Working Paper

Socio-Demographic Changes and the Pension Problem in France

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WP-92-24
February 1992

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PREFACE

The French 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-92-23   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

ACKNOWLEDGEMENTS

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. Six 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; (v) a National scenario, with a TFR of 1.80 and male and female life expectancies increasing until 2050 up to 88.6 years for females and 80.6 years for males; and (vi) a National Migration scenario, differing from the National scenario only by assuming an immigration of 100,000 persons annually.

The current pension system was combined with all six 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 France. An increase in fertility has no effect on the pension system until 2030, when a larger generation will enter the labor force. Immigration reduces the deficit of the pension system only until 2015. Both immigration and longer active periods for males and females will cause enormous 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. Economic solutions such as indexing pensions on net instead of gross income should be considered.

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SOCIO-DEMOGRAPHIC CHANGES AND THE PENSION PROBLEM IN FRANCE

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1. POPULATION TRENDS

1.1. Basic demographic trends

In comparison with other European countries, France has a particularly low fertility level at the beginning of the century. After World War II, the baby boom occurred in France as in other European countries (fig. 1). After the second maximum in 1964 (2.90 births per woman), the total fertility rate decreased slowly until 1971 (2.49). The 1971-1975 fall of fertility was moderate in France, the lowest point being 1.82 in 1978. After a slight recovery in 1980-1982 (1.94), fertility has stabilized a little above 1.80 birth. After the disappearence of large families in the 1950's, the low level of fertility is now due to the low level of first-order-births (for the woman) under 0.80 1st birth per woman in 1979; it regularly decreased afterwards to less than 0.75 in 1986. As long as a substantial increase in 1st-birth-order fertility does not occur, overall fertility will remain well under the replacement level. The 1986 family policy aimed at increasing the number of families with three children but has not been able to increase sharply total fertility rate.
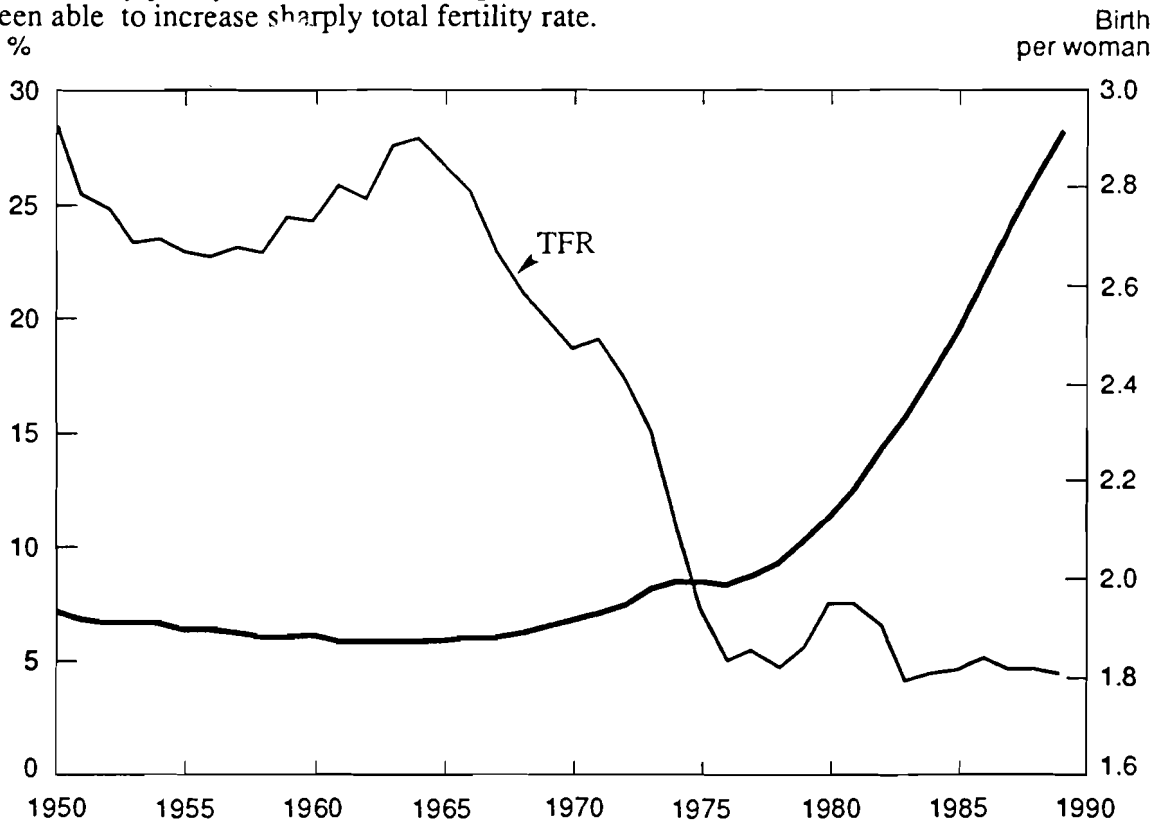

Figure 1. Total fertility rate and proportion of births out of wedlock

Illegitimate fertility which was around 6 % in the 1950's and 1960's has increased after 1968. Over 25 % of births are illegitimate in 1988.

After an increase until 1971 mainly due to earlier mean age at first marriage (from 23.3 years in 1950 to 22.4 years in 1974 for females and from 26.2 years to 24.5 years for males), primo nuptiality decreased (table 1). The proportion ever-married would reach 52.5 % for females (51.3 % for males) in the conditions of the year 1987. This evolution is partly due to consensual unions taking place before marriage or replacing legal marriage. Mean age at 1st marriage increased to 24.9 years for females and 27.0 for males in 1987. The present situation is closer to the European standard than for fertility. In 1988 1st marriages stopped decreasing and they will be higher in 1989 than in 1988.

Table 1. Nuptiality

Years	1950	1960	1970	1980	1085	1987
Crude Marriage rate						
	7.9	7.0	7.8	6.2	4.9	4.8
Mean age at first marriage						
Females	23.5	22.4	23.0	24.3	24.9	
Males	26.1	24.4	25.2	26.4	27.0	
Number of divorces p. 1000 married women						
	2.8	3.4	6.4	8.4	8.4	

Divorce was not very frequent before 1970: about 10 % marriages ended in divorce. Divorces increased after 1970 and 31 % of marriages end in divorce since 1986

After a rapid increase in the 1950's, life expectancy at birth showed a slower progress in the 1960's. Since 1975 a rapid progress reappeared and has accelerated since 1985. Life expectancy at birth was 72.0 years for males and 80.3 years for females in 1987. Consequently projections with low mortality are now preferred to projections with tendencial mortality made in 1985. Recent projections of mortality rates extend the decrease over 2020. The gap between male and female mortality in France is one of the most important in Europe, being over 8 years. It would not have changed by 2050 according to recent projections. Life expectancy at age 65 is 19.4 years for females and 15.0 years for males (table 1bis).

Table 1 bis. Mortality - Life expectancy -1950-1987

	1950	1960	1970	1980	1985	1987	1950	1960	1970	1980	1985	1987
			Females						Males			
Life expectancy (years)												
at birth	69.2	73.8	76.1	78.4	79.4	80.3	63.4	67.2	68.6	70.2	71.3	72.0
at age 60	18.4	19.5	20.8	22.4	23.0	23.7	15.4	15.6	16.2	17.3	17.9	18.4
at age 80	6.1	6.3	7.2	7.7	8.0	8.4	5.0	5.1	5.8	6.2	6.2	6.6
Survivors (per 1000 born)												
at age 60	795	860	882	903	913	918	697	754	774	790	803	814
at age 80	354	436	498	576	611	636	214	243	271	315	345	370

Natural increase is 0.4 % per annum since 1985 (crude birth rate (CBR) :13.9 per 1000 and crude death rate (CDR) :9.8 per 1000). It would not be negative before 2015 if fertility remains at 1.8.

Immigration of workers was high in the 1970's. It was followed by "family regroupment" migration. The 0 migration rate inferred in the INSEE projections since the 1982 census was

not reached and some officials estimate the net migration to be around 55,000 persons per year since 1982.

The proportion of persons aged 60 years and over was high already in 1950, due to ancient low fertility. The low fertility of the 1930's should slow the pace of ageing in the near future. Moderate fertility (1.8) should prevent extremely high proportions of the elderly, but an important increase will occur anyway.

1.2. Changes in the age structure of the population

1.2.1. Common scenarios

From 18.2 % in 1985, the proportion of the elderly population will slightly increase in the Bench Mark scenario (BM)[1] (table 2), reaching 19.5 % in 2000, and more rapidly afterwards: 22.6 % in 2015 and 26.0 % in 2030; little change will occur after 2030 - under the conditions included in this scenario. Higher fertility would reduce ageing after 2015, and more significantly after 2030, with 24.7 % of the population aged 60 and over (23.6 in 2050).

Note that the increase in the proportion of the elderly is below the increase in the number until 2030. Therefore, the population of the elderly will increase by 24 % (from 18.2 % in 1985 to 22.6 % in 2015 in the BM) when the numbers increase by 32 % (from 10.049.000 to 13.219.000).

The mortality scenario is quite plausible for women but is too optimistic for men. It leads to high proportions of the elderly: 25.4 % is reached as early as 2015 and 30.0 % in 2030. This is around 3 percentage points over the B M in 2015 and 4 and 5 percentage points respectively in 2030 and 2050. This quasi stabilisation of ageing after 2030 is only due to stabilisation of mortality; a further decrease of mortality rates would cause the prolongation of ageing (see below the national 1 scenario). Increase in the numbers of elderly is twice that of the BM in 2030 and after.

The different parameters of the Western scenario are not very realistic for France. The proportion of the population aged 60 and over is similar to the mortality scenario until 2015, then the proportion is much higher, reaching 38.4 % in 2050, 7 percentage points over the mortality scenario, and 12 over the BM; this is mainly due to the very low fertility of this scenario.

1BM : Rates of the 1980-1985 period constant until 2050.

Western : extreme rates observed in Europe in 1980-1985.

Fertility : fertility increases to replacement level in 2000.

Mortality : mortality decreases until 2025.

Table 2. Population by broad age-groups and sex ratio of the elderly, 1950-2050

| | Absolute (1000s) | | | | Relative (%) | | | | Sex ratio |
	0-14	15-59	60 +	Total	0-14	15-59	60 +	Total	60 +
1950	8 864	25 775	6 941	41 647	21.3	62.0	16.7	100.0	67.9
1960	11 848	26 057	7 560	45 465	26.1	57.3	16.6	100.0	64.1
1970	12 553	28 875	9 100	50 528	24.8	57.1	18.0	100.0	67.8
1980	12 002	32 585	9 145	53 732	22.3	60.6	17.0	100.0	67.6
1985	11 744	33 345	9 973	55 062	21.3	60.6	18.1	100.0	68.9
				Benchmark scenario					
2000	11 594	34 986	11 309	57 889	20.0	60.4	19.5	100.0	71.7
2015	10 562	34 647	13 219	58 428	18.1	59.3	22.6	100.0	73.5
2030	10 181	32 402	14 935	57 518	17.7	56.3	26.0	100.0	71.5
2050	9 337	30 244	14 098	53 679	17.4	56.3	26.3	100.0	70.8
				Fertility Scenario					
2000	11 922	34 986	11 309	58 217	20.5	60.1	19.4	100.0	71.7
2015	11 666	34 974	13 219	59 859	19.5	58.4	22.1	100.0	73.5
2030	11 808	33 812	14 935	60 555	19.5	55.8	24.7	100.0	71.5
2050	11 720	33 886	14 098	59 704	19.6	56.8	23.6	100.0	70.8
				Mortality scenario					
2000	11 611	35 103	11 847	58 561	19.8	59.9	20.2	100.0	74.2
2015	10 622	35 092	15 584	61 298	17.3	57.2	25.4	100.0	83.0
2030	10 268	33 008	18 608	61 884	16.6	53.3	30.1	100.0	85.3
2050	9 457	30 983	18 538	58 978	16.0	52.5	31.4	100.0	87.3
				Western Scenario					
2000	10 695	35 043	11 549	57 287	18.7	61.2	20.2	100.0	73.1
2015	7 447	33 949	14 169	55 565	13.4	61.1	25.5	100.0	77.5
2030	6 095	28 668	16 324	51 087	11.9	56.1	32.0	100.0	76.5
2050	4 167	21 027	15 693	40 887	10.2	51.4	38.4	100.0	76.7
				National 1 Scenario					
2000	11 249	35 056	11 678	57 983	19.4	60.5	20.1	100.0	71.9
2015	10 076	34 592	14 840	59 508	16.9	58.1	24.9	100.0	75.7
2030	9 429	32 017	18 099	59 545	15.8	53.8	30.4	100.0	76.1
2050	8 440	28 991	19 276	56 707	14.9	51.1	34.0	100.0	77.3
				National 2 Scenario					
2000	11 762	36 387	11 678	59 829	19.7	60.8	19.5	100.0	71.9
2015	11 015	37 673	14 887	63 575	17.3	59.3	23.4	100.0	75.8
2030	10 807	36 552	18 804	66 163	16.3	55.2	28.4	100.0	77.3
2050	10 311	35 319	21 170	66 800	15.4	52.9	31.7	100.0	79.3

1.2.2. National scenarios

The stable mortality of the BM makes this scenario not very probable. Life expectancy is now increasing rapidly. Even if quasi stabilisation of death rates, mainly for adult men, occurred in Western Europe in the 1960s, actual stabilisation or decrease in life expectancy at birth are only found in countries suffering heavy economic problems like in Eastern Europe and USSR. We prefer to project a brighter future with increasing economic development and life expectancy. Mean fertility in 1980-1984 (1.89) was swelled by the years 1980-1982 (1.94). In 1984 fertility was slightly over 1.80, which could be the best level to project. - Anyway, a rapid increase in fertility would substantially affect the size of the labor force from 2030 only. - Consequently, the National 1 scenario differs from the BM by fertility (1.80) and by increasing life expectancy until 2050 (88.6 years for females and 80.6 years for males) (Mesle and Vallin, 1989). Marriages and divorces are the same as in the BM. Two other caracteristics of the National 1 scenario are increasing labor force participation rates for females, (about stable rates for males) (Marc and Marchand), and progressively postponing age at retirement, starting in 2010 to reach 65 years in 2030 for both sexes - the latter hypothesis aims at reducing the increase in pension expenditures due to the baby-boom cohorts. - Let's remind that the possibility of postponing retirement age will mainly depend on the situation of the labor market. - In the National 2 scenario, the immigration of 100.000 persons of all ages and both sexes was included yearly. This represent a moderate immigration (slightly over the observed one in recent years). A yearly immigration of 50,000 persons would not much change the results of the National 1 scenario.

Ageing in the national 1 scenario is much quicker than in the BM. In 2015 the proportion of the elderly is more than 2 percentage points higher than in the BM (24.9 %). In 2050 (with 34.0 %) the difference with the BM is almost 8 percentage points.

Immigration slightly reduces ageing by 1.5 percentage point in 2015 and 2.3 percentage points in 2050.

In the National 1 scenario, from 1985 to 2015, the number of the elderly is increased by 49 % and by 93 % in 2050. From 2030 the number of the population aged 60 and over in the national 2 scenario is higher than in the national 1, by 4 % in 2030 and by 10 % in 2050, due to ageing of immigrants.

The different scenarios show that the best way to limit ageing in the long term is an increase in fertility to the replacement level. Increasing life expectancy is responsible for a huge increase in the elderly population.

The sex ratio of the elderly (table 2) will increase until 2015 in the BM and the Western scenarios. Stabilisation is only due to the stabilisation of mortality rates in these scenarios. Increasing life expectancy until 2050 causes an increase of the sex ratio until the end of the projection period.

1.3. The marital composition of the elderly population

In the BM, the proportion of single elderly people of each sex (table 3) will sharply increase after 2015; the proportion of them married decreases from 1985 to 2015, more rapidly for men than for women, and at the same pace for both sexes afterwards. These evolutions are due to lower nuptiality in the generations born after 1950. The proportion divorced will mainly increase until 2015. No marked change will occur in the proportion of widows or widowers.

Table 3. Marital composition of the population aged 60 and over, 1985-2050.

	Females					Males				
	Single	Married	Divorced	Widowed	Total	Single	Married	Divorced	Widowed	Total
1985	8.6	42.3	3.6	45.5	100.0	7.9	76.2	2.8	13.1	100.0
Benchmark Scenario										
2000	7.2	41.0	5.6	46.1	100.0	8.9	72.1	4.7	14.3	100.0
2015	7.6	39.6	9.3	43.5	100.0	10.1	69.0	7.3	13.6	100.0
2030	11.8	35.7	10.3	42.3	100.0	16.1	63.4	7.4	13.1	100.0
2050	14.3	32.6	10.1	43.0	100.0	19.1	60.6	7.3	13.0	100.0
Fertility Scenario										
2000	7.2	41.0	5.6	46.1	100.0	8.9	72.1	4.7	14.3	100.0
2015	7.6	39.6	9.3	43.5	100.0	10.1	69.0	7.3	13.6	100.0
2030	11.8	35.7	10.3	42.3	100.0	16.1	63.4	7.4	13.1	100.0
2050	14.3	32.6	10.1	43.0	100.0	19.1	60.7	7.2	13.0	100.0
Mortality Scenario										
2000	7.2	43.1	5.6	44.1	100.0	8.9	72.3	4.6	14.1	100.0
2015	7.6	46.4	9.0	37.1	100.0	9.9	69.0	7.0	14.1	100.0
2030	11.3	44.1	10.2	34.4	100.0	15.1	62.9	7.3	14.7	100.0
2050	13.8	40.2	10.2	35.7	100.0	18.6	58.0	7.2	16.2	100.0
Western Scenario										
2000	7.2	42.0	5.7	45.1	100.0	9.0	71.7	4.9	14.4	100.0
2015	7.7	41.0	10.9	40.5	100.0	10.1	65.9	10.0	13.9	100.0
2030	12.5	35.4	14.8	37.3	100.0	17.2	56.8	12.7	13.3	100.0
2050	23.7	27.4	14.7	34.2	100.0	31.4	44.9	11.6	12.1	100.0
National 1 Scenario										
2000	7.2	41.7	5.6	45.4	100.0	8.9	72.6	4.7	13.8	100.0
2015	7.6	42.4	9.0	41.0	100.0	10.0	70.1	7.1	12.8	100.0
2030	11.2	40.4	10.2	38.2	100.0	15.4	64.9	7.4	12.4	100.0
2050	13.7	37.8	10.2	38.3	100.0	18.6	60.8	7.2	13.3	100.0
National 2 Scenario										
2000	7.2	41.7	5.6	45.4	100.0	8.9	72.6	4.7	13.8	100.0
2015	7.5	42.5	9.0	40.9	100.0	10.0	70.1	7.2	12.8	100.0
2030	11.2	41.1	10.2	37.6	100.0	15.4	65.1	7.4	12.0	100.0
2050	13.3	38.9	10.2	37.5	100.0	18.7	61.2	7.3	12.9	100.0

The proportion single is multiplied by 2 between 2000 and 2050. The proportion divorced will be almost 3 times as high in 2030 as in 1985. But the proportion of the elderly population in these marital statuses is still low in 2050: 7 % for divorced males (10 % for females) and 19 % and 14 % for singles males and females respectively. The result is a decrease in the proportion married by 10 percentage points, from 42 % to 32 % for women, by 15 points, from 76 % to 61 % for men.

The mortality scenario only changes the proportion of married and widowed persons. Married women and widowed men are more frequent in this scenario, due to the narrowing of the sex-gap in mortality.

The Western scenario sharply increases the proportion of single persons between 2030 and 2050, and consequently decreases the proprotion married. The proportion divorced goes on increasing after 2015. The proportion of widowed women decreases after 2015; no marked change occurs for widowed men.

The two national scenarios are very close to each other in terms of marital status of the elderly and they are close to the BM for males, as projected marriage and divorce rates are the same in these scenarios. For females, the decreasing mortality of the national scenarios causes lower proportions of widowed (5 percentage points) and equally higher proportions of married women than in the BM scenario.

1.4. The working-age population

The working-age population of both sex (table 4) increases until 2000 and decreases sharply after 2015 in the BM (by 7 % between 2015 and 2030 and another 7 % between 2030 and 2050). The fertility scenario reduces very much the decrease which is between 3 % and 4 % from 2015 to 2030. Then a stabilisation appears. The mortality scenario is very close to the BM but it reduces slightly the decrease. The Western scenario causes a huge decrease of the working age population (12 % from 2015 to 2030 and 24 % from 2030 to 2050).

Table 4. Population aged 15-59

Scenario		1985	2000	2015	2030	2050
				Absolute (1000s)		
Benchmark	total	33 426	34 986	34 647	32 402	30 244
Fertility	total		34 986	34 974	33 812	33 886
Western	total		35 043	33 949	28 668	21 027
Mortality	total		35 103	35 092	33 008	30 983
National 1	total		35 056	34 592	32 017	28 991
National 2	total		36 387	37 673	36 552	35 319
				Index		
Benchmark	total	100	105	104	97	90
Fertility	total		105	105	101	101
Western	total		105	101	86	63
Mortality	total		105	105	99	93
National 1	total		105	104	96	87
National 2	total		109	113	110	106

After 2000, the working age population in the National 1 scenario is slightly lower than in the BM, mainly due to fertility (1.80 against 1.89). It decreases mainly after 2015, being in 2050 13 % under the number in 1985. In the national 2 scenario, immigration increases the number of the 15-59 age-group until 2015, but afterwards low fertility causes a decrease, though, the number in 2050 is still higher than in 1985, and is only 7 % lower than in 2015.

The marital composition of the working age population shows little change in the BM. The main evolutions take place before 2015; they are a decrease in the proportion married and consequent increases in the proportion divorced from 1985 to 2000 and in the proportion single from 2000 to 2015. A slight increase in the proportion of married women occurs after 2015. In the fertility scenario it is noticeable that the increase in the proportion of married females of the BM gives place to a similar increase in the proportion single after 2015. For single males the same increase as for females occurs and is compensated for by a slight decrease in the proportion of married persons. These are due to changes in the age-structure of the 15-59, following fertility increase. Mortality scenario is quite close to the BM for males. The proportion of widowed women is reduced by 1.3 percentage point, which is relativly very important (from 3.5 % in 1985 to 2.2 % in 2015); the proportion married increases in consequence.

The Western scenario increases the proportion single and decreases the proportion married until 2050, the former being about equal to the latter in 2015 for females and then larger (it is larger for males from 2015). The proportion divorced gets higher than in the BM, by around 3 percentage points (6.8 % to 9.9 % for females, 5.0 % to 7.8 % for males) in 2015 and decreases slightly afterwards. For females a slight decrease of the proportion widowed appears after 2000. The two national scenarios are close to the BM.

The position of the different scenarios regarding the old age dependency ratio (OADR) (fig. 2, table 5) is the same as for the proportion of the 60+; but a little more favorable in the Western scenario, as the decrease in the population aged 0-14 is not taken into account in this index. In 1985 there were 19.7 persons in the age group 65 and over per 100 persons aged 15-64. The ratio will be between 23% and 24% in 2000 in any scenario. The most probable scenarios lead to between 28% and 29% in 2015. The period 2015-2030 will be that of maximum ageing, the OADR in 2030 being higher than in 2015 by 10 or more percentage points in the mortality, Western and National 1 scenarios. Only immigration or an increase in fertility would markedly reduce ageing. Ageing would increase at a lower pace after 2030, reaching 48 persons aged 65 and over for 100 persons of working age in 2050 (National 1 scenario).

%
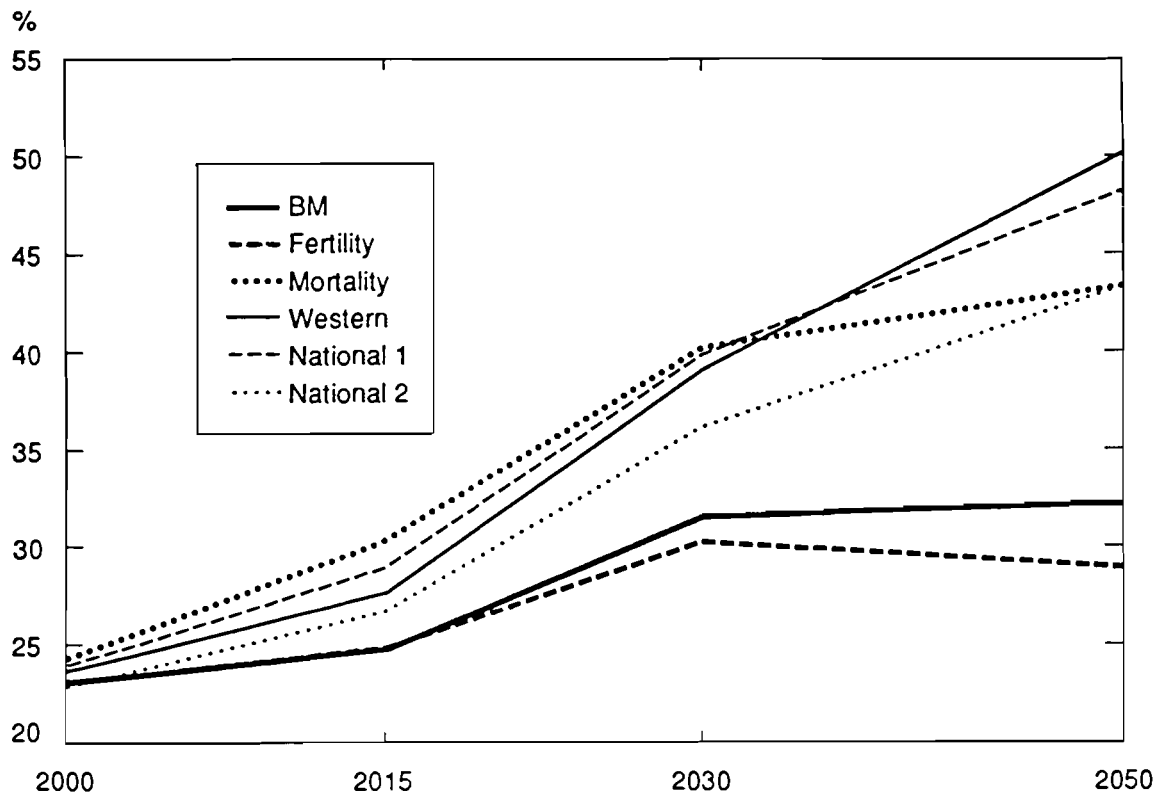
Figure 2. Old age dependency ratio

Table 5. Dependency ratios, 1985-2050

Scenario	1985	2000	2015	2030	2050
Under 15					
Benchmark	32.2	30.8	27.6	28.3	27.9
Fertility		31.7	30.2	31.6	31.5
Mortality		30.7	27.3	27.9	27.4
Western		28.4	19.8	18.8	17.1
National 1		29.8	26.3	26.3	25.9
National 2		30.1	26.6	26.6	26.2
65 and Over					
Benchmark	19.7	23.1	25.0	31.6	32.3
Fertility		23.1	24.8	30.4	29.1
Mortality		24.3	30.2	40.2	43.5
Western		23.6	27.7	39.1	50.4
National 1		24.0	28.9	40.0	48.4
National 2		23.1	26.7	36.1	43.6
Total					
Benchmark	51.9	53.9	52.6	59.9	60.1
Fertility		54.8	55.0	62.0	60.6
Mortality		55.1	57.5	68.0	70.9
Western		52.0	47.5	57.9	67.5
National 1		53.8	55.1	66.4	74.3
National 2		53.3	53.3	62.6	69.8

2. PENSIONS

2.1. The pension system

There are over 100 pensions regimes, dealt by over 400 foundations (table 6). The diversification will still increase with the new systems of insurance appearing now (see below fourth level). The total pension expenditures represented 11.3% of GNP in 1988 or 647 billion FF.

Table 6. Total Numbers of old age pensions paid by the main Social Security Regimes

	1985 (au 1.7)	%
Régime général	5 860 554	44.96
Régime des salariés agricoles	1 333 730	10.23
Fonctionnaires civils et militaires	1 180 877	9.06
Collectivités locales	293 840	2.25
Ouvriers d'Etat	103 547	0.79
Imprimerie Nationale	200	0.00
S.N.C.F.	368 800	2.83
Mines	404 539	3.10
Etablissement National des Invalides de la Marine	80 499	0.62
E.D.F.-G.D.F.	111 905	0.86
Chemins de Fer Secondaires	34 864	0.27
R.A.T.P.	37 752	0.29
Autres régimes de salariés	57 837	0.44
Commerçants (ORGANIC)	753 799	5.78
Artisans (CANCAVA)	493 487	3.79
Professions libérales	89 698	0.69
Exploitants agricoles	1 766 900	13.55
Mutuelle d'assurance vieillesse des cultes	62 572	0.48
Total	13 035 400	100.00

Source :CNAVTS, La Retraite des salariés, Sécurité sociale, Rapports annuels.

The pension scheme is a three levels system.

- basic insurance (compulsory); this is the so-called "Regime General" for wage-earners

- complementary insurance (compulsory) AGIRC, ARCO, etc...

- supplementary insurance (optional), and rather for higher staff.

A fourth level appears with voluntary insurance, consisting of different types of pension plans proposed by Savings-Banks, Insurance Companies and other enterprises.

The first three levels are pay-as-you-go systems. The fourth level is a saving-type system.

Civil servants have a unique Regime regrouping basic and complementary levels. For non-wage earners, the basic regime is identical to the "Regime General".

Inactive people may contribute to a basic regime. Aid (minimum vieillesse) is given to any person receiving no pension, if he/she is without minimum private means ("condition de ressources").

The basic level is regulated by laws or decrees. The complementary level is regulated by lobby groups ("partenaires sociaux").

Disability pensions, early retirement and arduous work pensions, given according to age or activity duration, exist. Disability pensions are commuted to old age pensions at the age of 60. Survivors pensions called "droits dérivés" may be cumulated with old-age pensions - with an upper ceiling ("avec condition de ressources") at the Regime General.

Pensions served by the basic level are calculated by annuities 50 % of the 10 (25 in a near future) best years of salary will be given as a pension for a full right; 75% of the 6 best months for a civil servant. The complementary level is a system of points. The value of the point is evaluated yearly.

A full pension is given at the age of 60 (55 or 50 for some categories of workers, SNCF, teachers...) for 150 terms (37.5 years) of activity (table 7). Interruptions of activity creates right to pensions (child rearing,illness...)

Table 7. Characteristics of Regime General

Number of pensions paid (1000s)	5 860
Total benefits paid (millions of francs)	147 014
Average annual old-age benefits (francs)	25 107 [2]
Number of persons insured (1000s)	12 944
Ratio pensions/insured (per 1000)	2 210
Contribution rate	13.9
Full pension	50 % for 37.5 years
Income basis for calculating benefits	last 10 years [1]
Upper ceiling for contribution and benefits	Yes

(1) Last 25 years from 1990.

(2) The Regime General represent less than 50 % of the pensions paid in France. This value is 53 579 at the Income
    Survey (INSEE) including basic aid (Minimum vieillesse).

Pensions are reevaluated on the basis of the price index (better than the wage index). Bonus are given for children or spouse in charge. Contributions rate was 13.9 % in 1985 (14.8 % in 1987) at the "Regime General", 4.8 % at the complementary level, and 2 % for the effect of lowering retirement age at 60.

Solidarity is the basic principle of the system.

- Solidarity between generations

- national solidarity: income taxes provide 10 % of the pensions fund (Regime General), other taxes 5 %; 85 % comes from the contributions

- solidarity between regimes: a complex calculation of compensation balances the treasury of the different regimes.

2.2. Retirement and work pattern

Retirement age was 65 years until 1981, when it was reduce to 60. Main data are available only from the Regime General, so mean age at retirement which they enable us to calculate does not exactly represent the real situation (fig. 3 and 4). It seems that practice never suited

the legislation: in 1979, mean age at retirement was 64 years for both sexes. It decreased after 1981 and was 62.4 years in 1984 and 1985. It is 61.6 years for both sexes over the whole projection period in the IIASA scenarios. At the Regime General, mean activity duration was 31.8 years for men and 29.3 for females for old-age pensions, against 37.5 years requested. Note here that 40 years ago the pensions system didn't work properly and some people worked without paying contributions.
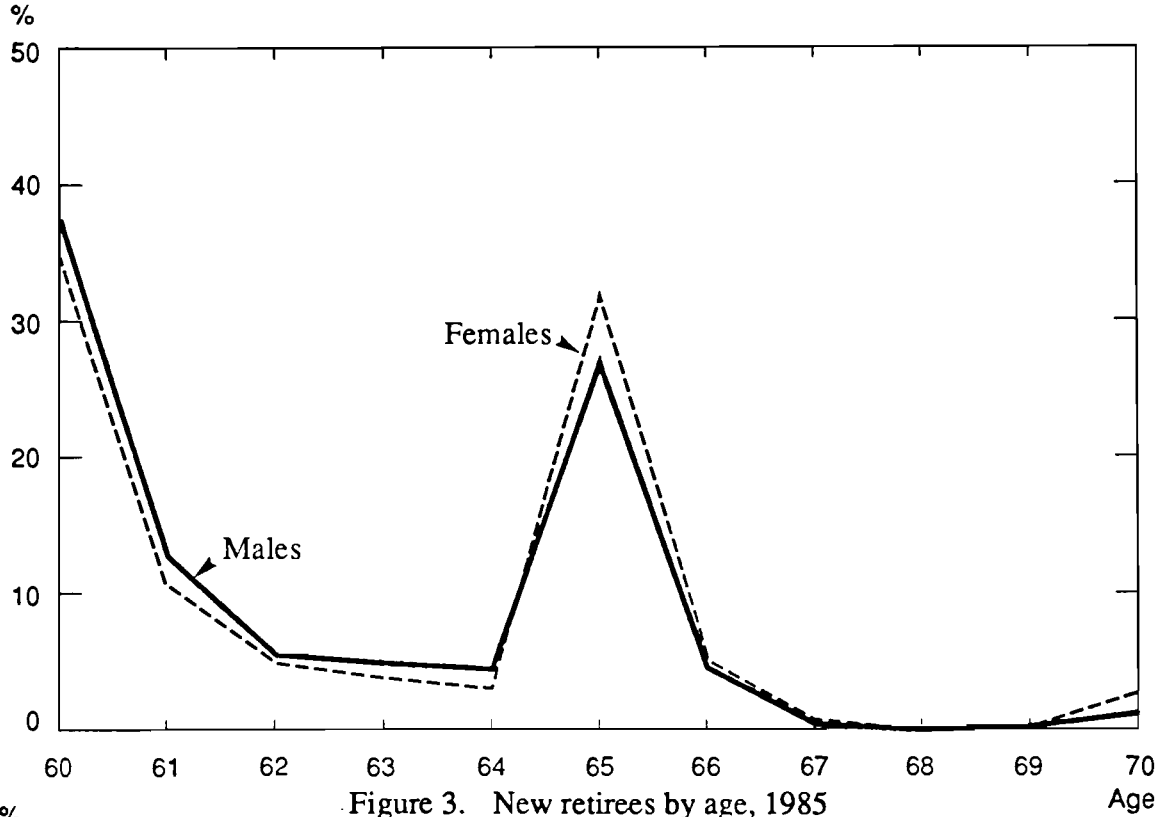
Figure 3.   New retirees by age, 1985
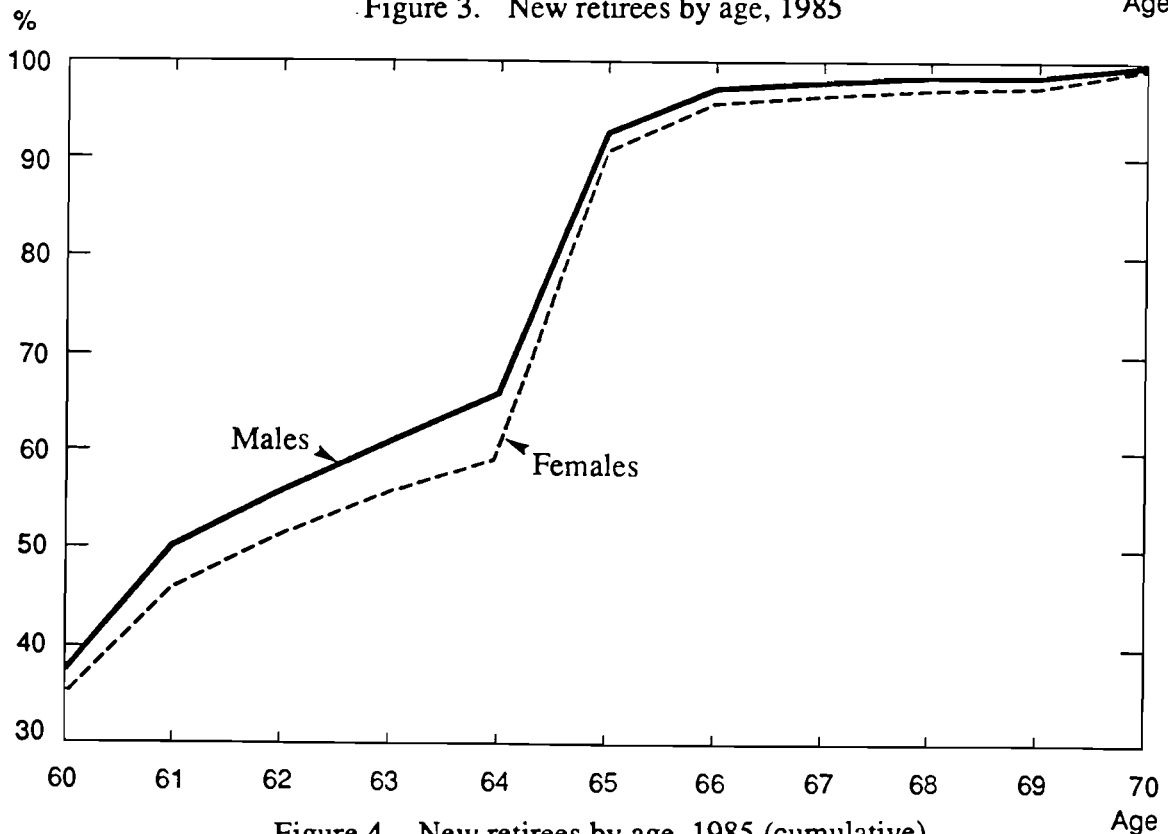
Figure 4.   New retirees by age, 1985 (cumulative)

Female activity is rapidly increasing since 1975 (fig. 5). According to the 1985 employment survey, 74 % of all women (69 % of spouses) (fig. 6) aged 25-29 were active and over 70 % (66 % of spouses) until the 40-44 age group. Activity rate of women without spouse is 90 % at the adult ages.
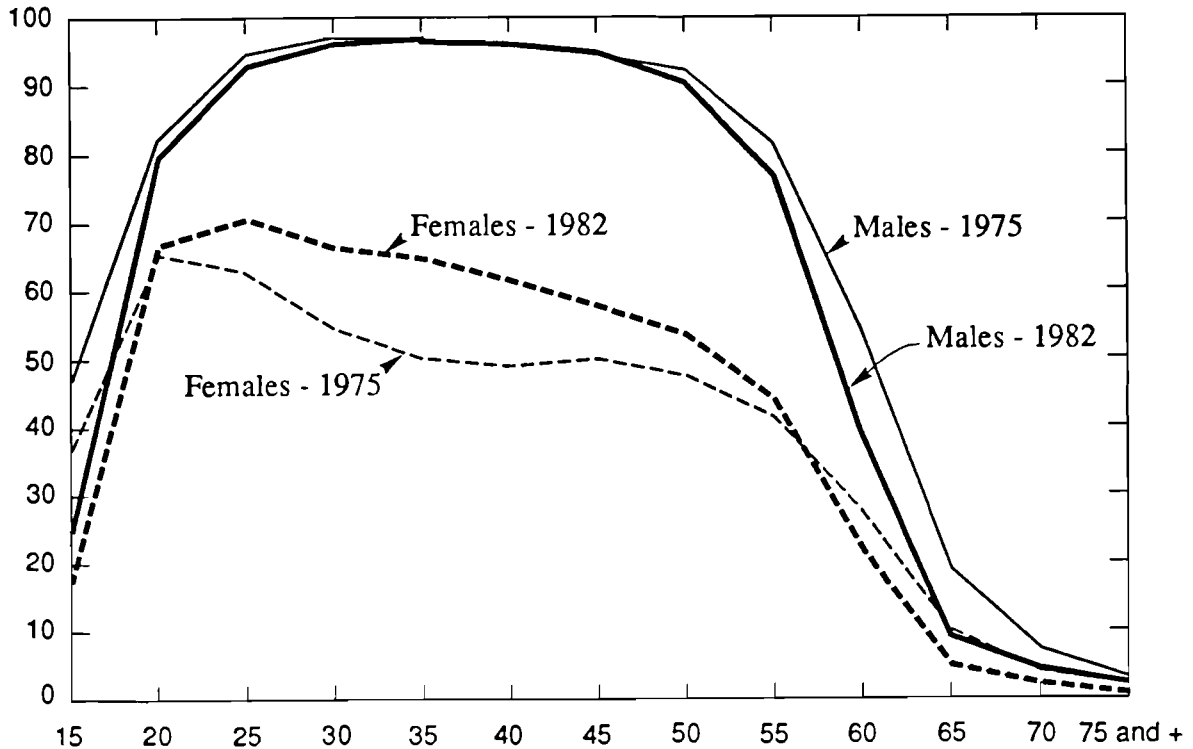
Figure 5. Labor force participation rates by age and sex, 1975 and 1982 censuses
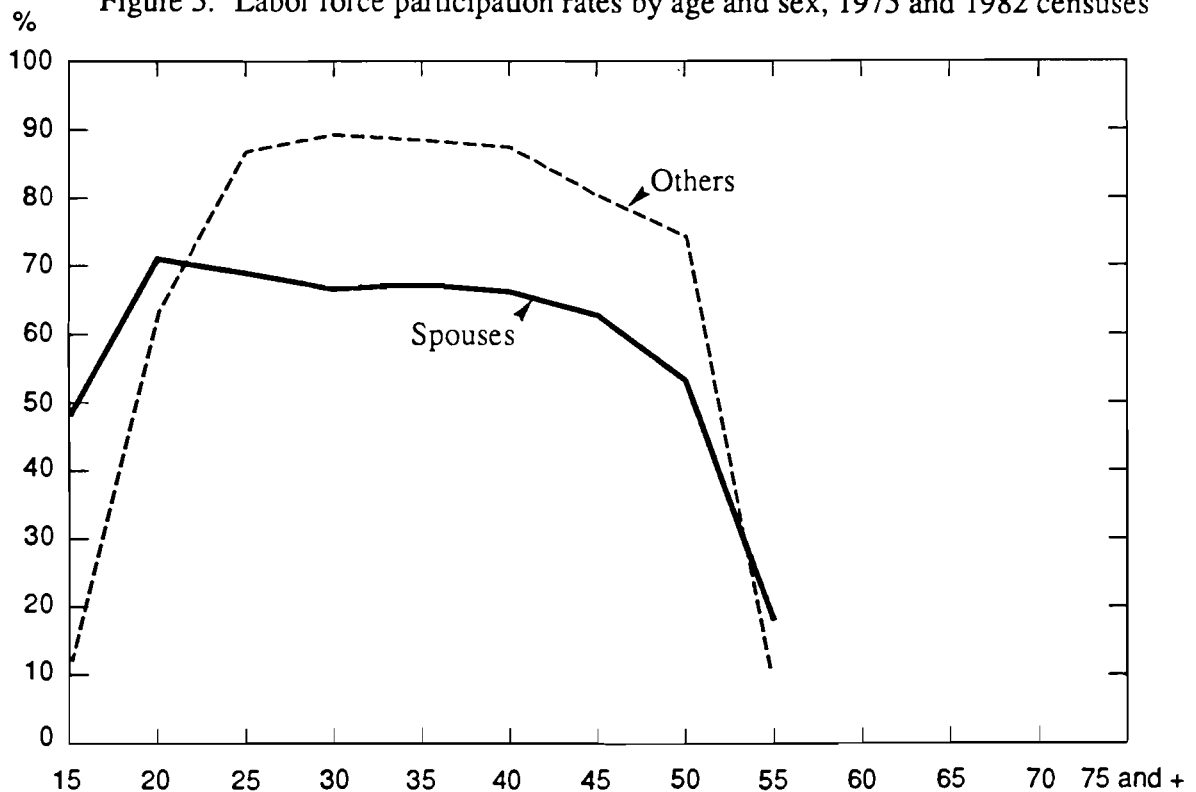
Figure 6. Labor force participation rates of women by marital status, 1985
Employment Survey, INSEE

Male activity will decrease very slightly in a near future, but it could increase again if retirement age at 65 is reset. 97 % of men aged 35-39 were active in 1985.

The projected trends of labor force participation rates for females and males results in the evolution of average number of years worked presented in tables 8 and 9 and in the percentage of pensioneers shown in table 10.

Table 8. Average number of years worked at mean age at retirement, 1985-2050 (constant labor force participation rates -benchmark scenario)

|	1985	2000	2015	2030	2050
Males	41.9	41.4	39.7	38.8	38.7
Females	21.8	22.9	26.2	26.8	26.8

Table 9. Average number of years worked at mean age at retirement. Women by marital status, 1985-2030 (constant labor force participation rates -benchmark scenario)

	Single	Married	Divorced	Widowed
1985	33.5	19.5	29.5	23.6
2000	34.5	22.0	30.7	26.0
2015	33.7	23.7	32.1	27.7
2030	33.3	23.3	31.7	27.3

Table 10. Percentage claiming for old-age pension, 1985-2050 (maximum cohort activity rate)

	Date at which mean age at retirement is reached				
	1985	2000	2015	2030	2050
Males	99.3	98.6	97.0	97.0	97.0
Females					
single	79.8	80.7	87.2	87.2	87.2
married	43.1	46.3	60.0	73.3	73.3
divorced	77.6	80.7	85.5	85.5	85.5
widowed	73.2	78.9	78.9	78.9	78.9

2.3. Pensions expenditures

The "retirees's boom" causes an explosion of the pensions expenditures (table 11 and fig. 7). In the BM and in the Fertility scenarios, pensions expenditures increase until 2030 and then decrease as does the population aged 60 and over. The increase is most rapid from 2000 to 2015 (average annual growth rate being respectively 0.9 % in 1985-2000, 1.2 % in 2000-2015 and 1.0 % in 2015-2030). Expenditures are 37 % higher in 2015 than in 1985 for males. The increase in female pensions expenditures is more rapid than for males (46 % from 1985 to 2015), as female activity is increasing. Total pensions expenditures, including survivors pensions, will have increased by 38 % in 2015, 60 % in 2030. In the BM, survivors pensions

expenditures are 12.7 % of the total in 1985, 11.4 % in 2015 and 11.1 % in 2050 (11.2 % in National 1 and 8.2 % in mortality scenario).

Table 11. Pension expenditures, 1985-2050

Scenario		1985	2000	2015	2030	2050	2000	2015	2030	2050
			Absolute (millions of francs)				Index (1985 = 100)			
Benchmark	old age	276 952	320 559	389 102	453 128	428 231	116	140	164	155
	survivors	40 427	44 815	50 411	55 310	53 269	111	125	137	132
	total	317 378	365 374	439 513	508 439	481 500	115	138	160	152
Mortality	old age		337 291	466 467	579 025	581 320	122	168	209	210
	survivors		44 059	47 016	50 912	52 049	109	116	126	129
	total		381 350	513 484	629 936	633 369	120	162	198	200
Western	old age		328 627	421 446	504 129	490 805	119	152	182	177
	survivors		44 305	48 590	51 061	44 665	110	120	126	110
	total		372 932	470 036	555 191	535 470	118	148	175	169
National 1	old age		332 742	402 720	490 005	549 952	120	145	177	199
	survivors		45 386	50 292	55 411	58 869	112	124	137	146
	total		378 128	453 012	545 416	608 821	119	143	172	192
National 2	old age		332 750	403 823	502 372	599 881	120	146	181	217
	survivors		45 390	50 376	56 286	62 628	112	125	139	155
	total		378 140	454 199	558 658	662 509	119	143	176	209

|		Percentage					Average Annual Growth Rate (%)			
		1985	2000	2015	2030	2050	1985/00	2000/15	2015/30	2030/50
Benchmark	old age	87.3	87.7	88.5	89.1	88.9	1.0	1.3	1.0	-0.3
	survivors	12.7	12.3	11.5	10.9	11.1	0.7	0.8	0.6	-0.2
	total	100.0	100.0	100.0	100.0	100.0	0.9	1.2	1.0	-0.3
Mortality	old age		88.4	90.8	91.9	91.8	1.3	2.2	1.4	0.0
	survivors		11.6	9.2	8.1	8.2	0.6	0.4	0.5	0.1
	total		100.0	100.0	100.0	100.0	1.2	2.0	1.4	0.0
Western	old age		88.1	89.7	90.8	91.7	1.1	1.7	1.2	-0.1
	survivors		11.9	10.3	9.2	8.3	0.6	0.6	0.3	-0.7
	total		100.0	100.0	100.0	100.0	1.1	1.5	1.1	-0.2
National 1	old age		88.0	88.9	89.8	90.3	1.2	1.3	1.3	0.6
	survivors		12.0	11.1	10.2	9.7	0.8	0.7	0.6	0.3
	total		100.0	100.0	100.0	100.0	1.2	1.2	1.2	0.5
National 2	old age		88.0	88.9	89.9	90.5	1.2	1.3	1.5	0.9
	survivors		12.0	11.1	10.1	9.5	0.8	0.7	0.7	0.5
	total		100.0	100.0	100.0	100.0	1.2	1.2	1.4	0.9
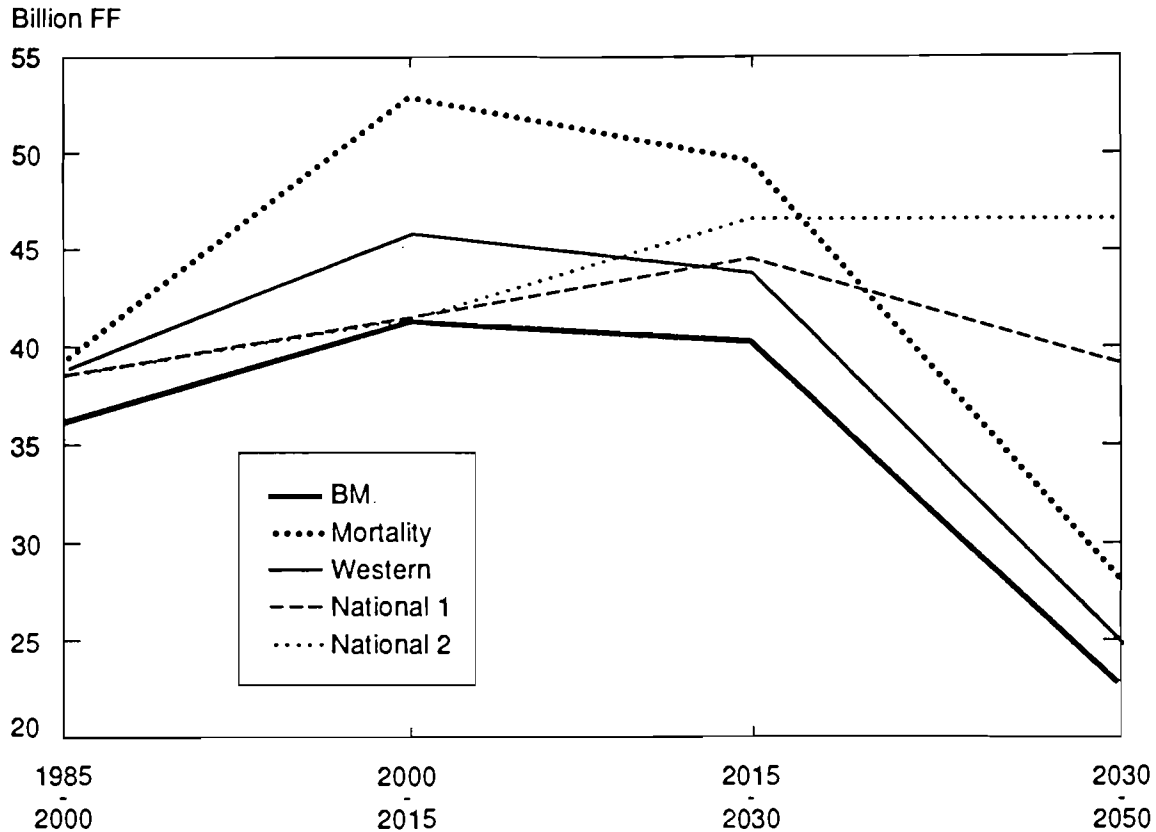
Figure 7. Changes in total old age benefits (billion French Francs)

The mortality scenario shows a much steeper increase than the BM. Pensions expenditures for both sexes are around 17% higher than in the BM in 2015 and 24% in 2030. Note here that male life expenctancy is too high (for France) and that increasing life expectancy should be projected after 2015.

The Western scenario is between the BM and the Mortality scenarios, but rather closer to the former.

The progressive postponement of age at retirement (starting in 2010) to 65 years in the national scenarios reduces -in comparison with the Mortality scenario- the effect of increasing life expectancy on pensions expenditures, mainly in 2015 and 2030 (national 1 scenario) The difference is about 20 percentage points in 2015 (index 143 against 162) and 26 points in 2030. The average annual growth rate of the pensions expenditures from 1985 to 2015 is 1.2 % in the National 1 scenario while the mortality scenario implied a rapid growth rate (2.0%) from 2000 to 2015. From 2015 to 2030 the growth rate of the pensions expenditures is 1.2% in the National 1 scenario against 1.4% in the mortality scenario. The increase in the pensions expenditures after 2030 in the National scenarios are due to the increase in life expentancy until 2050. The postponement of age at retirement no longer has an effect on the increase of the numbers of retirees nor on the pensions expenditures after 2030. Due to the size reached by the total pension expenditures in 2030, the growth rate decelerates afterwards, but 60 billion FF are still added from 2030 to 2050 to the pensions expenditures in the National 1 scenario and 100 billion in the National 2 scenario. In 2050 pensions expenditures are nearly twice as high as in 1985 in the National 1 scenario, about as high as in the mortality scenario. In the National 2 scenario evolution is the same as in the National 1 until 2015, then retired immigrants increase quicker the pensions expenditures.

2.4. Contributions

Contributions show a much slower evolution than the pensions expenditures (table 12, 12bis and 13). A slight increase (6 %) from 1985 to 2000 and then stabilization until 2015 will occur. In 2030 the level is the same as in 1985 and 2050 is 6 % lower (7 % for males, 5 % for females).

The fertility and mortality scenarios are not very different from the BM until 2015, the increase being 1 or 3 percentage point higher. These two scenarios show a decrease in the contributions between 2015 and 2030 but the level in 2030 is still 4 % higher than in 1985. The situation stabilises in the fertility scenario, but a further decrease appears in the mortality scenario and contributions in 2050 are 2 % under their level in 1985. We can now say that the fertility scenario is the only one which stabilises the contributions.

The Western scenario is close to the fertility and the mortality scenarios until 2015, then when smaller generations enter the labor force, contributions decrease steadily, being in 2030, 6 % below their 1985 level, (30 % in 2050).

The National 1 scenario increases contributions in 2015 twice as much as does the mortality scenario; contributions in 2015 are 19 % higher than in 1985. This is due to the postponement of retirement age to 65 years and to higher labor force participation rates for women. Low fertility causes a decrease in the contributions after 2015, the index in 2030 (113) is 6 points below the index in 2015; the index in 2050 is 103. Therefore contributions are still a little bit higher than in 1985.

Immigration in the National 2 scenario increases the contributions faster than does the national 1 scenario. They are 18 % over the 1985 level as early as 2000 and 29 % higher in 2015. Contributions are stable from 2015 to 2030 for both sexes (a slight progress for males and a slight decrease for females). Then they decrease slower than in the National 1 scenario.

The 1st variant of the BM (BM65)[1] is close to the national 1 scenario until 2015 for both sexes. Then contributions decrease just as in the BM. To delay retirement age appears not to be a long-term solution.

The second variant (BM GDR)[2] is different mainly for women. In 2000 and 2015 contributions of women are 47 % above their level in 1985, but they then decrease even faster than in the BM.

Contributions of both sexes are around 10 percentage points higher in this variant than in the first one. This variant is equal to the National 2 scenario in 2015 and then about 10 percentage points below.

1Retirement age is 65 years from 1985.
2Female labor force participation rates are those of GDR, the highest observed in Europe.

Table 12. Size of the labor force, 1985-2050

Scenario		1985	2000	2015	2030	2050
			Absolute (1000s)			
Benchmark	males	14 771	15 708	15 604	14 765	13 796
	females	9 748	10 495	10 526	9 935	9 252
	total	24 518	26 203	26 130	24 700	23 049
Fertility	males		15 708	15 694	15 313	15 318
	females		10 495	10 580	10 322	10 279
	total		26 203	26 274	25 635	25 597
Western	males		15 761	15 542	13 453	10 018
	females		10 589	10 841	9 582	7 281
	total		26 350	26 383	23 035	17 299
Mortality	males		15 816	16 022	15 341	14 468
	females		10 517	10 620	10 070	9 424
	total		26 333	26 642	25 411	23 892
National 1	males		16 160	16 853	16 144	14 818
	females		11 818	12 349	11 641	10 540
	total		27 978	29 202	27 785	25 358
National 2	males		16 832	18 356	18 477	18 034
	females		12 250	13 297	13 142	12 661
	total		29 083	31 653	31 619	30 695
			Index			
Benchmark	males	100	106	106	100	93
	females	100	108	108	102	95
	total	100	107	107	101	94
Fertility	males		106	106	104	104
	females		108	109	106	105
	total		107	107	105	104
Western	males		107	105	91	68
	females		109	111	98	75
	total		107	108	94	71
Mortality	males		107	108	104	98
	females		108	109	103	97
	total		107	109	104	97
National 1	males		109	114	109	100
	females		121	127	119	108
	total		114	119	113	103
National 2	males		114	124	125	122
	females		126	136	135	130
	total		119	129	129	125

Table 12 bis. Contributions

Scenario		1985	2000	2015	2030	2050
		Absolute (millions F.F.)				
Benchmark	females	88 479	95 264	95 542	90 183	83 983
	males	162 186	172 475	171 339	162 123	151 487
	total	250 665	267 739	266 881	252 306	235 470
Fertility	females		95 264	96 034	93 695	93 302
	males		172 475	172 325	168 136	168 197
	total		267 739	268 359	261 831	261 499
Western	females		96 116	98 401	86 979	66 088
	males		173 056	170 658	147 714	110 004
	total		269 172	269 059	234 693	176 092
Mortality	females		95 464	96 394	91 407	85 539
	males		173 661	175 929	168 447	158 862
	total		269 125	272 323	259 854	244 401
National 1	females		107 272	112 089	105 666	95 672
	males		177 437	185 047	177 269	162 708
	total		284 709	297 137	282 935	258 379
National 2	females		111 194	120 696	119 290	114 925
	males		184 824	201 547	202 884	198 017
	total		296 018	322 244	322 173	312 942
		Index				
Benchmark	females	100	108	108	102	95
	males	100	106	106	100	93
	total	100	107	106	101	94
Fertility	females		108	109	106	105
	males		106	106	104	104
	total		107	107	104	104
Western	females		109	111	98	75
	males		107	105	91	68
	total		107	107	94	70
Mortality	females		108	109	103	97
	males		107	108	104	98
	total		107	109	104	98
National 1	females		121	127	119	108
	males		109	114	109	100
	total		114	119	113	103
National 2	females		126	136	135	130
	males		114	124	125	122
	total		118	129	129	125

Table 13. Overall activity rate , 1985-2050

Scenario	1985	2000	2015	2030	2050
			Males		
Benchmark	70.7	70.4	67.8	65.3	65.2
Fertility		70.4	67.7	65.7	66.6
Mortality		69.6	64.5	60.4	59.1
Western		70.0	66.7	62.2	57.3
National 1		71.8	70.7	67.0	63.9
National 2		72.4	71.9	68.7	65.6
			Females		
Benchmark	43.2	43.7	42.4	40.2	39.9
Fertility		43.7	42.3	40.6	41.1
Mortality		43.4	41.1	38.4	37.6
Western		44.0	43.7	41.0	37.8
National 1		48.8	48.2	44.7	42.0
National 2		49.4	49.2	46.2	43.7

2.5. The Ratio Contributions/Benefits

As a result of the huge increase in the pensions expenditures and of the slow increase in the contributions, the ratio of the latter to the former, i.e. the balance of the pensions fund is deteriorating more or less rapidly according to the different scenarios.

The rather slow increase in the expenditures and the slow increase of the contributions from 1985 to 2000 fairly limit the deterioration of the balance in the near future (table 14, fig.8). Nevertheless from a hypothetical balanced situation in 1985, a deficit of 7 % appears in the year 2000 in the BM. In 2015, the deficit is 23 % and 37 % in 2030 and 2050. In comparison with the BM, the fertility scenario causes a lesser deterioration after 2015, with a 35 % deficit in 2030 and only 31 % in 2050.

Table 14. Ratio contribution/benefits

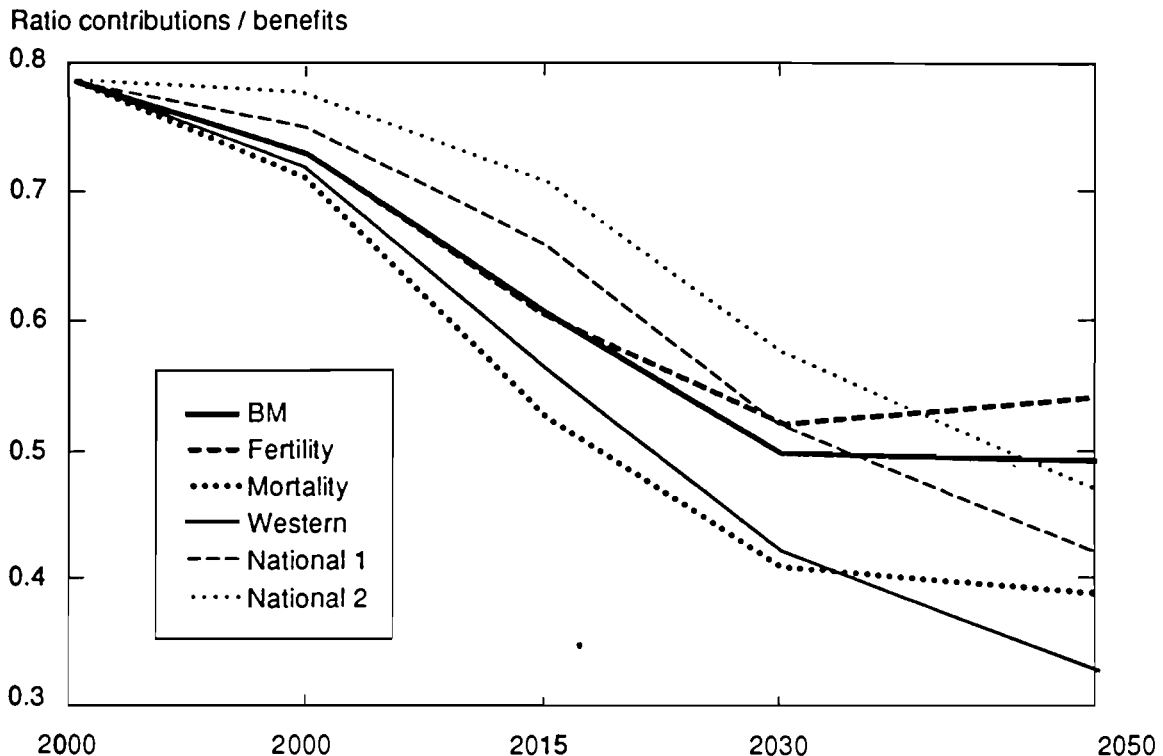| Scenario	1985	2000	2015	2030	2050
Benchmark	0.79	0.73	0.61	0.50	0.49
Fertility		0.73	0.61	0.52	0.54
Mortality		0.71	0.53	0.41	0.39
Western		0.72	0.57	0.42	0.33
National 1		0.75	0.66	0.52	0.42
National 2		0.78	0.71	0.58	0.47

Ratio contributions / benefits

Figure 8. Ratio contribution/benefits

The mortality and the Western scenarios cause quicker deterioration of the balance: 11 % or 9 % deficit in 2000, 33 % and 28 % as soon as 2015. Contributions would cover only a little bit more than half of the expenditures in 2030 and 2050 (except for the Western scenario with only 42 % in 2050).

The National 1 scenario causes slower deterioration of the pensions fund until 2015 than the four basic scenarios do and keeps an advantage on the mortality scenario until the end of the projection period. Nevertheless deficit is rapidly increasing from 2000 to 2030. The National 2 scenario stabilizes the balance until 2000, then the deterioration is slower than in the Natioanl 1 scenario until 2015. Afterwards the pace of deterioration is about the same in both national scenarios, but deficit in 2050 is only 40% in the National 2 scenario against 47% in the National 1.

3. POPULATION POLICIES OF AGING

3.1. Cutting benefits versus increasing contributions

The probable increase in life expectancy in the coming decades appears very difficult to compensate for the pensions system. Huge cuts in the pensions benefits or important increases of the contribution rate will be necessary to balance the financial situation of the pensions system.

A slight increase in the contribution rate by a little over 1 percentage point in the BM or Fertility scenarios, 2 points in the Mortality would be enough to balance the pensions fund until 2000 (table 15). The National 1 scenario limits increase in the contribution rate to 0.8 percentage point, while the National 2 scenario stabilizes the rate. - Increasing female labor force participation rates (BM GDR) and a sudden change in age at retirement (BM 65) would render a lower contribution rate possible.- Cuts in benefits would be limited to 7% (BM or fertility), 11% (mortality), or 5% or only 1% in the national 1 and 2 scenarios.

Table 15. Cuts in benefits and contribution rate corresponding to a balanced pension fund, 1985-2030

Scenario	1985	2000	2015	2030	2050
Cuts in Benefits $^{a)}$ (percentage)					
Benchmark		- 7	- 23	- 37	- 38
Fertility		- 7	- 23	- 35	- 31
Mortality		- 11	- 33	- 48	- 51
Western		- 9	- 28	- 46	- 58
National 1		- 5	- 16	- 34	- 47
National 2		- 1	- 10	- 27	- 41
BM (65)		+ 22	+ 6	- 17	- 19
BM (GDR)		+ 5	- 12	- 27	- 28
Balanced Contribution Rate $^{b)}$					
Benchmark	16.5	17.8	21.3	26.0	26.6
Fertility		17.8	21.3	25.0	24.1
Mortality		18.4	24.6	31.7	33.3
Western		18.1	22.8	31.0	39.6
National 1		17.3	19.7	25.0	31.0
National 2		16.7	18.3	22.4	27.7
BM (65)		13.6	15.5	19.8	20.4
BM (GDR)		15.7	18.6	22.5	22.9

a) As compared with 1985.
b) Actual rate 13 %.

In 2015, the contribution rate should be increased by 5 percentage points (BM or fertility) or 8 points (mortality) and 3.2 points in the National 1 scenario; while the national 2 scenario enables an increase nearly half that (1.8 point). In 2030, another 5 percentage points should be added to the contribution rate in the BM - 4 points in the fertility scenario. In the mortality scenario the contribution rate should reach 31.7% (twice the rate in 1985); a 25% or 22 % rate would be enough in the national scenarios but 31 % should be reached in 2050 in the national 1 scenario (28 % in the national 2).

In 2015, cuts in benefits would range from 23% (BM and fertility) to 33% (mortality). The national 1 scenario limits the cuts to 16% and the national 2 scenario to 10%. In 2030 cuts reach 37 % (BM) or almost half the benefits (mortality). As regarding the cuts in benefits, the National 1 scenario (with 34% cuts in 2030 and 47% in 2050) reaches the level of the mortality scenario 15 years earlier. The national 2 scenario will have a greater advantage, with 27% cuts in 2030 and 41% in 2050.

Cuts in the benefits and increases in the contribution rate become too high as early as 2015 in the four basic scenarios, or from 2030 in the national scenarios, to enable only one of these parameters to support the cost of ageing. An equilibrium should be found between the efforts solicited from the retirees and from the working population.

3.2. Impact of policy measures

The "GDR" scenario leads to an important increase in the number of females retirees - due to higher LFPR - in 2000 (52% compared with the BM) but in the long term the difference is much smaller : 15% in 2030 and 2050. Differences are very small (below 4%) for males (table 16).

Table 16. Increasing participation in the labor force and age at retirement. Impact on the number of retirees, 1985-2050 - benchmark scenario

Scenario		1985	2000	2015	2030	2050
		Number of Retirees (1000s)				
Benchmark	males	3842	4440	5134	5747	5401
	females	3006	3596	4910	6423	6126
	total	6848	8036	10044	12170	11527
		Absolute Changes (1000s)				
"GDR"	males		+ 64	+ 117	+ 229	+ 179
	females		+ 1886	+ 1398	+ 968	+ 894
	total		+ 1950	+ 1515	+ 1197	+ 1073
"65"	males		- 1028	- 1334	- 1291	- 1237
	female		- 589	- 1055	- 1167	- 1037
	total		- 1617	- 2389	- 2458	- 2274
		Relative Changes (%)				
"GDR"	males		+ 1.4	+ 2.3	+ 4.0	+ 3.3
	females		+ 52.4	+ 28.5	+ 15.1	+ 14.6
	total		+ 24.3	+ 15.1	+ 9.8	+ 9.3
"65"	males		- 23.2	- 26.0	- 22.5	- 22.9
	female		- 16.4	- 21.5	- 18.2	- 16.9
	total		- 20.1	- 23.8	- 20.2	- 19.7

The "65" scenario drops the number of retirees of both sexes by around 20% (23% for males and 17% for females) from 2000 to 2050. The higher activity level of the "GDR" scenario and the older age at retirement of the "65" scenario increases the average number of years worked (table 17). The increase is 5 years for males under both scenarios and, for females, 9 years under the "GDR" and 2 years under the "65".

Table 17. Increasing participation in the labor force and age at retirement. Impact on the average number of years worked, 1985-2050 - benchmark scenario

Scenario		1985	2000	2015	2030	2050
Benchmark	males	40.6	40.6	40.6	40.6	40.6
	females	28.4	28.6	28.8	28.9	28.9
"GDR"	males		45.9	45.9	45.9	45.9
	females		37.6	37.6	37.6	37.6
"65"	males		45.7	45.7	45.7	45.7
	females		30.6	30.8	30.9	30.9

Table 18 shows that the influence of the "GDR" scenario on total benefits is almost nil for males but reaches 11.7% for females in 2000 or 7.5% in the long term. The "65" scenario reduces total benefits by almost a quarter for males and from 22% in 2000 to 15% in 2050 for females.

Table 18. Increasing participation In the labor force and age at retirement. Impact on total benefits, 1985-2050 - benchmark scenario

Scenario		1985	2000	2015	2030	2050
			Total Benefits (millions of F.F.)			
Benchmark	males	163715	190436	223797	250499	235419
	females	153664	174938	215716	257939	246081
	total	317379	365374	439513	508438	481500
			Absolute Changes			
"GDR"	males		- 214	- 330	- 819	+ 975
	females		+ 20533	+ 20909	+ 19295	+ 18514
	total		+ 20319	+ 20579	+ 18476	+ 19489
"65"	males		- 43894	- 59989	- 58936	- 56226
	females		- 42311	- 49530	- 45396	- 38165
	total		- 86205	- 109519	- 104332	- 94391
			Relative Changes (%)			
"GDR"	males		- 0.1	- 0.1	- 0.3	+ 0.4
	females		+ 11.7	+ 9.7	+ 7.5	+ 7.5
	total		+ 5.6	+ 4.7	+ 3.6	+ 4.0
"65"	males		- 23.1	- 27.0	- 23.6	- 23.8
	females		- 21.6	- 20.9	- 16.4	- 14.4
	total		- 22.4	- 23.8	- 19.8	- 18.8

The impact of the "GDR" scenario on the ratio contributions/benefits (table 19) is a 10 percentage points bonus in 2000 and 2015 and 8 points from 2030. The "65" scenario brings about a strong improvement in the ratio contributions/benefits. In 2000, the situation of the pension fund (almost balanced with 0.96) would be better than in 1985 and also in 2015 (0.84). Then an important drop appears with around 35% deficit in 2030 and 2050. This corresponds to a 18% cut in benefits.

Table 19. Increasing participation In the labor force and age at retirement. Impact on the ratio contribution/benefits, 1985-2050

Scenario	1985	2000	2015	2030	2050
Benchmark	0.79	0.73	0.61	0.50	0.49
"GDR"		0.83	0.70	0.58	0.57
"65"		0.96	0.84	0.66	0.64

Retirement age of 65 in the 1st variant of the BM brings substantial benefits (or reduction of the contribution rate) in 2000 (22%) and still in 2015 (6%) (table 15). After 2015 the effect of this measure is not sufficient, though in 2030 the 1st variant reduces the cuts by half (in comparison with the BM or fertility).

The advantage of increased female labor force participation (BM GDR) is much below that of the 1st variant.

CONCLUSION

For France, the most interesting among the four basic scenarios is the Mortality scenario as it takes into account increasing life expectancy, but male mortality of this scenario is too low for France. Due to the very low fertility hypothesis of the Western scenario, this scenario is not very probable for France where fertility seems to stabilize around 1.80. The fertility scenario shows a very important issue : an increase in fertility has no effect on the pensions system until 2030, when larger generations will enter the labor force.

The National 1 scenario shows that retirement age of 65 years is not necessary now (and may not be possible at the moment, due to unemployment) when additionnal costs of ageing can be still supported by contributors. But it would become necessary after 2010~2015 in order to reduce the rapid growth of pensions expenditures in 2000-2030, which an increase in fertility would not have substantially reduce. The National 2 scenario shows that immigration reduces the deficit of the pensions system, due to increasing labor force, until 2015; but from 2030 it increases the pensions expenditures and no longer has a positive effect on the balance of the system which, from 2015, will deteriorate at the same pace in both national scenarios ; immigrant cohorts should be always increasing.

2050 is a very far perspective. Decreases in mortality rates will still be possible and the balance of the pensions system could still deteriorate, as seen in the national scenarios (compared with the BM or Mortality scenarios), but at a slower pace than in 2000-2015. Increasing immigration and the benefits of an increased fertility some 30 or 40 years ealier could offer solutions at that time. On another hand, better economic situation would help very much to balance the pensions system.

Longer active periods for males and females as well as immigration will cause important increases in the pensions expenditures in the future and are not the long term solutions of the pensions problem. Higher expectations of life at older ages will be very difficult to compensate for in populations where fertility is below replacement level.

Actually the pension problem is two-sided. Until 2030, pension funds will face retirement of the baby-boom cohorts ; postponement of retirement age and immigration - in the frame of a favorable labor market - would help to balance the pension funds. After 2030 negative population growth and decreasing labor force affect the pension system. Increased fertility or increasing immigration would maintain the size of the labor force.

As the demographic solutions for the next 30 or 40 years : postponing retirement age and immigration are dependant on the situation of the labor market, economic solutions such as indexing pensions on net (instead of gross) income and constituting reserves, should be implemented (Verniere, 1990).

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