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Demographic Trends and Pensions in Italy: An Outlook for the Future

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INFORMATION ON THE PROJECT

The Italian case study is part of the project "Social Security, Family and Household in Aging Societies," conducted at IIASA in collaboration with the Netherlands Interdisciplinary Demographic Institute (NIDI).

Other papers related to the project are listed below:

WP-92-35	Demographic Effects on the Swedish Pension System, by Tommy Bengtsson and Agneta Kruse
WP-92-30	Demographic Trends and the Pension Problem in Finland, by Jarl Lindgren
WP-92-24	Socio-Demographic Changes and the Pension Problem in France, by Jean-Louis Rallu
WP-92-23	Demographic Trends and the Pension Problem in Poland, by E. Fratczak and J. Józwiak
CP-91-15	The Effects of Changing Marital Status Patterns on Social Security Expenditures in the Netherlands, 1985-2050, by N. Keilman
CP-91-02	Demographic Changes and their Implications on Some Aspects of Social Security in the Unified Germany, by N. Ott, T. Büttner, and H.P. Galler
WP-90-22	Socio-Demographic Changes and the Pension Problem in Austria, by J.-P. Gonnot
WP-90-15	Demographic, Social and Economic Aspects of the Pension Problem: Evidence from Twelve Countries, by J.-P. Gonnot
WP-89-107	Pension Systems and Social Security Trends and National Characteristics, by J.-P. Gonnot and C. Prinz
WP-89-34	Recent Trends in Living Arrangements in Fourteen Industrialized Countries, by J.-P. Gonnot and B. Vukovich

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ABSTRACT

Projections of expenditures for old age pensions, survivor pensions, and disability pensions were made for the period 1985-2050 on the basis of future developments in the population structure by age, sex, and marital status. Four demographic scenarios were formulated: (i) a Benchmark scenario, with demographic rates kept constant at their 1980-84 level; (ii) a Fertility scenario, with a rise of the Total Fertility Rate (TFR) towards replacement level; (iii) a Mortality scenario, with reductions in mortality rates of 30 percent for females, and 45 percent for males; (iv) a Western scenario, which combines extreme demographic conditions of several West European countries: a TFR of 1.28, proportions never-marrying of one-third, one-third of marriages ending in divorce, and male and female life expectancies of 74 and 81 years, respectively.

The current pension system was combined with all four scenarios. Also, the impact of high female labor force participation, and a rise in the average age at retirement were investigated. The results indicate that changes in demographic conditions cannot prevent increases in and funding problems for pension expenditures in Italy. An increase in fertility has no effect on the pension system until 2030, when a larger generation will enter the labor force. Longer active periods for males and females will cause increases in pension expenditures in the future and are not long term solutions of the pension problem. Postponement of retirement age would help to balance the pension funds, but depends on the economic situation and on the labor market.

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DEMOGRAPHIC TRENDS AND PENSIONS IN ITALY: AN OUTLOOK FOR THE FUTURE

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1. General Characteristics of the Demographic Situation in Italy

Over the last 20 years, the demographic shape of Italy has changed rapidly. In 1961 there was a total population of 50,624,000 inhabitants, of whom 25,840,000 were female. Until that time the average annual rate of increase had been more or less stable for the previous 100 years, at around 6-8 per 1000 inhabitants. The natural increase was 9 per 1000, the result of a birth rate of 18 per 1000 and a mortality rate of 9 per 1000, but it was compensated to some extent by emigration.

With the baby boom in the 1960s, the fertility rate rose to 2.7; the maximum number of births was reached in 1964 with 1,016,000 live births. In the 1970s, however, there were some radical changes: fertility decreased steadily, while the death rate fell sharply, especially among infants, and emigration came to a halt. As a consequence, the population growth rate went down, so that in 1981 the total population was 56,577,000, the result of a growth rate of only 4.4 per 1000 inhabitants throughout the ten previous years. During the 1980s this trend has become even more pronounced (see Figure 1 and Table 1): in 1985 the overall fertility rate was 1.6 children per adult woman (1.3 as estimated in 1988), while in 1987 female life expectancy was 79.2 years and male life expectancy 72.6 years.

The presence of immigration, especially from North Africa, is starting to become a stable feature of the demographic landscape, although it is still a minor factor. The overall population growth rate is rapidly approaching zero. The aging process of the population has therefore accelerated, and is starting to give cause for concern.

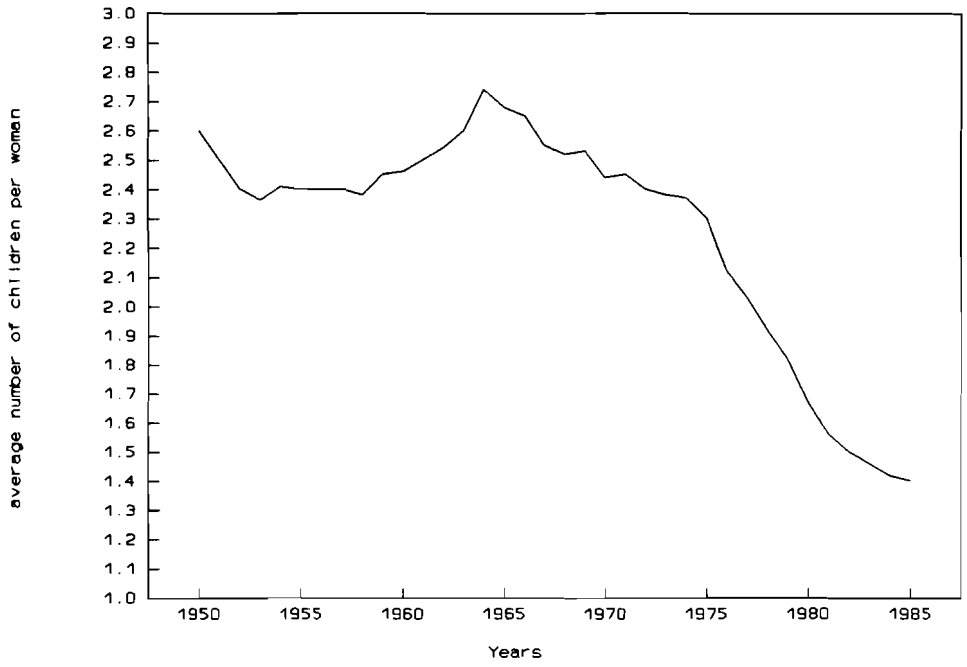

Figure 1. Total Fertility Rate, 1950-1985.

Table 1. Summary indicators of the demographic situation.

Indicator	1950	1960	1970	1980	1985
Life Expectancy*					
Males					
at birth	63.7	67.2	69.0	70.6	72.0
at age 60	16.0	16.7	16.7	17.0	17.4
at age 80	5.0	5.7	5.8	5.8	6.2
Females					
at birth	67.2	72.3	74.9	77.2	78.6
at age 60	17.5	19.3	20.2	21.1	21.9
at age 80	5.5	6.4	6.7	7.0	7.5
Total Fertility Rate	2.6	2.4	2.4	1.7	1.4
Proportion extramarital births	3.4	2.4	2.2	4.3	5.4
Crude Marriage Rate (per 1000)	7.7	7.6	7.4	5.7	5.2
Mean age at first marriage					
Males	28.8	28.6	27.5	27.2	27.1
Females	25.0	24.8	24.1	24.1	24.0

*The values refer to a period of 2 or 3 years around each indicated year.

Since the fertility rate is the crucial factor governing future developments, it is important to understand its social context. Almost all births in Italy are marital: extramarital births, although they are increasing, still amount to no more than 5% of the total (Figure 2). The marriage rate is higher than in other developed countries; the average age at marriage shows little sign of increase; and the divorce rate is still negligible, in spite of the fact that the law allowing divorce has now been in force for almost 20 years. Given this general picture, which is so unlike the situation in most other developed countries, the extremely low fertility rate can only partly be explained by changing values--although these have changed, especially in urban areas and among the higher social classes. It must also be the result of a short-term economic situation in which there are few job opportunities for young people and living accommodation is both expensive and hard to come by, so that the normal passage to a full adult life with all its responsibilities is obstructed, since children are slower to leave the family home, whether this be for reasons of marriage or cohabitation. This helps to explain the apparent disparity between the stability of the family structure and the drop in the fertility rate.

In the following section we shall analyze the Italian demographic situation in greater detail, comparing it, when possible, with that of the other countries adhering to this project.

Figure 2. Proportion of extramarital births.

2. Structures by Sex, Age and Marital Status and the Main Demographic Patterns

The population of Italy has aged considerably over the last 25 years (see Section 3, Table 4a): between 1961 and 1985 the proportion of children (0-14 years) shrank considerably, leading to the contraction of the base of the age pyramid. The young-age groups (15-25 years) have become slightly larger more recently (due to the baby-boom generation), but the other central age groups have not undergone any consistent modifications. Significant increases have taken place in the population of the higher age groups, especially in the female component: the proportion of old-age population (60+) has risen from 14% in 1961 to 19% in 1985 (see Table 4a), and the ratio of males to females has fallen from 96% to 95% in the same period.

The aging of the population is a phenomenon which took place in the demographic evolution of the other countries of Europe. But Italy differs considerably from the other countries in its structure by marital status.

In a description of the changes in the population structure by marital status between the years 1960 and 1980 in the countries covered by this study, Gonnot and Vukovich (1989) identified the following factors:

1) a reduction in the proportion of married people, and an increase in the proportion of divorcees;
2) an increase in the proportion of widows and a fall in that of widowers;
3) an increasing proportion of single men.

Figures for Italy deviate considerably from these findings. The proportion of single men and women (Table 2), which was extremely high in 1961 (34% and 29% respectively) fell somewhat in the decades which followed, dropping to 31% for men and 25% for women in 1981.

Table 2. Marital composition of the population aged 15 and over for each sex, 1961-1985.

Status	1961		1971		1985	
	Males	Females	Males	Females	Males	Females
Single	34.4	29.1	32.3	26.1	31.3	24.6
Married	62.1	58.1	64.2	60.5	65.3	60.5
Widowed	3.5	12.8	3.4	13.4	3.2	14.4
Divorced	0.0	0.0	0.1	0.1	0.3	0.4
Total	100.0	100.0	100.0	100.0	100.0	100.0

The discrepancy between Italy and other Western nations is even greater when figures for divorce are concerned. The comparatively recent introduction of divorce laws is responsible for the negligible divorce rate up until 1971, while the essential stability of the institution of marriage helps to explain the very limited rise in the number of divorces since then. The proportion divorced is 0.3% for men and 0.4% for women, so Italy lags well behind other countries in Western Europe, where the proportion is 4.5% and 5.9% respectively.

In contrast with other Western European countries, a higher proportion of older Italians get divorced: in the rest of Europe most divorces take place in the 35-49 age group, with a high incidence also in the 25-29 age group. In Italy, on the other hand, divorces most frequently involve people between 45 and 60 years, i.e. when women have reached the end of their childbearing years.

Widowhood affects a much greater number of women than men: the proportion of widowers fell from 3.5% in 1961 to 3.2% in 1985, while in that same period the proportion of widows rose from 12.8% to 14.4% (Table 2). In 1985, there were 2.8 newly-widowed women for every newly-widowed man.

Table 3. Elderly population by sex, age group and marital status, 1961-1985.

Status	1961		1971		1985	
	65-74	75+	65-74	75+	65-74	75+
	MALES					
Single	6.7	7.1	11.2	9.7	6.8	6.1
Married	78.4	56.3	76.3	56.0	82.2	63.4
Widowed	14.9	36.6	12.4	34.3	10.7	30.3
Divorced	0.0	0.0	0.1	0.0	0.3	0.2
Total	100.0	100.0	100.0	100.0	100.0	100.0
	FEMALES					
Single	13.3	11.9	16.2	15.2	12.3	13.2
Married	43.0	18.6	43.7	18.2	45.2	19.3
Widowed	43.7	69.5	40.1	66.6	42.2	67.4
Divorced	0.0	0.0	0.0	0.0	0.3	0.1
Total	100.0	100.0	100.0	100.0	100.0	100.0

Marital status among the elderly varies greatly depending on age group (65-74, or 75 and over) and sex (Table 3). Most elderly males are married: in 1985, 63% of the men over 75 were married, compared with 30% who were widowers. 42% of the women aged 65-74 are widows, and this proportion rises sharply, reaching 67% for those over 75. Figures show, in fact, that most Italian women over 75 find themselves alone: if we add 13% of the spinsters and 0.1% of the divorcees to the 67% of the widows, we find that 81% of the Italian women of that age are without a partner.

3. Population Forecast by Sex, Age and Marital Status

3.1. Four Different Scenarios

Turning now to the input data of the demographic forecast, we should first point out that as Italy only compiles breakdowns of the population by marital status in census years, and not annually, it has been presumed that the picture of marital status registered in the 1981 census remained constant until 1985. This has allowed us to bring the beginning of our forecast into line with those for other countries. For age-sex-marital status specific rates of mortality, birth, marriage, divorce and widowhood, figures for 1981 were used on the assumption that they remained constant in the period from 1981 to 1985.

In accordance with the forecasts made by the other countries, we used 4 scenarios, all of which excluded the possibility of external migration:

1. *Benchmark Scenario.* All variables are kept constant, e.g. the population is projected by maintaining the values observed in 1981 for fertility (TFR 1.56), mortality (life expectancy at birth: females 78.1 and males 71.3 years) and the rates for marriage, divorce and widowhood constant.

2. *Fertility Scenario.* Assumes fertility to increase to replacement level by the year 2005, which, in Italy's case, means an increase of 0.5 children per woman over the next 20 years.

3. *Mortality Scenario.* Age-specific mortality rates are reduced by 30% for women and 45% for men, the other demographic components remaining constant. This is equivalent to an increase in life expectancy of 8-10 years for men and 4-5 years for women.

4. *Western Scenario.* A combination of the "extreme" demographic rates observed in Western Europe: West German fertility, Swiss mortality, and Swedish nuptiality and divorce rates. This means, in the case of Italy, that the average number of children per woman falls from 1.56 to 1.28, to match the rate in Germany; mortality becomes equal to that of Switzerland (a life expectancy of 74 years for men and 81 for women); the model of nuptiality and divorce conforms to that of Sweden (one in three persons does not marry, the average age at first marriage is 28 for women and 30 for men, one in three marriages end in divorce).

Table 4a. Population by broad age-groups, 1951-2050.

Year	Absolute (1000s)				Relative (%)			
	0-14	15-59	60+	Total	0-14	15-59	60+	Total
1951	12422	29320	5774	47516	26.1	61.7	12.2	100.0
1961	12405	31172	7047	50624	24.5	61.6	13.9	100.0
1971	13234	31878	9025	54137	24.4	58.9	16.7	100.0
1981	12132	34561	9864	56557	21.5	61.1	17.4	100.0
1985	11026	35506	10607	57139	19.3	62.1	18.6	100.0
Benchmark Scenario								
2000	9912	35017	12702	57631	17.2	60.8	22.0	100.0
2015	8037	33302	13382	54721	14.7	60.9	24.5	100.0
2030	7048	27887	15103	50038	14.1	55.7	30.2	100.0
2050	5553	22876	12894	41323	13.4	55.4	31.2	100.0
Fertility Scenario								
2000	10772	35017	12702	58491	18.4	59.9	21.7	100.0
2015	10659	34153	13382	58194	18.3	58.7	23.0	100.0
2030	10770	31327	15103	57200	18.8	54.8	26.4	100.0
2050	10592	31386	12894	54872	19.3	57.2	23.5	100.0
Mortality Scenario								
2000	9930	35114	13311	58355	17.0	60.2	22.8	100.0
2015	8086	33668	15995	57749	14.0	58.3	27.7	100.0
2030	7113	28346	18936	54395	13.1	52.1	34.8	100.0
2050	5628	23379	17317	46324	12.1	50.5	37.4	100.0
European Scenario								
2000	9489	35060	13013	57562	16.5	60.9	22.6	100.0
2015	6758	33041	14541	54340	12.4	60.8	26.8	100.0
2030	5457	26378	16699	48534	11.2	54.4	34.4	100.0
2050	3730	19222	14659	37611	9.9	51.1	39.0	100.0

All the changes in trends take place gradually over a period of 20 years (1985-2005): Gonnot (1990) has found that the results are fairly robust, regardless of differences in the choice of transition period.[1]

In order to analyze the results of the projections, we have drawn up some tables summarizing the results, so that the various scenario outcomes can be compared. The following indicators were used (Tables 4a through 4d): a) population by large groups of ages; b) YADR, the young-age dependency ratio (0-14/15-64), and OADR, the old-age dependency ratio (65+/15-64); c) the structure of the elderly population (60+) by marital status and sex; and d) the ratio of the sexes in the elderly population.

Table 4b. Dependency ratios, 1985-2050.

Scenario	1985	2000	2015	2030	2050
	Under 15				
Benchmark	28.5	25.9	22.0	22.1	21.6
Fertility		28.1	28.5	30.5	31.0
Mortality		25.8	21.8	21.8	21.3
Western		24.7	18.6	17.9	16.9
	60 and over				
Benchmark	19.0	24.5	27.6	34.7	39.3
Fertility		24.5	27.0	31.4	29.5
Mortality		25.9	33.8	45.0	54.3
Western		25.3	30.7	41.2	53.3
	Total				
Benchmark	47.5	50.4	49.5	56.8	60.9
Fertility		52.7	55.4	61.8	60.5
Mortality		51.7	55.6	66.8	75.7
Western		50.0	49.3	59.1	70.1

[1]It should be noted that, for reasons of simplicity, the same proportional change for all the age-specific rates has been applied, which, in effect, means that the level of the curve either moves upwards or downwards. To a certain extent, this seems to be an over-simplification, given the marked changes which have been taking place in the age-structure of the rates in more recent years. On the other hand, it keeps the number of components under consideration low. Therefore it makes discussion and international comparison much easier.

Table 4c. Marital composition of the population aged 60 and over, 1985-2050 (%).

Year	Females					Males				
	Single	Married	Divorced	Widowed	Total	Single	Married	Divorced	Widowed	Total
1985	12.4	41.9	0.3	45.4	100.0	6.8	79.4	0.3	13.5	100.0
					Benchmark Scenario					
2000	10.3	41.5	0.9	47.3	100.0	7.6	77.0	0.7	14.7	100.0
2015	7.8	41.4	1.4	49.4	100.0	7.9	75.3	0.9	15.8	100.0
2030	8.3	42.0	1.6	48.0	100.0	11.3	72.8	0.9	15.0	100.0
2050	8.9	36.0	1.6	52.9	100.0	14.0	68.1	0.9	17.0	100.0
					Fertility Scenario					
2000	10.3	41.5	0.9	47.3	100.0	7.6	77.0	0.7	14.7	100.0
2015	7.8	41.4	1.4	49.4	100.0	7.9	75.4	0.9	15.8	100.0
2030	8.4	42.0	1.6	48.1	100.0	11.3	72.9	0.9	15.0	100.0
2050	9.1	36.4	1.6	52.9	100.0	13.7	68.6	0.9	16.9	100.0
					Mortality Scenario					
2000	10.3	43.6	0.9	45.2	100.0	7.5	77.2	0.7	14.5	100.0
2015	8.0	49.0	1.4	41.6	100.0	7.8	75.0	0.9	16.3	100.0
2030	8.3	51.2	1.6	38.9	100.0	10.7	71.3	0.9	17.1	100.0
2050	8.8	46.2	1.6	43.4	100.0	13.4	64.8	0.8	21.0	100.0
					European Scenario					
2000	10.4	42.0	1.1	46.6	100.0	7.6	76.8	1.2	14.4	100.0
2015	8.2	41.3	4.0	46.6	100.0	8.2	71.6	5.0	15.1	100.0
2030	10.0	38.1	9.6	42.2	100.0	15.2	61.1	10.0	13.7	100.0
2050	20.7	27.8	11.7	39.8	100.0	31.3	45.4	9.5	13.7	100.0

Table 4d. Masculinity ratio for the population aged 60 and over.

Year	Scenario			
	Benchmark	Fertility	Mortality	European
1985	72.2	72.2	72.2	72.2
2000	72.6	72.6	75.0	72.9
2015	72.9	72.9	82.7	73.8
2030	75.4	75.4	88.7	76.5
2050	73.9	73.9	91.4	75.1

3.2. Changes in the Size and Age Structure of the Population

BENCHMARK SCENARIO

The total population will increase until the year 2000: until then, the increase of the elderly population will be enough to compensate for the marked drop in the young population, and the less pronounced decrease in the 15-59 age group. Between the year 2000 and the year 2030 the total population will diminish, because the young and adult age groups will diminish faster than the rate at which the elderly age group increases. Between 2030 and 2050 the total population will fall much more markedly, because all three population groups will shrink. The decline of the elderly age group is caused by the fact that the increasingly small generations born in the baby-bust period (from 1965 onwards) will start reaching the age of 60.

As a result of the developments in the three broad age groups, the young-age dependency ratio diminishes rapidly after 1985, and the old-age ratio increases. In 1985, the former was about 10% higher than the latter; by the year 2000 the two rates differ by less than 1%, after which the OADR becomes increasingly higher than the YADR. The total dependency rate will therefore increase, rising from 48% to 61%, but with alterations in its composition: in 1985, 60% of it was young-age dependency, whereas 65% of the rate for 2050 is old-age dependency.

The percentage of the population constituted by the elderly will increase from 19% in 1985 to 31% in 2050, and the process of aging will naturally be more accentuated for women: the sex ratio for the elderly population is always heavily balanced in favor of women, and the ratio of men to women will stay at about 72-75 to 100 until the year 2050. Variations in the male-female ratio are due to the aging of the baby-boom generations, causing the old-age group to undergo relative rejuvenation, and causing a slight increase in the ratio of males to females. The passage of the generations of the baby bust has the opposite effect.

FERTILITY SCENARIO

Under the assumption of mid-term replacement-level fertility, there would be a smaller decrease in the population, which would reach 54.872 million in 2050, as there would be much smaller decreases in the number of young people and in the number of adults compared with those observed in the Benchmark Scenario. In particular, the young-age group, while decreasing in absolute terms, would only decrease as a percentage until the year 2015, after which it would increase again, returning in 2050 to the 1985 value (19%). The young-age dependency ratio, after undergoing a slight decrease, would thus rise again to the 1985 level, with further increases in the next decades. The expected halt in the aging of the population would, however, take longer to appear than the recovery of fertility: the old-age dependency ratio would continue to rise until the year 2030, and only with the arrival at advanced years of the small baby-bust generations would the proportion start to decrease (from 31% to 30%). But even then, it would be substantially higher than current rates. The population aged over 15 would increase up until the year 2000, and then decrease due to the exit from reproductive age of the larger

generations born in the 1960s, as would happen if present trends were to continue. However, the reduction would be less pronounced over the next decades due to the coming into being of the new large generations born following the increase in fertility.

MORTALITY SCENARIO

The Mortality Scenario would lead to a smaller decrease in the total population, which would reach 46,324 million in the year 2050, due mainly to a greater increase in the elderly population, and a notable aging of the population.

What is immediately striking, compared with the Benchmark Scenario (see Figure 3), is the increase in the old-age dependency ratio, which would soar from 19% to 54% between 1985 and 2050: in 2050 there would be over 50 elderly persons for every 100 persons in the active population.

The period of greatest aging would be represented by the 15 consecutive years between 2015 and 2030, when the larger generations born in the 1960s would leave the ranks of the active population: indeed, the proportion of the population aged 15-59 falls by six percentage points to 52%, while that of the elderly population increases by seven points, and the trend becomes more pronounced over the next 20 years.

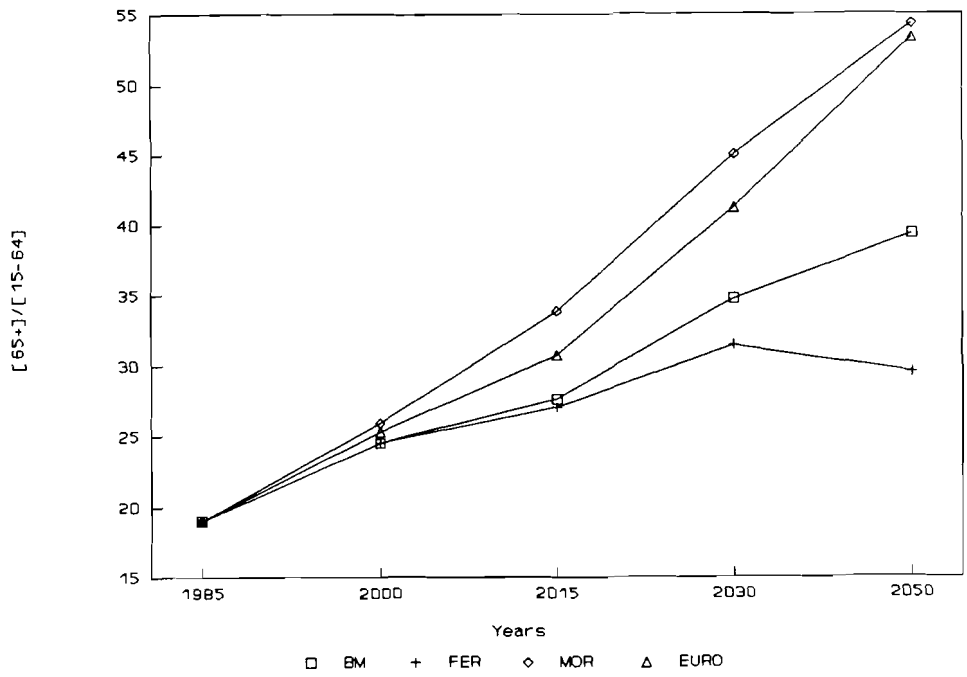

Figure 3. Old-Age Dependency Ratio.

WESTERN SCENARIO

Of the various hypotheses put forward, the one concerning changes in the marital model seems the least adaptable to the Italian case: while present levels of fertility and mortality are not significantly different from the respective values in West Germany and Switzerland, the nuptiality and divorce profiles in Italy are very different from those found in other countries (especially Sweden), as we have already pointed out. Indeed, it is not expected that there will be such a great fall in nuptiality in Italy.[2]

The projection of the Italian population conducted under this scenario is, therefore, essentially of value as an interesting exercise aimed at evaluating the possible impact of a revolution in marital behavior on the aging and structure by marital status of the population. The results of the forecast show a dramatic fall in the total population, which would reach 37.611 million in 2050, compared to 41.323 million in the Benchmark Scenario. This would be due to the greater decrease in the number of young people (which would fall to 3.730 million in 2050, compared to 5.553 million in the Benchmark Scenario) and the greater decrease in the number of adults (which would fall to 19.222 million, compared to 22.876 in the Benchmark Scenario). These decreases could not be sufficiently compensated by the greater increase in the number of elderly people. There would be a notable aging of the population: the YADR would fall from 29% in 1985 to 17% in 2050, while the OADR would rise from 19% to 53%.

3.3. Changes in the Marital Composition of the Elderly

BENCHMARK SCENARIO

In 1985, 42% of the female population of over 60 years and 79% of the male population of the same age were married, 45% and 14% respectively were widowed, 0.3% were divorced, and 12% and 7% were single. Assuming that the other conditions of the demographic pattern remain constant over time, the changes which can be observed in the structure by marital status are merely the consequence of the effect of the structure by age and the gradual aging of the population, and not of any changes in the tendency to marry or divorce.

Aging for women leads essentially to reduction in the proportion (as well as the number) of single women (from 12% to 9%) and a steady increase in the share of widows (from 45% to 53%), while the percentage of married women increases to 42% in the year 2030 and then falls to 37% in 2050.

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[2]The present decline in marriages is attributed more to the present difficult economic situation than to a real change in customs, given that extra-marital cohabitation remains a rare phenomenon, and the most recent data on divorce rates reveal values which are still too low to enable us to predict such an accentuated destabilization of Italian family structures.

For men, too, there are increases in the percentage of widowers (from 14% to 17%) and in the percentage of single men (from 7% to 14%). The differences in the results between the two sexes is due to the state of the marriage market following the numerical imbalances between male and female generations born in the years of the baby bust: women benefit from the decrease in fertility as, due to the age difference between spouses (3-4 years), they can choose their partner from among a greater number of men.

The profile over time of the structure by marital status of the elderly population is also affected by the different level of aging caused by the arrival at the age of 60 of generations of different sizes. The final picture is that of an old-age group, over half of which consists of women (58%) married or widowed, and the rest of which consists of men who are mainly married. There is a decrease over time of the married whose overall share falls from 58% to 50%, with a corresponding increase in the proportion of non-married (divorcees, single and widowed persons) among whom widows prevail.

FERTILITY SCENARIO

This scenario assumes an increase in fertility to replacement level by the year 2005. Since neither the amount nor structure of the population aged 60 and over during the next 60 years will be affected by an increase in fertility, the marital status distribution of elderly people is identical to that of the Benchmark Scenario (Table 4c).

MORTALITY SCENARIO

The most interesting results from this scenario concern the variations which would take place in the structure by marital status, especially between men and women. In contrast to the Benchmark Scenario, the most significant variations would take place in the structure of the elderly population, while the composition of the population aged 15-60 would remain relatively unchanged. Due to the reduced sex-gap in mortality, the percentage of married women over 60 years would increase, while there would, on the other hand, be a considerable reduction in the percentage of widows, compared to the hypothesis of constant rates (see Figure 4c).

In the Benchmark Scenario the percentage of widows increased from 45% in 1985 to 53% in 2050, but in this scenario it would fall to 43%, while the percentage of married women would increase from 42% to 46%, compared with a decrease from 42% to 37% in the Benchmark Scenario. There would be a parallel fall in the percentage of married men, and a greater increase in the number of widowers than if the rates were to remain constant. In the last analysis, it would be women, above all, who would benefit from the reduction in the male mortality rates in terms of their living arrangements: the number of women doomed to long years of widowhood would drop sharply. Finally, it appears that in this scenario, as in the previous ones, the proportion of divorcees would remain small, whatever the age group considered.

Figure 4a. Percent single among the elderly
Males, Females

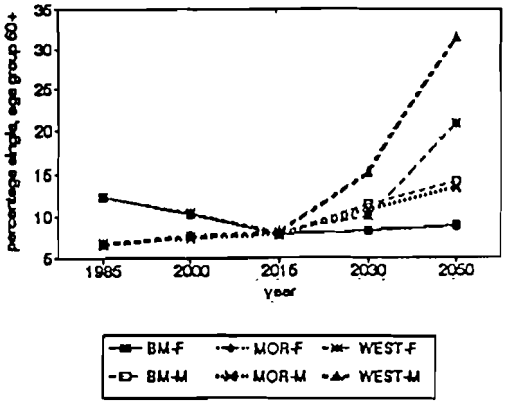

Figure 4b. Percent married among the elderly
Males, Females

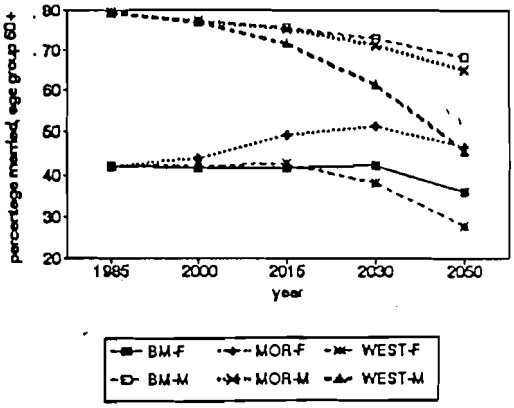

Figure 4c. Percent widowed among the elderly
Males, Females

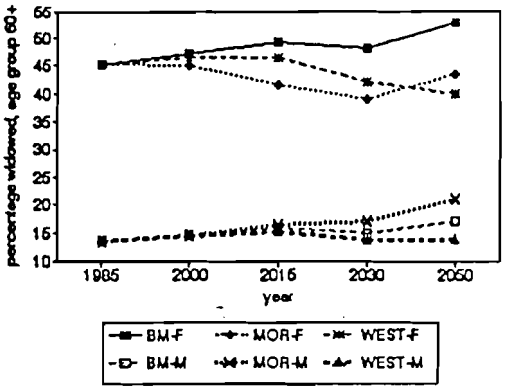

Figure 4d. Percent divorced among the elderly
Males, Females

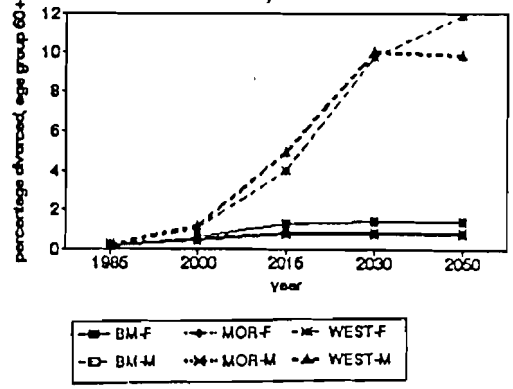

Figure 4. a) Percent single among the elderly. b) Percent married among the elderly. c) Percent widowed among the elderly. d) Percent divorced among the elderly. Males and females.

WESTERN SCENARIO

The main feature of this scenario is that the fall in nuptiality would lead to a decrease in the incidence of widowhood: the percentage of women who were widows from the age of 60 onwards would fall from 45% in 1985 to 40% in 2050, compared to the increase which would otherwise take place if the rates were to remain constant, and the percentage of widowers would remain almost unaltered.

Nonetheless, the living arrangements of the elderly would still be just as difficult: instead of a high number of widowed persons, there would be a very high number of single elderly persons. Society would have to take complete responsibility for their material and psychological support, especially as single persons lack the comfort and support that married persons may derive from their children's families.

In contrast to the previous scenarios, there is a marked, steady increase in the population of divorcees, due to the hypothesis of an increase in the divorce rate to match the level in Sweden, at least until the reduction of married persons causes a parallel fall in the number of people getting divorced. Nevertheless, the proportion of divorcees in Italy would still remain below 10%, even in 2050 (see Figure 4d).

4. The Labor Force and Activity Rates

When studying the impact of demographic changes on social security spending, the role played by shifts in the working-age population and their effects on the "contributing sector" is of key importance.

The overall labor force participation rate has remained steady at about 40% for the past 20 years. Looking at the situation in more detail, however, and breaking down the figures by sex and age, significant changes in the structure of the labor force can be discerned during the period from 1960 to the present.

Male labor force participation rates dropped from 81% in 1960 to 67% in 1984, falling steadily throughout the period except for a brief upward turn at the end of the 1970s (see Figure 5). The biggest drops were registered in the 14-19 and 60+ age groups. With school students staying longer in full-time education and an earlier retiring age pattern, the average length of time spent in employment was considerably reduced.

Even greater changes have been registered among the female population. The number of women in the labor market fell rapidly as Italy's economic boom took off, the country became more highly industrialized and the population became more urban. In the early 1970s, however, women between the ages of 25 and 35 began to make some headway in the labor market. The percentage of younger women in employment fell slightly from the mid-1960s until the beginning of the 1970s, only to pick up substantially during the 1980s, reaching 60% for the 20-25 age group, 59% for the 25-29 age group, and 56% for the 30-34 age group.

The overall picture of female employment has changed little, however, with 32% of the women in the labor force in 1960 and 34% in 1984. In line with the male population, far fewer females at the top and bottom ends of the age scale now work: 45% of 14-19 year olds worked in 1960 compared to 27% in 1984, while labor participation in the 65+ age group fell from 11% to 2% in the same period. Nevertheless, the growing participation of women between the ages of 20 and 50 in the labor market must certainly lead us to expect a higher female employment rate for the future.

The shape of the age-specific curve for female labor force participation rates has also changed considerably (Figure 5). This curve is gradually losing the classic "double camel-hump" shape caused by the withdrawal of women from active

employment due to family commitments, and has come to resemble the male curve a little more.

Further light can be shed on changes in female working patterns by breaking down employment rates according to marital status. Single women have traditionally occupied a fairly large section of the labor market, but employment rates of around 50% among married women are a recent phenomenon affecting even greater numbers of women in age groups between 20 and 45, generally considered to be the years when family commitments take up most time.

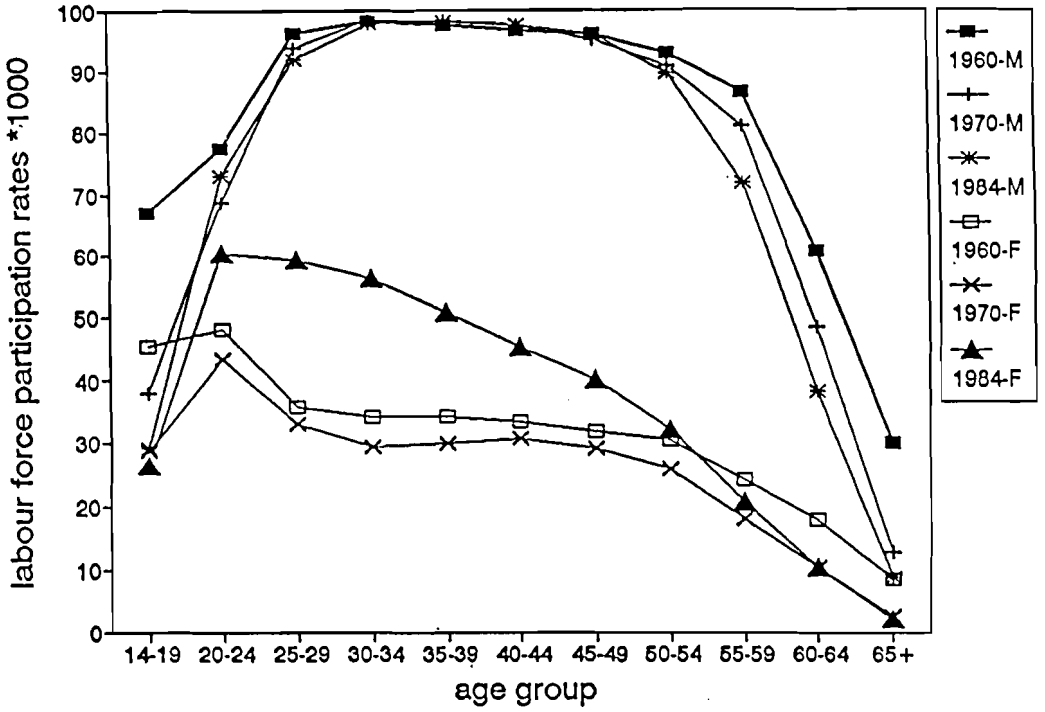

Figure 5. Labor force participation, males and females.

5. The Italian Pension System

The Italian pension system is very complex and finely structured as it is regulated by many laws which have followed one another over the course of time to regulate a wide range of different insurance schemes. In order to provide a general frame of reference, we should first identify the main groups of activities and the specific norms for each group:

a) employees (FPLD) (excluding those of categories C and D);
b) self-employed workers (farmers, artisans, tradesmen);
c) civil and military state employees;
d) local administration employees;
e) those over 60;
f) the disabled.

The management of pensions for old age, seniority of service, disabled, survivors, etc., takes place according to different schemes for each group. The schemes differ in relation to:

- definition of the requisites for the right to the pension;
- methods of calculating the pension itself;
- criteria governing the way in which the State supplements the pension to bring it up to the minimum;
- possible adjustments to the present pension being drawn.

The different characteristics of the various insurance schemes are summarized in Tables 5-7. Together, the schemes mentioned are responsible for over 90% of the pension expenditures paid out today in this country (see Table 5). (There are, indeed, other categories protected by private funds, such as journalists, doctors, lawyers etc.)

Table 5. Pension rules for different population groups.

Group protected	Old-age pensions					
	How financed	Minimum age		Years of contributions		How calculated
		M	F	Min.	Max.	
Private employees (FPLD)	ca. 25% of salary	60	55	15	40	2% * years of contr. * avg. salary last 5 years
Self-employed worker	Fixed amount + variable % of income	65	60	15	40	Usually the minimum (LIT 300,000)
State Employees	variable % of wage	65	65	15	40	Last month's wage
Local administration employees	variable % of wage	60/ 65	60/ 65	15/ 20	40	Last month's wage

It should be noted that insurance payments are calculated in terms of the pensions taken out in Italy in 1988 in a particular fund, rather than on the basis of the number of persons who benefit from them. As is the case in many other countries participating in this study, this is because the Italian pension laws governing the right to a pension concern each individual pension policy, regardless of whether the person who is entitled to this right has other pensions. As a result, there is a substantial difference between the number of pensions and the number of pensioners, and we do not yet have adequate statistics to calculate the ratio between these two quantities and furnish indications on the possible shape it might take.

We may note (Table 6) that the fund for private employees (FPLD) accounts for about 60% of the entire bulk of pensions taken out in 1988, which amounts to about 16 million in total. The remaining 40% was distributed among the self-employed (20%), public employees (11%), the social fund (5%), and the disabled (5%). If, however, we separate the pensions by type (old age or seniority of service, disability, survivorship), we may note that among the pensions paid just to the self-employed there are more disability pensions than pensions for old age or length of service, and that public employees receive more survivors' pensions than the self-employed, although the numerical superiority of the pensions distributed by the FPLD remains unchallenged.

Table 6. Characteristics of different Italian pension schemes, 1988.

Type of Fund	Number of Pensions (million)					Average Pension (million of liras)			Total Benefits	
	Old Age	Invalidity	Survivors	Total	%	Old Age	Invalidity	Survivors	Billion	%
FPLD	4,2	2,8	2,5	9,5	59.4	9.4	6.8	5.0	74684	60.0
Self-Employed:					19.5				16543	13.3
Farmers	0,37	1,25	0,17	1,79	11.2	5.6	5.6	2.5		
Craftworkers	0,17	0,33	0,18	0,67	4.2	5.3	5.4	3.4		
Tradesmen	0,25	0,26	0,14	0,65	4.1	5.2	5.3	2.8		
Civil Servants:					10.8				25713	20.7
State	0,81		0,37	1,18	7.4	18.0		13.0		
Local institutions (CPDEL, USL...)	0,40		0,15	0,55	3.4	14.8		12.2		
Social Fund	0,77			0,77	4.8	3.6			2830	2.3
Disability		0,87		0,87	5.4		5.2		4610	3.7
TOTAL				15,98	100.0				124380	100.0

If, on the other hand, we consider the average pension amount, the classification of the various funds is completely different: the average FPLD pension is worth LIT 9.4 million, while a state pension is worth 18 million, and a pension from CPDEL, the main fund for local administration employees, is worth 14.8 million; it is worth the least for self-employed workers and the social fund. The same is true of indirect pensions. In effect, state and local administration employees are entitled to a pension worth about double that of those covered by the FPLD fund, even though there are 5 times as many of the latter, so they receive a much greater share of the total contributions paid than might be expected given their small numbers. Even the ratio of pensions to contributors varies considerably from fund to fund (Table 7): it ranges from 820 per 1000 for private sector employees to 636 for self-employed workers and, among public employees, from 590 for state employees to 364 for CPDEL contributors. As far as the total amount of contributions is concerned we should finally mention the role played by those paid by the State, which contributes substantially, if not totally, to insurance payments (above all to

the FPLD, the funds for the self-employed and the social funds) though this payment is very much dependent on legislative provisions which are renewed every year and, therefore, difficult to predict.

Table 7. Ratio pensions per insured.

FUND	Ratio (* 1000)
FPLD	820
Self-Employed	636
Civil Servants: State	590
CPDEL	364

The observations so far made suggest that the notable diversity in terms of numbers and norms which characterizes the payment of contributions and the drawing of pensions among the various insurance schemes makes it essential to keep the characteristics of the various funds distinct from each other. This is necessary if one wishes to proceed with the forecasting of pension expenditures in Italy. And this, indeed, is the path followed in the many forecasts undertaken in this field by scholars, economists and actuaries. This would, however, require additional data and calculations that are far beyond the focus of this study.

Moreover, the calculation of the number of pensioners using a scheme-specific approach must involve estimates of the proportion of who is insured in that particular fund, out of the total active population and the ratio of pensioners to insurees. While the first proportion can easily be measured for the first year of the projection, it is extremely difficult to predict, given the large extent to which it depends on legislation (such as that which led to a doubling of CPDEL pensions in 20 years and, as such, has little to do with demographic evolution!). Moreover, the ratio pensioners/insurees is difficult to extrapolate for the same reason, and it should not be forgotten that a barrier is posed by the fact that there are no statistics for the number of pensioners, only for the number of pensions which have been taken out, which also makes it difficult to calculate the present number.

We should, therefore, concentrate on the main objective of this work, which was to evaluate, in an international comparative framework, the impact of demographic transformations, either underway or derived from reasonable scenarios, on the evolution of the measured pension burdens in demographic terms--transformations resulting from the impact of generations of gradually changing dimensions on the labor market (the contributing force) and on the system of those "eligible for a pension" (the absorbing force). If we limit ourselves to this, then the model is of notable innovative significance, considering the hitherto scant attention which has been paid by models of a mainly actuarial character to the possible or probable variations in the population structure, which is surely the principle input data of any model regarding social insurance.

This is why we have conducted an exercise in projecting the amount of pension expenditures, based on a single ("average") scheme, hypothetically valid at a national level, the initial data for which was obtained by taking the average of the real typical values for each fund: it is clear, given the extremely broad distribution of these values, how difficult it is to attribute any meaning related to a situation which might be realized to values for pension expenditures obtained in this manner. We cannot assume that any situation whatsoever, however close it might be to the present reality, can last in time, given the profound transformation of the labor market which is presently underway, increasingly inclined towards the intensification of activity in the services sector, which can only create further imbalances in the already delicate sector of social insurance.

We shall therefore give the following results a theoretical value: evaluating the possible impact of demographic trends on the pension system, under simplified hypotheses concerning the functioning of this system.

6. The Future of the Pension System

6.1. Total Pension Expenditures and Pension Claims

The aging of population--widely discussed above--will have a strong impact on the pension system. It is quite obvious that the overall number of retirees will increase, whichever demographic scenario is adopted: a rough estimation of this figure[3] (Gonnot 1990) shows that the percentage increase of the number of claimants between the years 1985 and 2030 will range from 67% in the Benchmark Scenario hypothesis to 108% under the Mortality Scenario assumptions (Table 8).

Table 8. Percentage increase in number of retirees (% relative to 1985).

Year	Benchmark	Fertility	Mortality	Western
1985	-	-	-	-
2000	25.0	25.0	30.7	28.5
2015	47.6	47.6	75.9	60.4
2030	66.5	66.5	108.3	85.6
2050	40.5	41.7	89.0	63.9

[3]This is calculated assuming the maximum cohort labor force participation rate between age 25 and 60 as an indicator for the proportion of people claiming a pension.

Table 9. Pension expenditures, index and growth rate, 1985-2050.

Scenario		Absolute (millions)	Index (1985 = 100)				Average Annual Growth Rate			
		1985	2000	2015	2030	2050	1985/00	2000/15	2015/30	2030/50
Benchmark	old age	107,738	117	126	144	122	1.1	0.5	0.9	-0.8
	survivors	18,420	119	126	134	125	1.2	0.4	0.4	-0.3
	total	126,158	118	126	143	123	1.1	0.5	0.8	-0.8
Mortality	old age		124	153	185	169	1.4	1.4	1.2	-0.4
	survivors		117	121	130	132	1.1	0.2	0.5	0.1
	total		123	149	177	163	1.4	1.3	1.2	-0.4
Western	old age		120	137	160	142	1.2	0.9	1.1	-0.6
	survivors		120	127	127	104	1.2	0.4	0.0	-1.0
	total		120	135	155	136	1.2	0.8	0.9	-0.7

Under simplified hypotheses, such as the use of a unique insurance scheme, the contribution rate and yearly benefits rate remain constant (Gonnot 1990), the total amount of pension expenditures varies year by year according to the estimated demographic trends.

Regardless of the scenario described, we can expect an increase in expenditure, which will already be considerable in the first period covered by the projection.

Between 1985 and 2000 real spending on pensions would rise by 18% in the Benchmark Scenario (see Table 9). Compared with 1985, increased expenditure in the following projection periods is even higher. A drop, however, can be observed for the period 2030-2050 when, as has been underlined on a number of occasions, a similar trend will occur in aging. It is envisaged that almost all of the annual average rates of expenditure growth would become negative.

Over 85% of expenditure will be devoted to old-age pensions: expenditures for the survivors' pensions will not exceed LIT 25 billion in the Benchmark Scenario, and they will grow at practically the same rate as old-age pensions (Table 10).

Table 10. Pension expenditures by type, 1985-2050.

Type	1985	2000	2015	2030	2050
	Benchmark				
Old Age	85.4	85.2	85.4	86.3	85.1
Survivors	14.6	14.8	14.6	13.7	14.9
Total	100	100	100	100	100
	Mortality				
Old Age	85.4	86.0	88.1	89.2	88.2
Survivors	14.6	14.0	11.9	10.8	11.8
Total	100	100	100	100	100
	Western				
Old Age	85.4	85.5	86.3	88.1	88.8
Survivors	14.6	14.5	13.7	11.9	11.2
Total	100	100	100	100	100

Tables 9 and 10 do not include results for the Fertility Scenario as this scenario does not lead to significant changes with respect to the Benchmark Scenario, a result which was anyway expected, given the minimal effects that we know an increase in fertility would have on demographic aging.

The Mortality Scenario, on the other hand, would have marked consequences: a reduction of mortality, while slowing down the growth of expenditure on the survivors at least initially, would lead to expenditure on old-age pensions up to 85% higher than that paid in 1985.

A reduction in fertility would have less effect, as expenditure on old-age pensions would increase by 60% between 1985 and 2030, while the growth of overall expenditure would be in the long run compensated by a reduction in expenditure on the bereaved. This would be due to changes in the structure of the population by marital status caused by Italian couples adapting their marital behavior to match European standards.

6.2. The Increase and Decrease of the Labor Force

Assuming that specific activity rates remain constant over time, the labor force, too, depends on the variations of demographic aggregates: it increases from 1985 to the year 2000, after which it drops steadily. The amount varies, however, according to the scenarios adopted (Table 11). In the Benchmark Scenario the maximum, in the year 2000, is 23.863 million actives, and the minimum, in 2050, is 15.571 million. In the Fertility Scenario, the increase in fertility, which takes place between 1985 and 2005, starts having some effect in 2015, and this becomes more pronounced in the following years: the 2050 minimum is 20.955 million. If there were an increase in survival (Mortality Scenario assumption), the size of the labor force would be slightly greater than in the Benchmark Scenario (the 2050 minimum is 16.257).

Table 11. Total labor force, 1985 and index 2000-2050.

Scenario	Absolute (in thousands)	Index (1985 = 100)			
	1985	2000	2015	2030	2050
Benchmark	22,981	104	97	83	68
Fertility		104	98	92	91
Mortality		104	99	86	71
Western		105	101	84	62
BM 65		113	107	94	76
BM GDR		141	134	116	94

According to the Western Scenario, on the other hand, the labor force would amount to 24.198 million units in the year 2000, then undergo an even sharper drop than in the other scenarios, with 14.179 million in 2050, as the increase in divorces

and the drop in marriages would only compensate for the drop in fertility in the initial years as the fertility rates gradually changed.

6.3. Ratio of Contributions to Benefits

As a consequence of a smaller number of contributors, the revenue of the system will be reduced as well, if the tax rate remains unchanged. With average income and pension claims held constant, the total contributions would cover a decreasing proportion of the pension expenditures (Table 12). In the case of the Benchmark Scenario the ratio contributions/benefits would pass from 79% in 1985 to 44% in 2050.

Table 12. Ratio (total contribution/total benefits) and balancing measures.

Ratio (total contribution/total benefits)					
	1985	2000	2015	2030	2050
BM	0.79	0.70	0.61	0.46	0.44
FER	0.79	0.70	0.62	0.51	0.59
MOR	0.79	0.68	0.53	0.39	0.35
WEST	0.79	0.70	0.59	0.43	0.36
BM65	0.79	1.01	0.85	0.66	0.58
BMGDR	0.79	0.79	0.69	0.54	0.52
Cuts in Benefits, 1985-2050 (% difference relative to 1985)					
	1985	2000	2015	2030	2050
BM	-	-11.4	-22.8	-41.8	-44.3
FER	-	-11.4	-21.5	-35.4	-25.3
MOR	-	-13.9	-32.9	-50.6	-55.7
WEST	-	-11.4	-25.3	-45.6	-54.4
BM65	-	27.8	7.6	-16.5	-26.6
BMGDR	-	0.0	-12.7	-31.6	-34.2
Balanced contribution rate, 1985-2050 (contribution rate in 1985: 24.2%)					
	1985	2000	2015	2030	2050
BM	30.6	34.6	39.7	52.6	55.0
FER	30.6	34.6	39.0	47.5	41.0
MOR	30.6	35.6	45.7	62.1	69.2
WEST	30.6	34.6	41.0	56.3	67.3
BM65	30.6	24.0	28.5	36.7	41.7
BMGDR	30.6	30.6	35.1	44.8	46.6

Different demographic evolutions will speed up or slow down this trend: in the Mortality or Western scenario hypotheses the ratio will be about 40% already in 2030 and it will further decrease over the following 20 years, while an increase in fertility is able to make the ratio stay over 50% up until the end of the projection.

The ratio contributions/benefits could be interpreted as an indicator of the financial deficit of the system. In an over-simplified situation, where the system could be completely financially balanced, the maintaining of the ratio at the 1985 level could be obtained by either increasing the contribution rate or reducing the level of paid pensions.

In the first hypothesis, the tax rate would already have to be more than 30% in 1985 compared to the present level of 24%. In the following years the burden on the contributors is expected to increase quickly (Table 12), especially if the demographic conditions will lead to fast aging: assuming the Mortality Scenario the contribution rate would have to be around the unpracticable level of 70%.

If, as an alternative, only the pensions were adjusted to cover the deficit of the system, cuts of as much as 50% would already be necessary in 2030 (see Table 12). Only an increase in labor force due to the rise in fertility could ensure that cuts in benefits were limited over the following decades (25% in 2050).

7. The Impact of Selected Policy Measures

Previous discussion shows that the aging of population is expected to cause a great deal of problems for the social security system. Figures for the future, although sometimes exaggerated because of the over-simplified hypotheses of the adopted model, indicate that if the present trends--declining fertility, mortality and nuptiality--continued, the balancing of the system would require hard economic sacrifice on the part of either the contributors or the retirees.

In this section we discuss some simple policy measures which may be taken to cope with the problem of demographic aging and avoid an excessive increase of the contribution rate or a severe benefits reduction.

The Benchmark-65 Scenario assumes that age at retirement is progressively raised to 65 years by the year 2005 for both males and females and that no survivor pensions are served under the age of 60. It means, for Italy, that each professional category will have the same retirement age norms as the State employees (see Table 5). This is exactly the object of a bill that parliamentarians are discussing in these months in order to solve at least the first "emergency" for the social security system. The GDR Scenario, on the other hand, acts on the contributing sector. It proposes that by the year 2005 both males and females would follow the pattern of labor force participation observed in 1985 in the Germany Democratic Republic, which is characterized by a high participation of women and no difference according to marital status. In our country this would lead to an overall female activity rate

of more than 50% compared to the 33% in 1985. Each of these so called "economic" scenarios assume constant demographic conditions.

The two economic scenarios would have a very strong impact (see Table 11). If the retirement age rose to 65 years, the labor force would certainly increase (maximum 26.020 million, minimum, in 2050, 17.569), but it would naturally increase even more if the rates of activity increased to match the GDR rates: in this case there would be 32.496 million actives in the year 2000, and the 2050 minimum would be 21.641. This is therefore the scenario which yields the highest values for the contributing population. However, the advantages of a larger labor force are offset by the subsequent increase in the number of pension claimants that in 2030 will pass from 12.323 million in the Benchmark Scenario to 15.725 in the GDR Scenario.

Much more favorable will be the effect of the "65" Scenario in reducing and keeping low the number of retirees relative to the labor force: the ratio between the amount of retirees and population in the labor force is steadily lower than any of the other scenarios (see Figure 6).

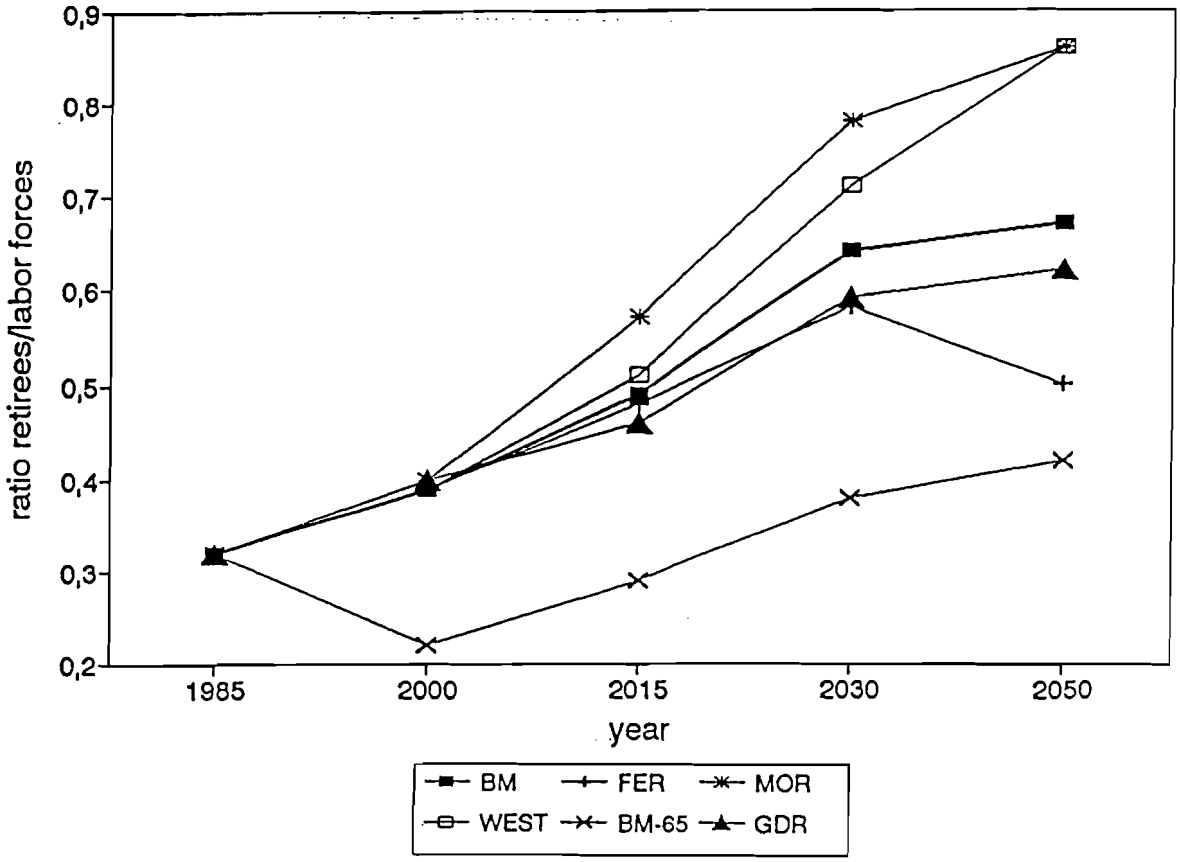

Figure 6. Old-age retirees/labor force.

Raising the retirement age to 65 years seems to be the best solution as far the financial balancing of the system is concerned (see Table 12). First of all, the ratio contributions/benefits would be very high at least until the year 2015 (1.01 in 2000 and 85%) and the crisis of the system could be delayed after the end of the projection period, and in 2050 the contributions would still cover about 60% of the total pension expenditures.

The positive effect of this measure is more evident if we look at the amount of "sacrifices" required in order to balance the system. No cuts in benefits would be required if we moved the retirement age to 65 years for both males and females: indeed, up until 2015 we could expect an increase in average pensions and in the long run we would have to reduce this amount by "only" 27%. The adjustment of the labor force (GDR Scenario) could also be helpful in maintaining pensions at a higher level than that generated by any of the demographic evolution hypotheses. At least in the short and medium period, the sharp and immediate increase of the labor force ensured by the GDR hypothesis would have a better effect on the system compared to that of a rejuvenation of the whole system due to an increase in fertility.

The balancing contribution rate would remain relatively low (less than 30%) until 2015 as the delayed retirement age pattern ("65" Scenario) would limit the burden on the contributing sector. In 2050 it would rise to 42%, a value in any case lower than those generated by the demographic scenarios. Only fertility would ensure a similar tax rate level (41%), but in the short and medium term the positive effect of this demographic measure is insignificant, and an "injection" of labor force such as the one provided by GDR Scenario could have a stronger impact.

8. Conclusion

The dynamic projection of the Italian population by marital status leads to the conclusion that, whichever scenario of possible evolution in demographic behavior, the aging process will not come to a halt, at least not by the year 2050. The wide range of possible assumptions proposed in this study contains the set of hypotheses usually made in Italy when dealing with the future of population. The main purpose of this exercise being the evaluation of the burden of old people on the active population, the results confirm that either a further reduction of mortality or a further decrease in fertility together with a slighter increase in life expectancy would have a strong impact on population aging. Even in the case of fertility increasing to replacement level the old-age dependency ratio will continue to increase until the year 2030.

The overall consequence of demographic changes on the performance of the state pension system looks dramatic. Assuming a hypothetical wholly financially balanced system, the total contributions paid by the labor force will cover a decreasing proportion of required pension expenditures. In order to balance the pension funds, assuming constant working and retirement behavior, it would be necessary in 2030 to decrease average benefits by about 40% (a minimum of 35% in the case of

increased fertility and a maximum of 51% in the case of decreased mortality); otherwise, the balancing contribution rate would amount to more than 50% of the gross salary (range 48%-62%).

To counteract the implications of population aging, different policy measures could be proposed. In the present simulation, the effect of two possible actions are estimated, the former aimed at increasing labor force participation rates (especially for women), the latter consisting in a delayed retirement age pattern.

A higher level of activity would have a beneficial, although limited, effect in the short and medium term, but in the long run it leads to a disturbing increase in entitlements. It seems to suggest that, in the long term, the "natural injection" of labor force ensured by the overall rejuvenation of the contributing part of the system (Fertility Scenario) would have a better impact than a forced activity rate increase.

Under constant demographic conditions, the raising of the retirement age to 65 years for both males and females seems by far the most efficient solution in avoiding (or, at least, delaying) the social security system crisis. This is the hypothesis which better warrants the planned programs of the Italian Government aimed at limiting demographic pressure on the system. In fact, in these months a bill concerning an increase in the minimum retirement age is being discussed in the Parliament.

Of course, it is a combination of social and economic measures which would probably need to reflect the complexity of the Italian social security system that would give the best solution, but the results so far discussed provide further proof that, from a strictly demographic point of view, the upward shift of the retirement age pattern is one of the most convenient measures for balancing the system.

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