012 (1 years of age every 2 calendar years)
  - Starting from 2015 the minimum age for pension eligibility is adjusted every three years to changes in life expectancy at 65 years, as measured by the National Statistical Institute over the preceding three years

News Age at retirement and life expectancy

- ✓ new law 122/2010

The reform would be fully phased in around 2030-2035

continued……NEW REFORM-2012

- ✓law 214/2012 : "FORNERO" Reform

Switching to a totally CONTRIBUTIVE SYSTEM FOR ALL

from 1.1.2012 (instead of 2030-35)

continued……NEW REFORM-2012

- ✓ law 214/2012 : Switching to a totally CONTRIBUTIVE SYSTEM for all from 1.1.2012 (instead of 2030-35) "FORNERO" Reform.

  - The conversion factors will be revised every two years depending on changes in life expectancy at 65 years, as measured by the National Statistical Institute over the preceding three years
  - Starting from 2013 the minimum age for pension eligibility (65M, 62W) will be adjusted every three years. It will be 66 years in 2018 for BOTH SEXES.

As a whole, **pension benefits largely depend on retirement age**, **the latter depending in part on the average number of years spent in retirement (*)**

(*) In Italy, pension benefits depend: ON the age at retirement, and ON the capitalized value of lifetime social security contributions (this is converted into a real pension annuity using a set of Coefficients (named Conversion Factors) computed by taking into account, among other things, average survival probabilities at age at retirement.

It will be interesting to compare the retirement ages as defined by EU Member States (now and in the immediate future) for both men and women **with the years of life expectancy remaining at this age (20 years?)**

This comparison will allow **to see whether divergences or convergences towards the principles of actuarial fairness are observed**. In the light of this comparison we can also speculate on the strengths and weaknesses of the welfare policies in some EU countries.

How pensions are changing in Europe: age at retirement in 2009 and in 2020. Some countries: Italy in comparison to the EU countries with the lowest and the highest age at retirement in 2009

Countries	Age at retirement -2009		Age at retirement -2020	
	MEN	WOMEN	MEN	WOMEN
With the lowest age at retirement in 2009				
Italy	**65**	**60**	**66+11 months**	**66+11 months**
France*	60-65	60-65	62-67	62-67
Sweden*	61-67	61-67	61-67	61-67
Check Repub.	62	60	63+10 months	63+8 months
Hungary	62	62	64	64
With the highest age at retirement in 2009				
Spain	**65**	**65**	**66+4 months**	**66+4 months**
Germany	65	65	**65+9 months**	**65+9 months**
Denmark	65	65	66	66
Finland	65	65	65	65
Netherlands	65	65	65	65
Portugal	65	65	65	65

- * System where those who retire at the minimum age will be penalized and those who retire at the maximum age will benefit.
- FINLAND 2020 = 63-68; NETHERLAND 2020 = 66+3m; PORTUGAL 2020= 67

Source: EU Commission, 2014

Comparison between Age at retirement (ARx), Life Expectancy at that age (Ex) and Life Expectancy at 65 in selected European countries. Year 2009

Countries	Men		Women		M+W
	ARx 2009	LE65 2009	ARx 2009	LEX 2009	LE65 2009
France*	60-65	22.5-18.7	60-65	27.5-23.2	21.2
Sweden*	61-67	21.5-16.7	61-67	24.6-19.5	19.8
Check Rep.	62	17.2	60	22.9	17.2
Hungary	62	15.7	62	20.5	16.4
Italy	65	18.3	60	26.5	20.4
Spain	65	18.3	65	22.4	20.5
Germany	65	17.6	65	20.8	19.3
Denmark	65	16.8	65	19.5	19.2
Finland	65	17.3	65	21.5	19.6
Netherlands	65	17.6	65	21.0	19.4
Portugal	65	17.1	65	20.5	18.9

Life expectancy M+W at 65 years and Remainig life expectancy = 20 years, 2009 and 2020

	2009	2020	20 years rem. lifex 2009	20 years rem.lifex 2020	20 years rem.lifex 2009 Men	20 years rem.lifex 2009 Wom.
Italy	**20.4**	**23.1**	**65y+5m**	**68y+2m**	**63y+2m**	**66y+3m**
France	**21.2**	**23.1**	**66y+3m**	**68y+2m**	**62y+2m**	**67y+10m**
Sweden	**19.8**	**21.2**	**62y+10m**	**66y+3m**		
Spain	**20.5**	**22.0**	**65y+6m**	**67y+0m**		
Germany	**19.3**	**21.1**	**61y+4m**	**66y+2m**		
Denmark	**19.2**	**20.3**	**61y+3m**	**66y+4m**		

Summary

- Legislated conversion factors were calculated for each age in [57-65]
  - in 1995, when the "Dini" REFORM was introduced
  - in 2005, when the conversion factors were updated
  - and by Istat in 2007 and 2008
- In 2010 it was established that the conversion factors will be extended beyond the age 65

Summary

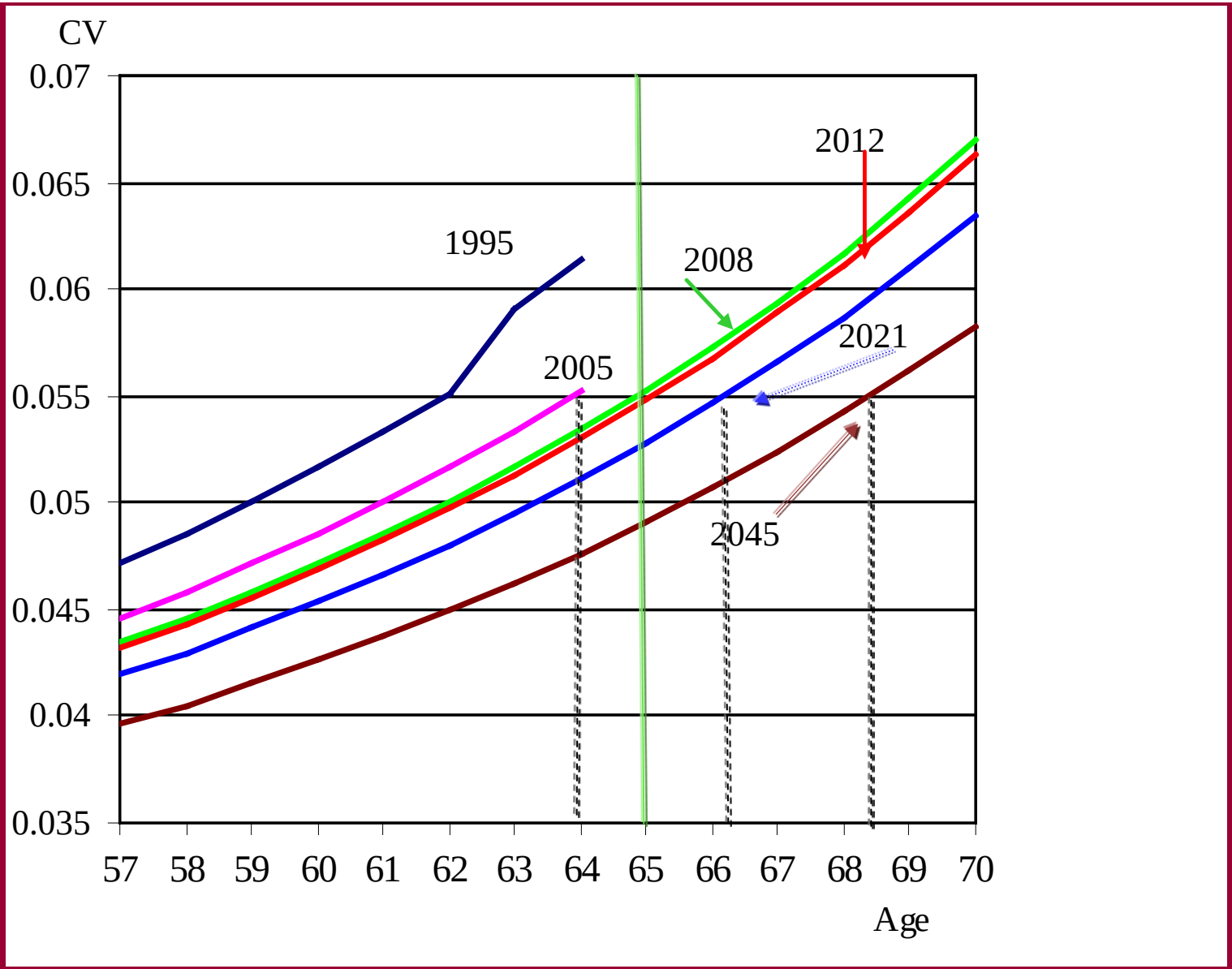
✓ In 2012 "Fornereo" REFORM it was established that the conversion factors will be updated every two years starting FROM 2013 (last reform), extended beyond the age 70, and

✓Further increases in the following years to reach the mimimum age of 66 as of 2018 for Men and Women

✓**to guarantee** that the statutory retirement age increases for all up to 67 as of 2021 (in case this threshold is not reached through the automatic mechanism linking retirement age to increases in life expectancy)

Conversion Factors today and for the future....

Legislated Conversion Factors (1995 and 2005) and estimated for the years 2008, 2012, 2021 and 2045



Source: My own elaboration, 2012

Imagine the future for the new Italian pensioners !!

When:

A – From 2012 there is a CONTRIBUTIVE SYSTEM for all

B – the real pension annuity will be calculated using the *lower* projected Conversion Factors (due to the impact of higher life expectancy at 65 years)

C – a worker with 41+1m (W) or 42+1m (M) years of contributions could be retired starting from 57 years until 2017, than with 42 years of Contribution (W and M) retired not before 62 years old (-2% quota per year before age at retirement).

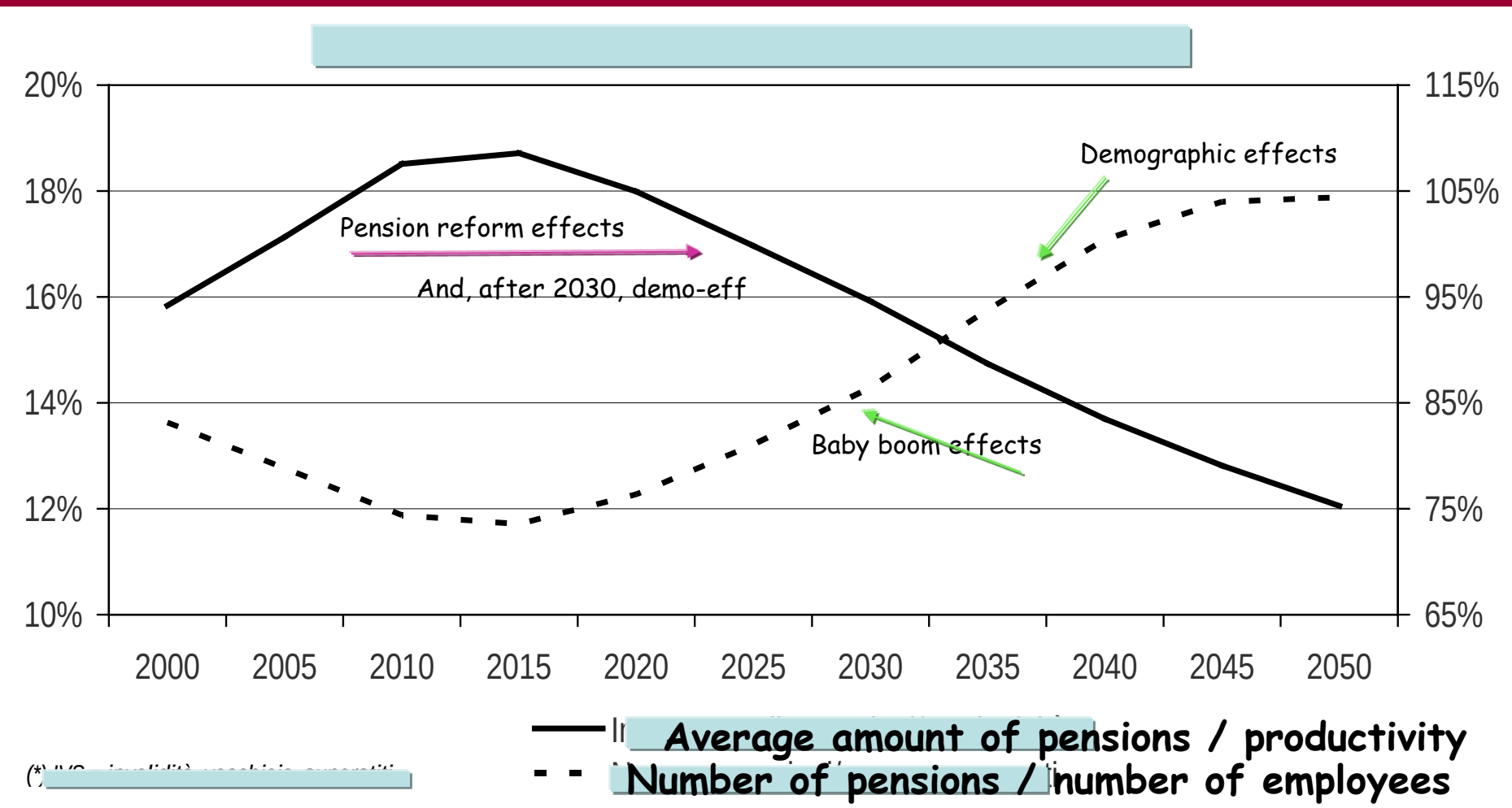
Considering that:

A- Due to the transition from the "pay-as-you-go" public pension system to the "contributive system" it is estimated that the Italians will suffer a reduction in their pensions of 15% from 2008 to 2045 [in average !] - 19% at 2015.

B- In the same period, for an individual aged 65 years, his/her pension annuity will be reduced of ≈ 12% (due to reduction in Conversion Factors)

…the impact on Expenditure/GDP ratio before the last reform…

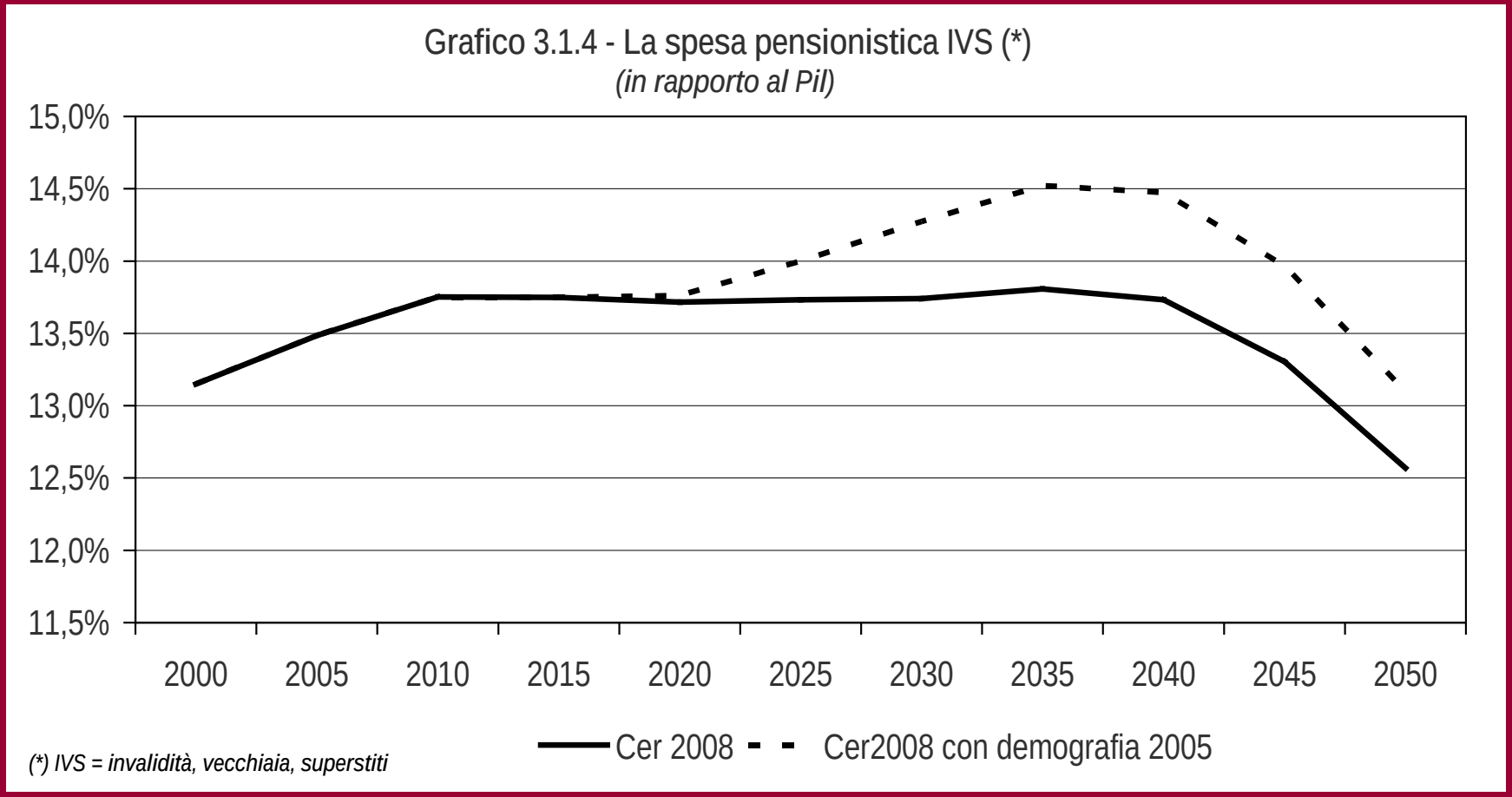
Decomposition of the pension expenditure ratio (ODDS) on GDP (ODDS = expenditure for Old-age, disability and Survivors pensions) in two ratios ___ and----



Source: Cnel-Cer, 2009- Pension system data 2008

__ percentage ratio of average pension to labour productivity
--- percentage ratio of pensions to employees

Ratio of ODDS pension expenditure on GDP (ODDS=expenditure for Old-age, disability and Survivors pensions)

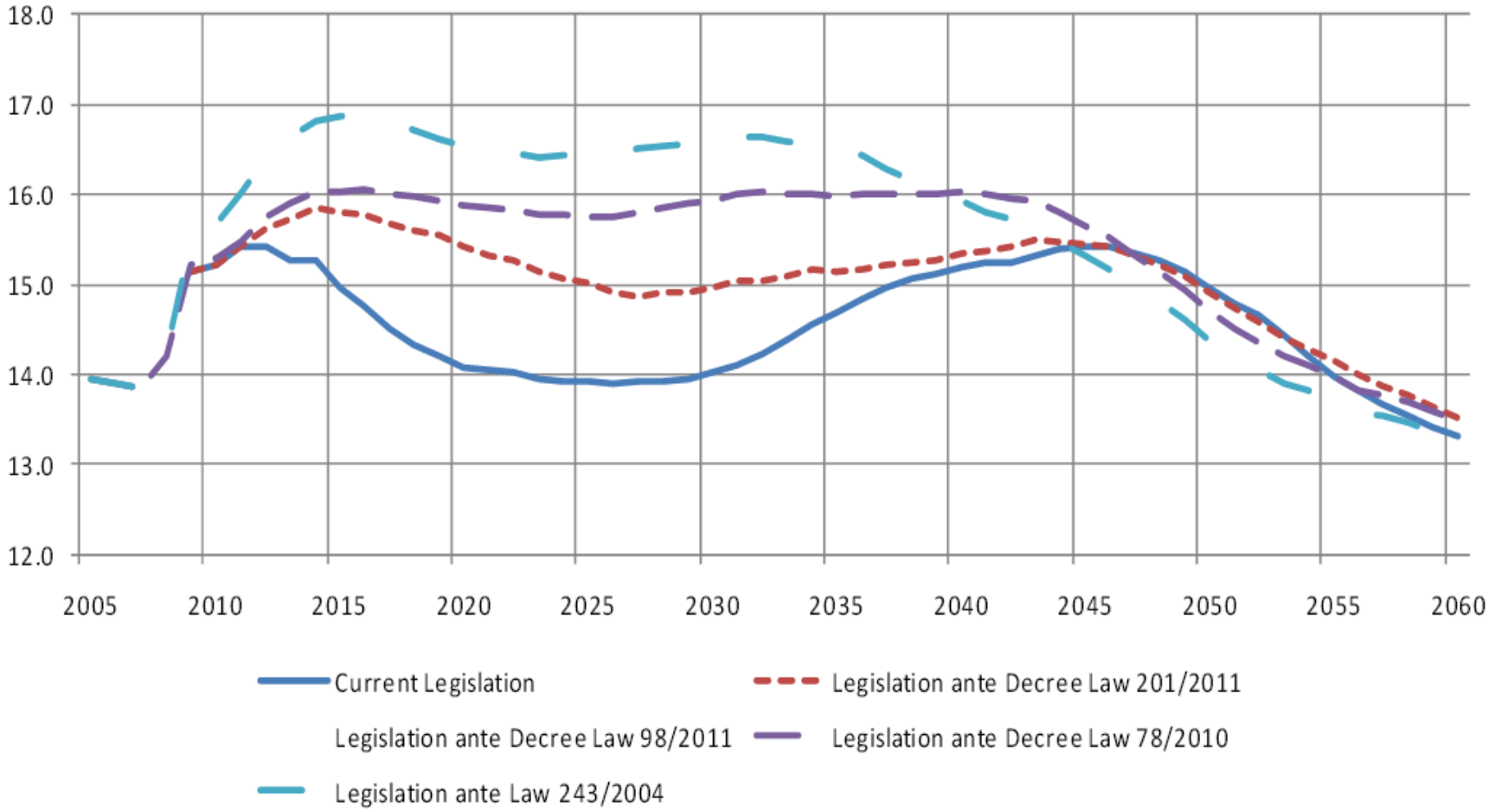


Source: Cnel-Cer, 2009

Without Demographic effect

Considering Demographic effect

Sizeable effect on pension spending as % of GDP



How to reduce the effects of expenditure (and following Brussels suggestions…. and also to help the new generations ?) on GDP
The philosophy of 2012 reform

- ✓ Introducing NOW a "contributive system" for all and extending the retirement age in relation to the increase in life expectancy in old age.
- ✓ Reducing early retirement.
- ✓ Equalizing the retirement age for men and women

And

- ✓ Extending the training of workers at all ages of life (to have a fairer system in relation to the expected years of life).

- ✓ Increasing supplementary pensions funds

Concluding remarks …

- ✓ The process of population aging affected until today the Italian public pension system. Pension reforms have managed to control the future increase in the level of pension expenditure. However, future sustainability will depend on various factors. In particular, due to the "**wave effect**" of the retirement of baby-boom generations, the pension system will come under pressure.

Concluding remarks …

- ✓ In this presentation we tried to highlight the importance of differential demographic processes, and in particular the strategic role played by mortality variations, when calculating the Conversion Factors that represent one of the key elements of the new Italian system of public pensions.

- ✓ A somewhat surprising conclusion is how sensitive these conversion factors are to even small variations in survival probabilities.

continued ……

- ✓ Important is the role of mortality differentials. Yet, not all pensioners are on an equal footing with regard to death. Look on gender differences!
- ✓ Occupational and marital status are both factors to be contended with. A blue-collar worker may not expect to live as long as other professional categories (today about 5 years). Similarly, a widower or a bachelor at 65 or 67 years old has a higher mortality risk, and therefore a shorter expected life span, than those living with a spouse…

Life expectancy at age 15, 35 and 65 by education and differences between level of education (high and low) Year 2004. Men and women. Italy

	Men		Diff. High – Low (in years)	Women		Diff. High – Low (in years)
	Level of education			Level of education		
	Low	High		Low	High	
e_{15}	62.1	69.3	*7.2*	68.4	74.8	*6.4*
e_{35}	43.1	49.8	*6.8*	48.9	55.0	*6.1*
e_{65}	16.9	21.9	*4.9*	21.1	26.5	*5.4*

Please pay attention

Source: Cnel-Cer, 2011

***N.B. Today e65 is 18.3 for men and 21.8 for women

continued ……

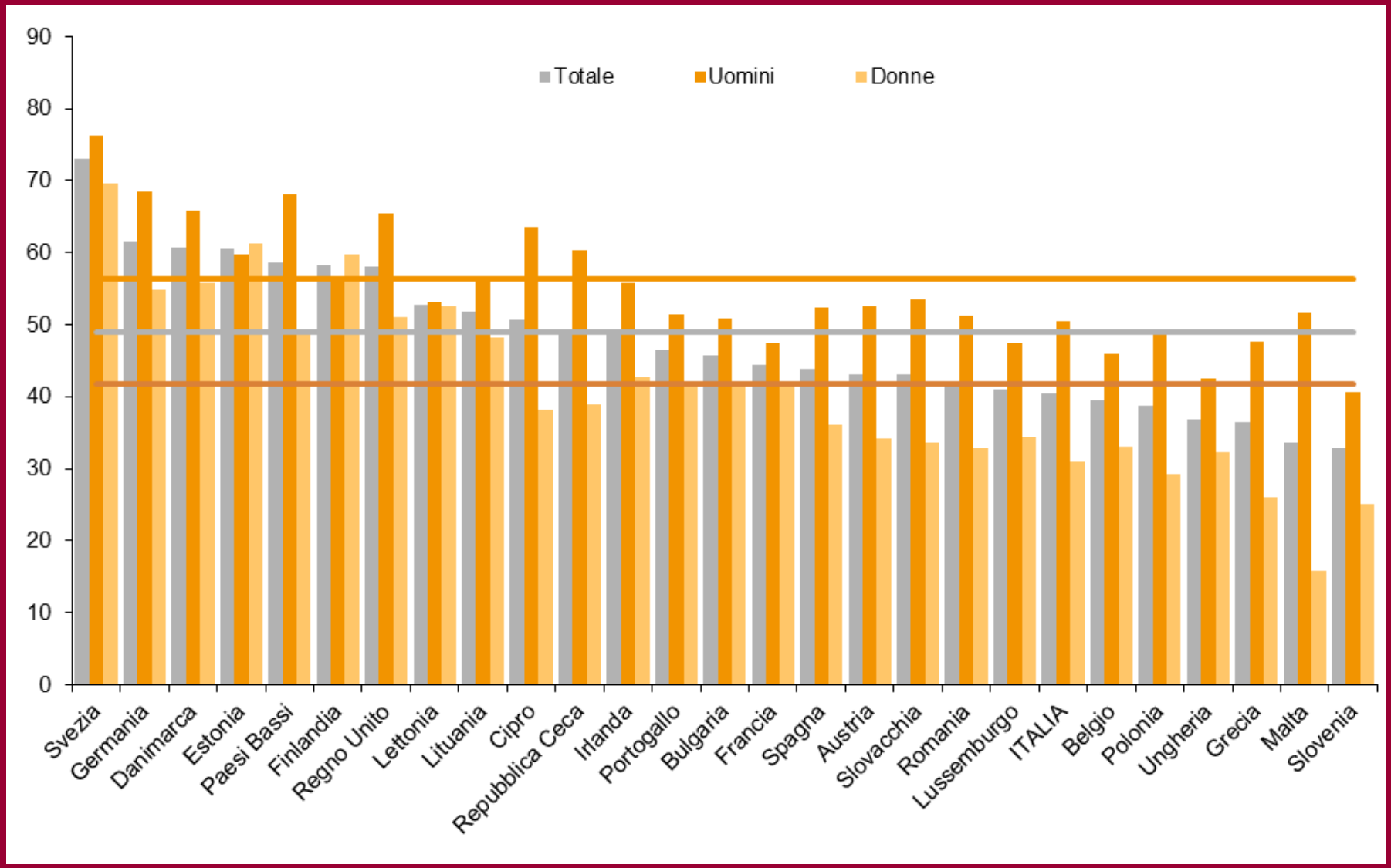
- ✓ Generally, we must recognize that the actuarial fairness of the system introduced by the Italian reform can only be guaranteed on average and that, in the presence of a heterogeneous population of individuals that differ considerably in their mortality prospects, the current system implies a substantial degree of redistribution from high-mortality groups (typically characterized by low income and low wealth) to low-mortality groups (typically characterized by high income and high wealth).

Continued… and finally

- ✓ One cannot carry out a pensions reform without reforming the labour market !!!

- ✓ In Italy, the employment level of old workers (55-64 years) is equal to 40%, while in the UK it is 59%, in Germany 62%, and in Sweden 73%.

The employment level of old workers (55-64 years) EU countries by sex in percent. 2012



Continued… and finally

- ✓ How can we pay pensions only after the age of 65-67 (or 57-62) to the 60% of workers between age 55-64 who NO LONGER WORK'? How can a person remain without a salary (or pension) for many years of his adult life?

THANKS
For your attention