The Effects of Changing Marital Status Patterns on Social Security Expenditures in the Netherlands, 1985-2050

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PREFACE

The Netherlands 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:

CP-91-002   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

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. Five 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 all marriages ending in divorce, and male and female life expectancies of 74 and 81 years, respectively; and a Realistic scenario, which is the only one to include international migration, and which corresponds closely to the official population forecasts for the Netherlands.

Two pension scenarios and two labor market scenarios were combined with the demographic scenarios. The current pension system, with its flat benefit rate, was combined with all five demographic scenarios. Also, the consequences of the system which was in use in the Federal Republic of Germany in 1985 were traced. Finally, 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 (e.g. a fertility rise, or a persistent influx of immigrants) cannot prevent increases in and funding problems for pension expenditures in the Netherlands. Linking pension benefits to the labor market history of the individuals concerned brings no relief either. However, raising the average age at retirement would, to a large extent, avoid funding problems for old-age pensions for a great deal, with a large amount of overfunding in the short run.

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1. Demographic Trends in the Netherlands Since 1950: A Short Review

As in most other Western countries, tremendous demographic changes took place in the Netherlands after the Second World War. These changes were brought about by altered socioeconomic and sociocultural conditions, and at the same time they had an impact on the socioeconomic and the sociocultural structure of the population in the Netherlands. Between the 1950s and the 1980s, fertility levels dropped strongly, and life expectancies witnessed a temporary reversal (in particular for adult males) of an otherwise continuous increase. The Netherlands turned from an emigration country, with a surplus of labor force in the 1950s, into a country with labor immigration from Mediterranean countries at the end of the 1960s, and large flows of immigrants from former Dutch colonies (Indonesia, Surinam) at irregular points in time (1950, 1958, 1962, 1975, 1980). Furthermore, marriage was increasingly delayed, while consensual unions became more and more accepted as a preparation for, and sometimes even as an alternative to, marriage. Hence growing proportions of young adults remained unmarried. The numbers of divorces rose strongly, in particular after a change in legislation in 1971. These general trends have been documented by several authors (e.g. De Beer, 1989), and they agree remarkably well with the overall demographic trends in the Western world (Van de Kaa, 1987).

The character of family formation changed drastically in the 1960s and 1970s. The traditional family, which resulted from early marriage and a short first birth interval, was gradually replaced by a different type of family, of which the parents had first lived in consensual union before the formal marriage took place, in which fewer children were born, and which experienced higher dissolution risks due to divorce than due to widowhood. The traditional ("bourgeois") family lost more and more of its importance, and a new type of family, in which self-realization and individual values were more prominent, came into being. Emancipation, education and labor force participation of women played a key-role in the downward trend in fertility.

To illustrate *fertility* trends, Figure 1[1] shows how the Total Fertility Rate fell from a high level of between 3 and 3.2 in the 1950s, to a historically low of around 1.5 in the 1980s.[2] This figure illustrates also that until the mid-1970s, marital fertility was lower than total fertility. As marriage and childbearing were nearly universal, extramarital fertility was mostly unintended, and it just came on top of marital fertility. However, the situation changed in the 1970s, when fewer persons married (the Period Total First Marriage Rate dropped from 95 percent for the years 1950-1970, to some 75 percent for the second half of the 1980s). Couples who wanted a child generally married, while those who wished to stay childless (proportions are estimated to be 15 percent for the females born in 1950, and 20 percent for the 1960 cohort) remained unmarried. Thus, marriage acted as a filter to distinguish between couples with and without children, and this explains why marital fertility is higher than overall fertility. Yet, as Figure 2 demonstrates, childbearing outside wedlock gained considerable momentum around 1975. The character of extramarital fertility changed in the 1960s from largely unintended to planned behavior. Initial rises which took place in the 1960s may be due to a combination of two factors: society became more liberal towards sexual activity outside marriage, but at the same time non-married couples had limited access to contraception and abortion. The latter factor disappeared around 1970, and a few years later an extramarital child was no longer a taboo. The percentage of extramarital births has risen to over 10 percent; for first births the percentage born outside wedlock is even 15. Yet these figures are very low compared to those found in Sweden and Denmark. Furthermore, it should be noted that about one-third of the unmarried mothers in the Netherlands nowadays marry within a few years after the birth of their child.

Some trends in *marriage and marriage dissolution* can be observed from Table 1. Marriage was popular in the Netherlands until 1970. Between 1950 and 1970, a stable proportion of around 95 percent of males and females married at some age, and the increase in the numbers of marriages was due to two factors: the growth of the young population, and the fall in the mean age at marriage. But towards the end of the 1960s, attitudes with respect to formal marriage started to change, and the number of marriages dropped by more than one-third between 1970 and 1983. Many young adults postponed marriage, as can be seen from the rising age at first marriage. Moreover, the (period) percentage ever-marrying fell to less than 80 percent. Much of the changes are due to cohabitation before marriage, as is demonstrated by Table 2.

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[1]Figures applying to years up to 1985, unless indicated otherwise, were taken from various sources published by the Netherlands Central Bureau of Statistics, in particular several issues of the *Monthly Bulletin of Population Statistics*, and the publication *1899-1989: Negentig Jaren Statistiek in Tijdreeksen*.

[2]The line for marital live births in Figure 1 was calculated on the basis of the sum of marriage duration-specific birth rates (relative to the size of the marriage cohort) for durations 0, 1, 2, ..., 20+, rearranged by calendar year.
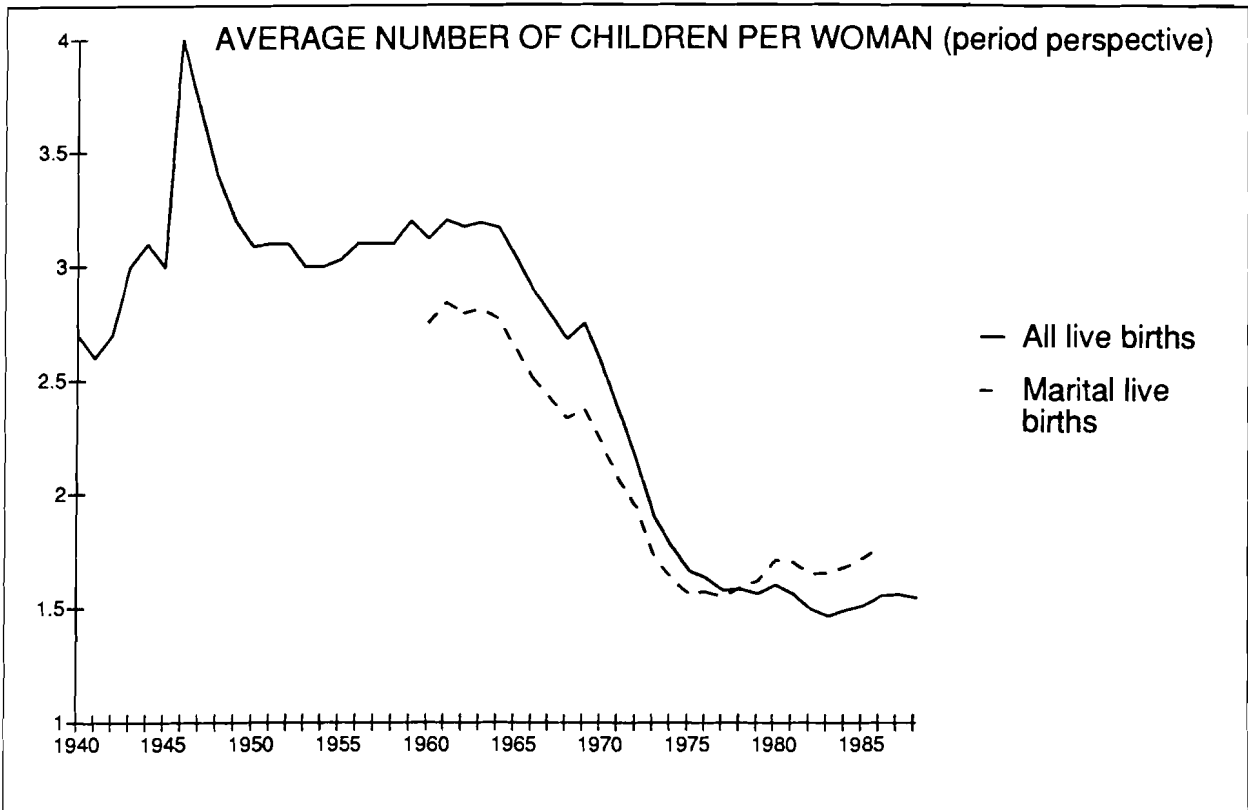
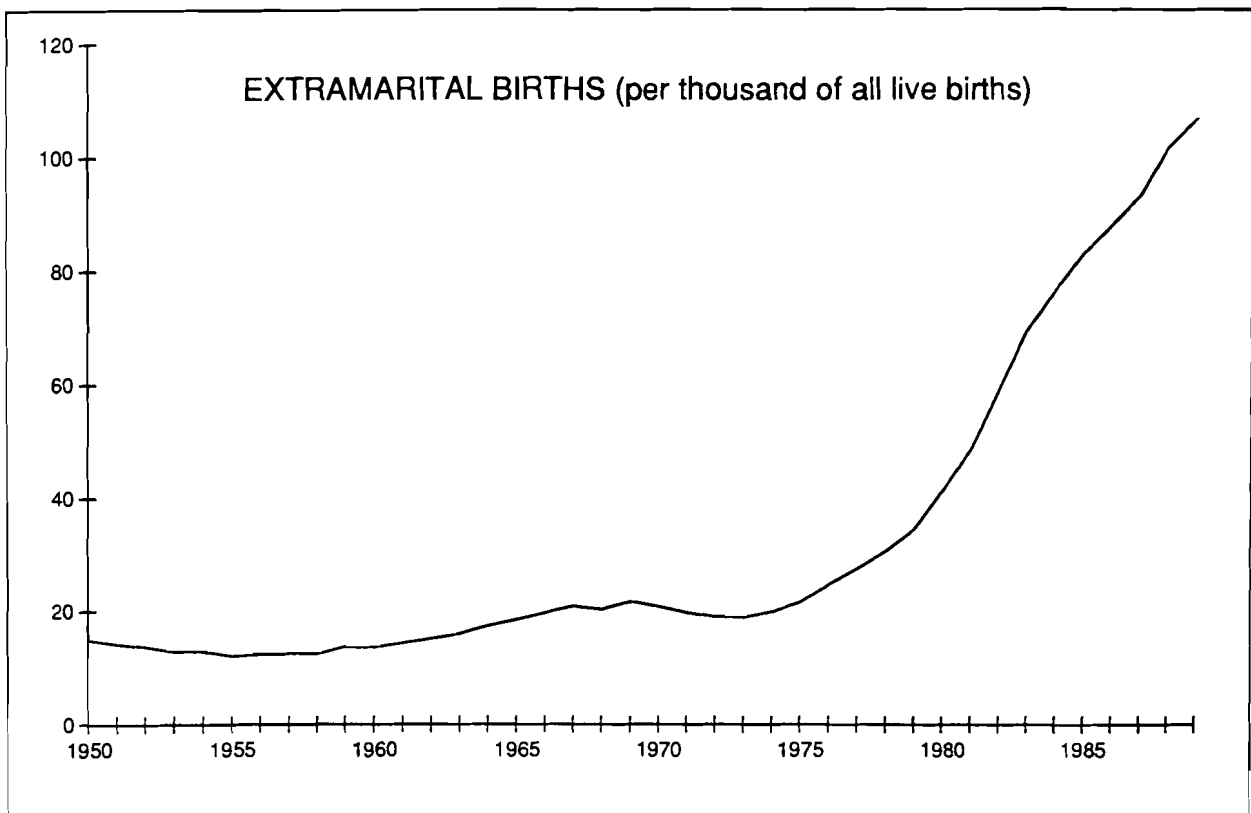Figure 1. Average number of children per woman (period perspective).

Figure 2. Extramarital births per thousand live births.

Table 1. Marriage and marriage dissolution, 1950-1989.

	1950	1960	1970	1980	1985	1989
Crude marriage rate	8.3	7.6	9.3	6.4	5.7	6.1
Mean age at first marriage						
Males	28.1	26.8	24.8	25.5	26.3	28.3
Females	25.7	24.5	22.9	23.2	24.0	26.0
Number of divorces per 1000 married women	3.0	2.2	3.3	7.5	9.9	8.2

Table 2. Percentage of women living in a union, by age.

	Formally married			Cohabiting or married		
	21-24	25-29	30-37	21-24	25-29	30-37
1982	37	72	82	54	83	86
1985	27	64	80	43	77	86

Consensual unions are largely considered as a trial marriage in the Netherlands. The 1988 Fertility Survey revealed that of all women aged 25-29 who married in the mid-1980s, no less than 80 percent lived in a consensual union before the marriage took place. When the woman becomes pregnant, or when the couple plans to have a child, the union is often legalized. Two-thirds of the unmarried young persons who were interviewed in the 1984 life-style survey in the Netherlands stated that the (planned) birth of a child would be a reason for them to marry.

Divorce showed a steady rise after 1965, and an acceleration took place when legislation was changed in 1971 (see Figure 3). But suddenly, in 1985, the trend came to an end, and divorce in the period 1986-1989 was 10-15 percent lower than in 1985. If age-specific divorce rates as observed in 1989 would remain the same for the next 60 years, some 23 percent of the married women would ever face a divorce. On the basis of the 1985 divorce rates the proportion would be 27 percent. Diminishing numbers of married couples at divorce-prone ages are only a partial explanation of this sudden trend reversal. Marriages which took place after previous cohabitation may be assumed to be more stable than marriages in the 1970s, but empirical evidence shows that divorce rates also went down for those couples who did not cohabit. Thus the recent drop in divorce in the Netherlands is an unresolved issue.
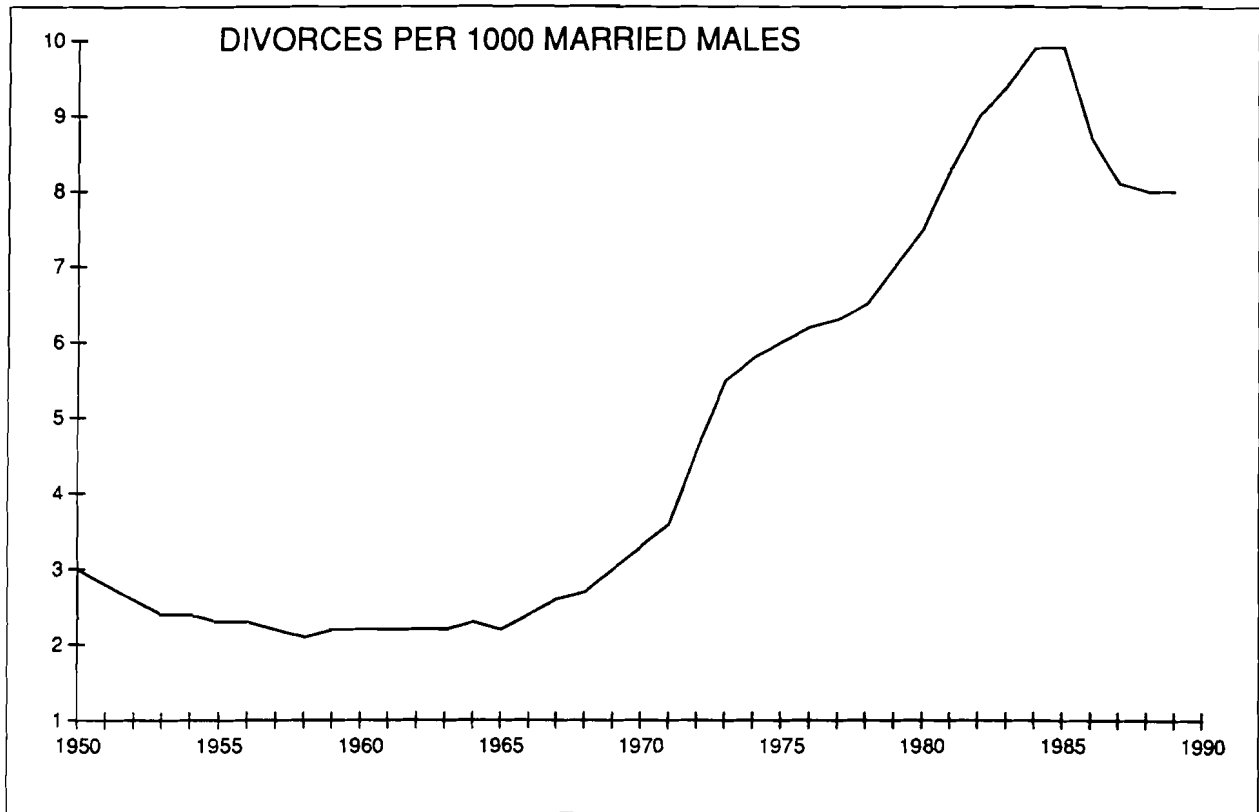
Figure 3. Divorces.

Mortality trends are characterized by a steady increase in life chances for females, and a temporary rise in mortality rates for males at adult ages in the 1960s (Table 3). The diverging trends for females and males caused a larger gap between the sexes in the life expectancy at birth: from 2.3 years in 1950 to 6.8 years in 1980. After 1980, death rates for males at medium ages decreased more strongly than those of females, and this resulted in a slight reduction of the gap between the sexes. Another consequence was that the female life expectancy at birth follows a cyclical pattern around an upward slope: the increase was strong in the 1950s (2.4 years) and 1970s (2.7 years), and much weaker in the 1960s (1.2 years) and 1980s (approximately 0.8 years). Lung cancer became a more prominent death cause for females in the 1980s, although death rates specific to this particular cause are still considerably lower than for males.

Table 3. Mortality, 1950-1989.

	1950	1960	1970	1980	1985	1989
				Males		
Life expectancy (years)						
at birth	70.6	71.5	70.7	72.5	73.1	73.7
at age 60	17.8	17.7	17.1	17.4	17.6	17.9
Survivors (per 100 born)						
at age 80	33.6	34.9	32.0	33.4	34.2	36.4
				Females		
Life expectancy (years)						
at birth	72.9	75.3	76.5	79.2	79.7	80.0
at age 60	18.6	19.5	20.5	22.5	22.8	23.0
Survivors (per 100 born)						
at age 80	37.9	44.0	49.2	58.1	59.8	60.9

2. The Future Population Structure: Five Demographic Scenarios

In order to trace the consequences for social security of future population trends in the Netherlands, five demographic scenarios were set up for the period 1985-2050. The first four scenarios are common to all countries participating in the project. In summary:

1. The *Benchmark scenario*, with age-specific rates for fertility, mortality, marriage and marriage dissolution constant at the levels observed during 1980-1984 in the Netherlands.
2. The *Fertility scenario* in which it is assumed that fertility in the Netherlands will gradually increase from its 1980-1984 level of 1.51 children per woman to replacement level (TFR = 2.1) in the period 2000-2004.
3. The *Mortality scenario*, with a gradual decrease by 30 percent of female mortality rates, and one by 45 percent of the rates for males. It is equivalent to an increase of 8 years in the life expectancy of males, and about 5.3 years for females. Thus the existing seven-year gap between male and female life expectancy would be reduced to approximately 4.7 years.
4. The *Western low scenario*, which combines the most extreme demographic conditions presently observed in Western Europe: a TFR of 1.28 (cf. the FRG), proportions never-marrying of one-third (cf. Sweden), one-third of all marriages ending in divorce (Sweden), and life expectancies of 74 and 81 years for men and women, respectively (Switzerland).

All changes gradually take place over the period between 1985 and 2005. International migration is ignored in these four scenarios.

Not all scenarios are equally plausible for the Netherlands. In fact, all are, to a certain extent, rather extreme. International migration is excluded altogether. As to the

Benchmark scenario, we can be certain that demographic conditions will *not* be constant during the years until 2050. An increase in fertility rates to replacement level as assumed in the Fertility scenario is very unlikely, at least for the next few decades. Completed cohort fertility has decreased continuously over the past twenty years. It was around 2.7 for women born in 1930, and it is estimated to be 1.8 for the cohorts born around 1960. This is still higher than the level which is expected by the Netherlands Central Bureau of Statistics (NCBS) for the women born in 1985 or later (1.65 in the medium variant). Taking uncertainty variants into account, the NCBS expects the TFR to be between 1.45 and 1.85 (low variant and high variant) from the year 2000 onwards. As to the Mortality scenario, the increases in life expectancy which are assumed here are not improbable, but they will certainly take place over a much longer period than the twenty years which is taken in this scenario. As with the Western scenario, the other three scenarios represent, each in their own respect, the extremes of a trajectory that the population structure in the Netherlands is likely to follow in the future. How far the actual trends will be lying from these extremes is difficult to say. The scenarios represent possible futures of which the likelihood may be assumed to be smaller than that of the fifth scenario.

5. The *Realistic scenario*, which corresponds closely to the medium variant of the official national population forecast of the Netherlands as compiled by the Netherlands Central Bureau of Statistics (NCBS) in 1989 (see Cruijsen, 1990). The Realistic scenario excludes extreme trends, as demographic developments are extrapolated smoothly into the future. It involves slight increases in fertility (from 1.51 for the TFR in 1985 to 1.65 in the year 2010); an improvement in mortality (for males, the life expectancy at birth rises from 73.1 in 1985 to 75.0 in 2010, and for females from 80.5 to 81.6 between those years); rising divorce (30 percent of the marriages ending in divorce by 2010); and small decreases in marriage propensities (64 percent of the males and 70 percent of the females remain unmarried in 2010). The population gain due to international migration decreases somewhat from the 1985 level of 25,000 immigrants (net-immigration!) to a level of 20,000 in 1995. Demographic indicators are kept constant at the level they were given in the last year of the transition period.

Table 4 shows that aging is certain in the Netherlands: in all five scenarios we notice an increase in the proportion of the population aged 60 and over in conjunction with a drop in total population size. This phenomenon is already present before the year 2015 in the Western scenario with its low fertility and zero migration, and appears 15 years later in the Fertility and the Realistic scenarios. When the five scenarios are mutually compared, the Fertility scenario produces the most extreme effects in many respects: for all years shown in the table, proportions aged 60+ are smallest and proportions below 15 are highest. High fertility rates bring about larger population sizes than low mortality rates. However, compared with the Realistic scenario, the population grows at a rather slow pace in the Fertility scenario during the first few decades. In the short run, immigration has more impact on total population size than increased fertility levels. But in the long run the situation reverses, when the transition period for rising fertility levels comes to an end.

Table 4. Population by broad age-groups, the Netherlands, 1950-2050.

| | Percentage in age-groups | | | Total |
	0-14	15-59	60+	(in 1000)
1950	29.2	59.4	11.4	10,027
1960	30.0	57.0	13.1	11,417
1970	27.4	58.8	13.8	12,958
1980	22.6	62.1	15.3	14,091
1985	19.5	63.8	16.8	14,491

Benchmark scenario

2000	17.3	63.7	19.0	15,098
2015	14.0	60.5	25.5	14,694
2030	13.4	53.6	33.0	13,537
2050	12.7	53.7	33.6	11,027

Fertility scenario

2000	18.6	62.6	18.7	15,348
2015	17.9	58.2	23.9	15,688
2030	18.4	53.0	28.7	15,567
2050	18.9	56.2	24.9	14,858

Mortality scenario

2000	17.1	63.2	19.7	15,256
2015	13.4	58.2	28.4	15,403
2030	12.5	50.1	37.4	14,670
2050	11.4	48.7	39.9	12,378

Western scenario

2000	16.7	64.0	19.3	15,024
2015	12.3	61.1	26.5	14,407
2030	11.4	53.3	35.3	12,949
2050	10.1	51.4	38.5	9,941

Realistic scenario

2000	17.8	63.4	18.7	15,530
2015	15.3	60.1	24.7	15,839
2030	15.1	53.9	31.0	15,504
2050	14.8	54.8	30.4	14,056

The strongest growth in the proportion 60 and over occurs in the Mortality scenario: around the year 2050, four out of every ten inhabitants of the Netherlands will be at least 60 years of age. Around 1985 this was the case for only every sixth person. The Fertility scenario and the Realistic scenario show a *decrease* in the proportion 60+ between 2030 and 2050. At the same time, absolute numbers in these age groups go down in *all* scenarios as a consequence of the small birth generations born after 1964.

Table 5 shows future dependency ratios for the Netherlands according to the five scenarios. Concentrating on ratios for the elderly, we note an upward trend in all scenarios, but also a strong divergence of the levels. For instance, in the Mortality scenario the old-age dependency ratio (OADR) increases more than three-fold in 65 years, whereas it "only" doubles in the Fertility scenario. The growth of the OADR is particularly strong between 2015 and 2030, when the large post-World War II cohorts reach pensionable ages. Note the decrease in OADR in the Fertility scenario, occurring between 2030 and 2050.

Table 5. Dependency ratios, the Netherlands, 1985-2050.

	1985	2000	2015	2030	2050
Under 15					
Benchmark	28.4	25.2	20.8	21.8	20.9
Fertility	28.4	27.6	27.6	30.7	30.8
Mortality	28.4	25.2	20.6	21.6	20.7
Western	28.4	24.3	18.1	18.4	17.1
Realistic	28.4	26.2	22.9	24.6	24.2
65 or over					
Benchmark	17.6	20.8	27.6	40.6	43.7
Fertility	17.6	20.8	26.9	36.3	32.1
Mortality	17.6	21.9	33.0	51.3	60.1
Western	17.6	20.9	28.5	43.7	51.7
Realistic	17.6	20.6	27.2	38.5	39.5
Total					
Benchmark	46.0	46.0	48.4	62.4	64.6
Fertility	46.0	48.4	54.5	67.0	62.9
Mortality	46.0	47.1	53.6	72.9	80.8
Western	46.0	45.2	46.6	62.1	68.8
Realistic	46.0	46.8	50.1	63.1	63.7

The marital composition of population aged 60 and over is shown in Table 6. The Fertility scenario was omitted here, because high fertility has only an *indirect* impact (compared to the Benchmark variant) on the marital composition of the elderly (60+) for the period until 2045, working through marriage market mechanisms: higher fertility rates lead to higher numbers of single males and single females, with stronger competition effects in the marriage market. However, as non-married persons aged 60 and over account for only a small portion of marriages each year, their marital composition is hardly influenced until 2045.[3] The results of the Fertility scenario are essentially the same as those of the Benchmark scenario.

The results indicate that proportions married among the elderly will most certainly decrease in the future. For females the decline is from 46 percent in 1985 to 25-37 percent in 2050, while proportions of married males fall by 23 to 35 percentage points, depending on the particular scenario. As proportions of widows and widowers will remain more or less stable, decreasing shares of married men and women will go together with increasing shares of singles and divorced persons. Single males will occupy relatively large shares among the elderly, in particular in the Western scenario with its low first-marriage propensities. Currently there are much less never-married elderly males than widowers (6 percent versus 13 percent), but this situation reverses between 2015 and 2030, irrespective of the scenario adopted. Because of persistent excess mortality for males, future proportions widows will remain larger than proportions of single women, but the gap between these two female groups will clearly diminish.

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[3]Differences between the two scenarios in percentages married or single in the age group 60+ are limited to 0.2 percent in the year 2050. The consequences of increased numbers of eligible males and females are much larger for the medium age groups. For instance, the Fertility scenario leads to a decrease in the percentage married among females aged 15-59 (54.8 in the year 2050, as compared to 57.9 in the Benchmark scenario). At the same time, proportions single in this age group go up by 4 percentage points.

Table 6. Marital composition of the population aged 60 and over, the Netherlands, 1985-2050 (in %).

	Females					Males				
	Single	Married	Divorced	Widowed	Total	Single	Married	Divorced	Widowed	Total
1985	9.6	46.2	3.9	40.4	100.0	6.0	78.2	3.3	12.5	100.0
Benchmark scenario										
2000	7.0	42.5	7.1	43.3	100.0	6.9	72.6	6.9	13.6	100.0
2015	6.6	41.5	11.8	40.1	100.0	10.4	67.7	9.8	12.1	100.0
2030	12.2	36.0	12.8	39.0	100.0	19.2	59.7	9.5	11.6	100.0
2050	15.1	30.1	12.5	42.2	100.0	22.9	55.6	9.2	12.2	100.0
Mortality scenario										
2000	7.0	44.5	7.0	41.4	100.0	6.8	72.9	6.8	13.5	100.0
2015	6.7	47.9	11.5	33.9	100.0	10.0	67.9	9.6	12.6	100.0
2030	11.6	43.6	12.8	32.0	100.0	17.7	59.6	9.6	13.2	100.0
2050	14.6	36.5	12.8	36.1	100.0	22.0	52.9	9.3	15.8	100.0
Western scenario										
2000	7.0	42.8	7.0	43.2	100.0	6.9	72.5	6.8	13.8	100.0
2015	6.6	41.8	12.6	39.0	100.0	10.3	65.9	11.1	12.7	100.0
2030	12.6	34.9	15.7	36.8	100.0	19.9	55.3	12.5	12.2	100.0
2050	22.8	25.2	15.4	36.6	100.0	33.6	43.5	11.1	11.7	100.0
Realistic scenario										
2000	7.1	43.0	7.2	42.8	100.0	6.9	72.4	7.1	13.6	100.0
2015	6.8	42.7	12.6	37.9	100.0	10.6	65.9	11.2	12.3	100.0
2030	13.3	36.6	14.9	35.2	100.0	21.3	54.9	12.1	11.7	100.0
2050	20.7	29.0	15.2	35.2	100.0	31.5	45.0	11.6	11.9	100.0

3. Public Old-Age and Survivor Pensions in the Netherlands

Social security expenditures in the Netherlands amounted to 115 billion Dutch guilders (DFl) in 1988 (see Table 7). About 93 billion guilders were spent on social insurance. Within the latter group of insurance regulations one may distinguish the so-called *demographic regulations*, which constitute nearly one-third of all social security expenditures. These demographic regulations involve old-age state pensions ("Algemene Ouderdomswet" or AOW), early retirement schemes ("Vervroegde Uittreding" or VUT), children's allowances ("Algemene Kinderbijslagwet" or AKW), and survivor pensions ("Algemene Weduwen- en Wezenwet" or AWW).

Table 7. Social security expenditures in the Netherlands, 1975-1988 (in billion DFl).

	1975	1980	1985	1988
Total social security*	52.6	89.8	110.6	114.7
Of which:				
social insurance	41.7	73.4	86.2	92.8
social benefits	7.2	11.5	19.6	16.7
Share of total expenditures in net national income	26%	30%	29%	29%

* Excluding supplementary collective pension insurances and regulations.

Source: Financiële Nota Sociale Zekerheid 1990, p. 152.

A certain social security scheme falls within the group of demographic regulations when its eligibility criterion is a demographic one. For instance, age (for old-age state pension/AOW, and for children's allowances/AKW), number and age of the children (AKW), age, marital status and number of children under 18 (for survivor pension/AWW) are relevant criteria for many of the demographic regulations. Non-demographic criteria, such as health and household income or individual income, are applied for eligibility assessment of the remaining regulations. The most important scheme in the latter group is welfare ("Algemene Bijstandswet" or ABW), which aims at ensuring a minimum income level.

Table 8 shows the development of expenditures for the social security schemes of AOW, AWW, AKW and ABW. The increase from DFl 21 billion in 1975 to the present level of DFl 38 billion is due to a number of factors: demographic (e.g. growth and aging of the population, changes in the marital status and household composition), changes in eligibility criteria, variations in benefit levels, and inflation. Between 1975 and 1988 the population size rose from 13.6 million to nearly 14.7 million persons. The resulting average annual population growth rate of 0.6 percent is much lower than the average annual growth rate of 4.7 percent for expenditures to the four schemes presented in

Table 8 for the same period. Hence other demographic factors than population size, and non-demographic factors have accounted for the larger share of the growth in expenditures.

Table 8. Expenditures and number of beneficiaries for demographic schemes, the Netherlands, 1975-1988 (see text for abbreviations).

	Expenditures (in billion DFl)			Beneficiaries (in 1000)		
	1975	1980	1988	1975	1980	1988
AOW	11.7	19.4	24.9	1159	1280	1893
AWW	1.6	2.5	2.9	162	168	195
AKW	4.4	7.1	5.9	5186[1]	4865[1]	3585[1]
ABW[2]	3.1	4.5	4.0	229	162	216

[1] Estimated on the basis of number of households broken down by number of eligible children.
[2] Old aged-persons homes and "Rijksgroepsregeling Werkloze Werknemers/RWW" excluded.

Source: Financiële Nota Sociale Zekerheid 1990, pp. 8-10, 152-155.

International comparative studies, and studies pertaining to the Netherlands have revealed that, generally speaking, the demographic component in expenditures growth is less important than the non-demographic component (Heller et al., 1986; Holzmann, 1987; Nelissen and Vossen, 1984; Van Imhoff and Keilman, forthcoming). Increases in real benefits and inflation contribute much more than changes in demographic structure, or population growth.[4] These findings must be considered in conjunction with the rise of the welfare state in the industrialized world since the 1960s. A number of functions which were performed by the family and other kin hitherto were increasingly taken over by other institutions, in particular the state. Old-age pensions are the most important example here, but also welfare. It is far from certain whether future growth in public social security expenditures (if at all) will be mainly due to non-demographic factors.

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[4]For instance, expenditures in the Netherlands for old-age pensions, widow's and orphan's allowances, and child allowances rose by some 67 to 85 percent between 1975 and 1982. Non-demographic factors accounted for a growth of 60 to 63 percent, and inflation (43 percent) was much more important than real growth (12 to 16 percent). Demographic effects (growth in population size, changes in age structure and marital status composition) resulted in a growth of 13 and 15 percent for old-age pensions and child allowances, respectively, and only 4 percent for widow's and orphan's allowances. For OECD countries in the period 1975-1984, the average annual growth rate for public expenditures on pensions was 4.7 percent (in real terms - it was 14.7 percent in nominal terms). Of this real growth, 1.6 percent was due to demographic effects (changes in population size and age structure), 1.5 percent to coverage, and 2.2 percent was accounted for by changing expenditures per beneficiary. See Nelissen and Vossen (1984), Van Imhoff and Keilman (forthcoming), and Holzmann (1987) for details.

All social security arrangements in the Netherlands can be classified into three main categories.

1. General social insurances. The arrangements in this category apply to all citizens and have been implemented in the form of a compulsory insurance. Premiums are levied on all personal income. The general social insurances include:

    - AOW   Old-age pensions (compulsory retirement at age 65)
    - AWW   Widow's and orphan's allowances
    - AKW   Child allowances
    - AAW   Disability benefits

2. Employees' social insurances. These are insurances compulsory for employees only. Premiums are levied on wage income. The most important arrangements in this category are:

    - ZW   Sickness benefits
    - WAO   Disability benefits
    - WW/WWV Unemployment benefits

3. Social provisions. No insurance principle is involved. Expenditures are wholly financed by general tax revenues. The most important social provisions are:

    - ABW   Welfare
    - RWW   Unemployment benefits

In this paper the focus is on old-age pensions (AOW), disability pensions (AAW/WAO) and survivor pensions (AWW). The latter two schemes are investigated in this paper for persons over 55 years of age only. Benefits and premiums are as follows (situation 1985):

- AOW   Annual benefits are 13,760 guilders for an unmarried person, and 19,867 guilders for a married couple, irrespective of the number of years worked. Premium is 11.7 percent of personal income.
- AAW   Maximum monthly benefits are equal to the legal minimum wage (minus holiday surplus), i.e. 1,988 guilders. A reduction is applied in case of partial disability. Premium is 6.1 percent of personal income. In case of gainful employment, premiums are paid by the employer.
- WAO   Benefits are at most equal to 93 percent of daily salary, depending on health situation of the individual. They are supplied to employees only. Persons eligible for AAW *and* WAO generally receive WAO-benefits only. Premium is 15.05 percent of a part of the gross salary, to be paid by the employee. No premiums are levied over the first 91 guilders per day, or over salary portions exceeding 262 guilders per day.
- AWW   Benefits are supplied to widows above age 40, and widows with unmarried children. At age 65, the pension is changed into old-age pension (AOW). Widows with unmarried children receive 19,867 guilders per year, widows without children receive 13,922 guilders per year. Contributions are 1.35 percent of personal income.

Pension premiums are not levied over total income, but over the so-called premium income only. This premium income is found by taking the annual tax income (which is often lower than the annual gross salary), and subtracting an amount between 7,000 and 14,000 guilders, depending on the household situation of the individual. It cannot exceed a certain maximum (around 52,000 guilders per person per year for disability pensions, and 63,000 guilders for old-age and survivor pensions). When one takes average annual incomes into consideration (47,000 guilders for males and 33,100 guilders for females), and compares these with total contributions for old-age pensions, disability pensions and survivor pensions (23.570 million, 18.701 million, and 2.823 million guilders, respectively, see the *Statistisch Zakboek 1987*, p. 350), the effective premium rate for the three schemes taken together would be 17.66 percent (the labor force in 1985 is 3.915 million males and 2.154 million females).

From an international point of view, the flat rate pension system, in which old-age benefits are independent of the number of years worked, is rather exceptional. (There is one exception, however: immigrants who entered the Netherlands at age 15 or beyond will have a 2 percent reduction of the benefits for each year between their 15th birthday and their 65th birthday during which they lived outside the country.) When the current AOW scheme was introduced in the Netherlands in 1958, female labor force participation was extremely low (it was 16 percent in 1960), and any substantial increase was not foreseen (due to some specific cultural factors, see Section 4). Thus a work-history related scheme would not be appropriate in the Dutch context in the 1950s. As we shall see in the next section, even nowadays female labor force participation is still so low, that women would be disfavored.

4.   Developments in Size and Age Structure in the Labor Market, 1971-1989

Despite the economic recession which struck the Netherlands in the 1970s (as in many other industrialized countries), the working population increased between 1971 and 1979 from 4.8 million to 5.0 million persons. Around 1980, unemployment started to grow quickly, resulting in a decrease in the working population. However, in the second half of the 1980s, better economic conditions accompanied a strong increase in the working population, which reached a level of 5.5 million in 1988[5] (see Figure 4). The labor force, which is comprised of the working and the unemployed population, rose even stronger; it reached 6.2 million persons in 1988, whereas it was only 5.0 million in 1975.

The rise in the working population was largely caused by an increase in the population aged 15-64. Except for the early 1980s, the overall activity rate (defined as the ratio of

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[5]Around 1985, the definition of the working population changed. The effect was that around 200,000 persons recorded unemployed so far, were included in the working population according to the new definition (SZW, 1989, p. 21).
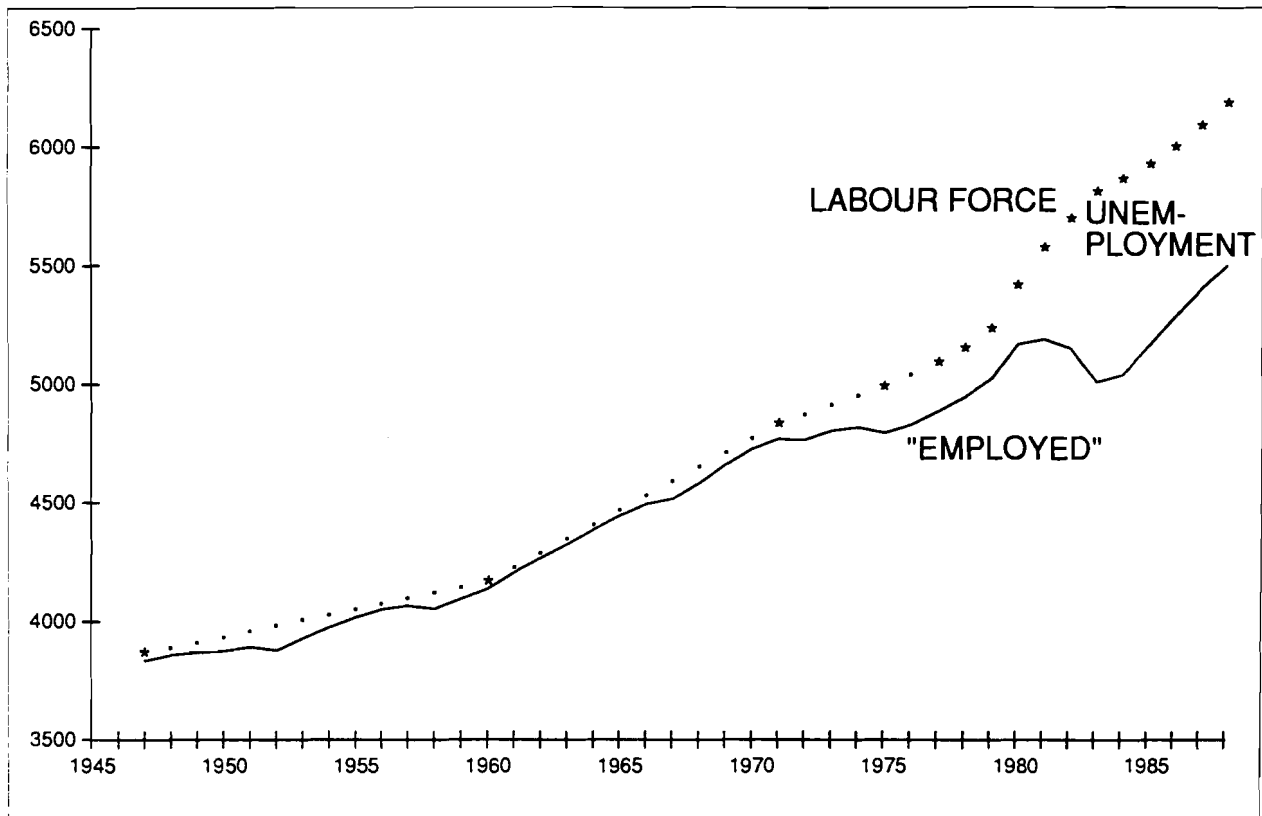
Figure 4. Labor force, employed (working) population and registered unemployment.

N.B. Source: NCBS (1989, pp. 76-81). Observed figures are indicated with an asterisk, estimated figures with a dot. Before the year 1977, the labor force was not measured annually. Figures for the years 1947, 1960, and 1971 are taken from population censuses. For inter-census years, the labor force is estimated on the basis of piece-wise linear interpolation between census observations, and likewise for the period 1972-1976. The employed (working) population is calculated as the difference between the labor force (observed or estimated) and the number of registered unemployed persons, for which annual observations exist from 1947 onwards. See, however, also footnote 5 of this paper.

the total labor force to the population aged 15 and over[6] displays a continuous decline during the period between 1960 (when it was 62 percent) and 1987 (58 percent). At the same time, part-time work gained considerable importance since 1960. Until the mid-

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[6]One should be very careful with the overall LFPR as a measure of labor force participation in a situation where age-specific LFPR's and/or the age structure of the population are highly irregular. The overall activity rate is crude in the demographic sense. A rise in age-specific LFPR's for all ages may very well lead to a declining overall activity rate in an aging population, in particular for females in the Netherlands. The reason is that age-specific LFPR's for females are high at young ages, and relatively low at old ages. When the median age of the population aged 15 or more shifts towards ages where LFPR's are below the average, the overall activity rate may decrease, even when all age-specific LFPR's follow an upward trend. Standardization of the overall activity rate with a constant population age structure may help. Alternatively, for constant LFPR's, the overall activity just shows the aging of the labor force in an aging overall population.

1970s, this phenomenon was almost absent in the Netherlands. At present, no less than 55 percent of the females work part-time (situation as of 1987), but only 9 percent of the males. Among the countries of the OECD, the Netherlands has the highest share of women working part-time (together with Norway, where the figure is 56 percent).

The labor force participation is very unevenly distributed over the age-classes. Moreover, strong differences between males and females can be noted. Figure 5 shows labor force participation rates (LFPR's), expressing the ratio between the labor force and the potential labor force (including students, disabled and retired persons, housewives, etc.) for males and females for the years 1971, 1980 and 1989. First of all one notes, since 1971, a steady decrease in the LFPR's at young and at high ages, both for males and females. This may be explained by prolonged education for the age-group 15-19, and by early retirement and disability pensions for ages between 55 and 64. For females aged 60-64, the LFPR fell almost by 50 percent between 1971 and 1989, whereas for males in that age group the LFPR in 1989 is less than one-third of its 1971-value! Second, labor force participation of females above age 25 is strikingly low, at least compared with other industrialized countries. For instance, beyond age 25 female LFPR's in Sweden and in the US are rather close to those for males - in the Netherlands they are much lower. To a large extent, it is the labor market behavior of *married* women, which accounts for the low female LFPR's - these women, much more so than in other industrialized countries, withdraw permanently from the labor market after childbearing.

Why do married women in the Netherlands work so much less in the labor market than women in other industrialized countries? Two reasons can be given.

First, until the 1960s, the traditional system of family norms was well preserved in Dutch society. It was a consequence of the emancipatory movement, starting already in the 17th and 18th centuries, among the religiously and economically oppressed Roman Catholic minority living in the Southern part of the country, who developed specifically Roman Catholic standards of ethics regarding the family and contraception. This resulted in a Catholic opposition to the use of contraception and a "...glorification of large families..." (Van Poppel, 1985, p. 370), which lasted well into the 1950s. The Church's social program tried to mitigate the disintegration it associated with industrialization. Married women were virtually prohibited from working in the new factories in the first decades of the 20th century, very often in agreement with Catholic factory owners. But also, and this is the second reason, the *demand* for female workers was relatively low, as the Netherlands didn't go through the First World War, during which large numbers of women in neighboring countries worked in factories.

The result of these two factors was that during more than sixty years in the 20th century, facilities to combine motherhood with a career in the labor market received traditionally little attention in the Netherlands. The situation, although it has improved somewhat, is still worse than in other European countries. For instance, up to 1990, a Dutch mother could take fully-paid maternity leave during a period of 12 weeks only. Very recently, this period was extended to 16 weeks. In other EC-countries, maternity leave ranges from 12 weeks (Greece, with 50 percent of the salary) up to 28 weeks (Denmark, 90 percent of the salary up to a certain maximum). Norway, Finland and Sweden have even more favorable arrangements.
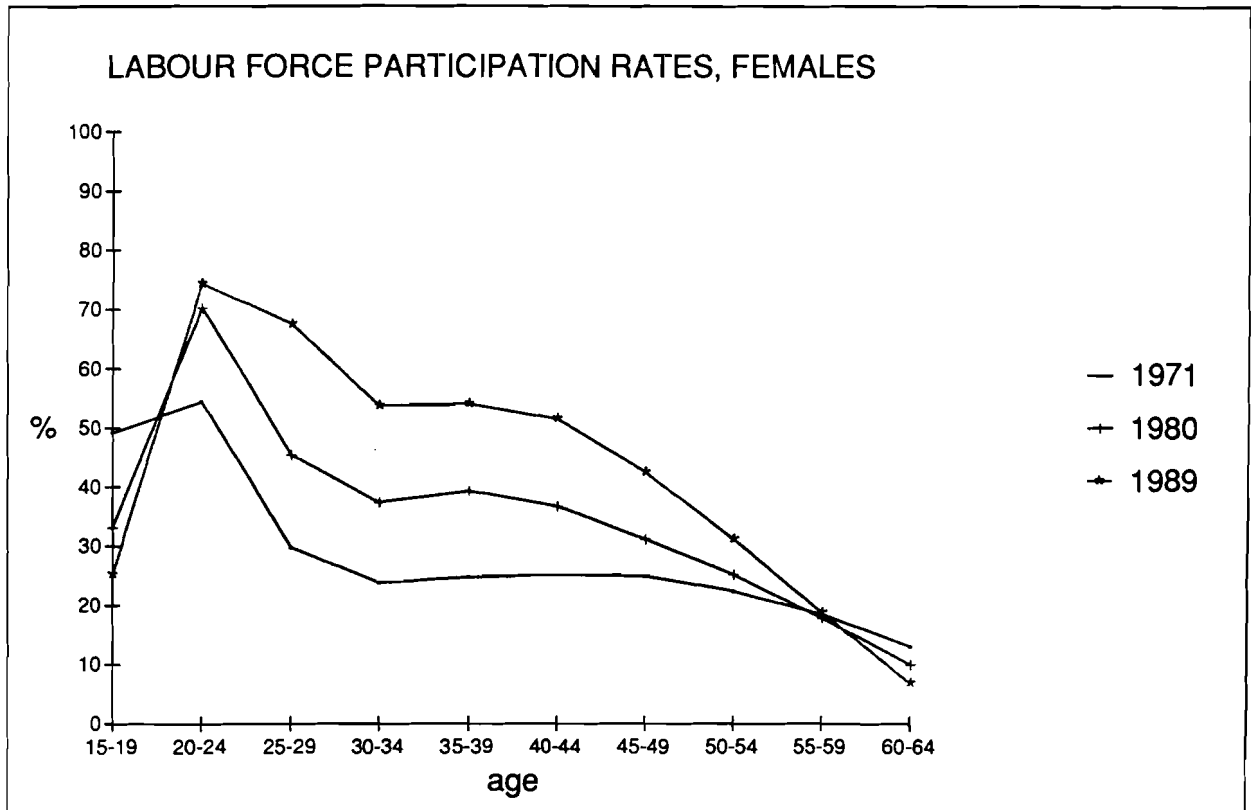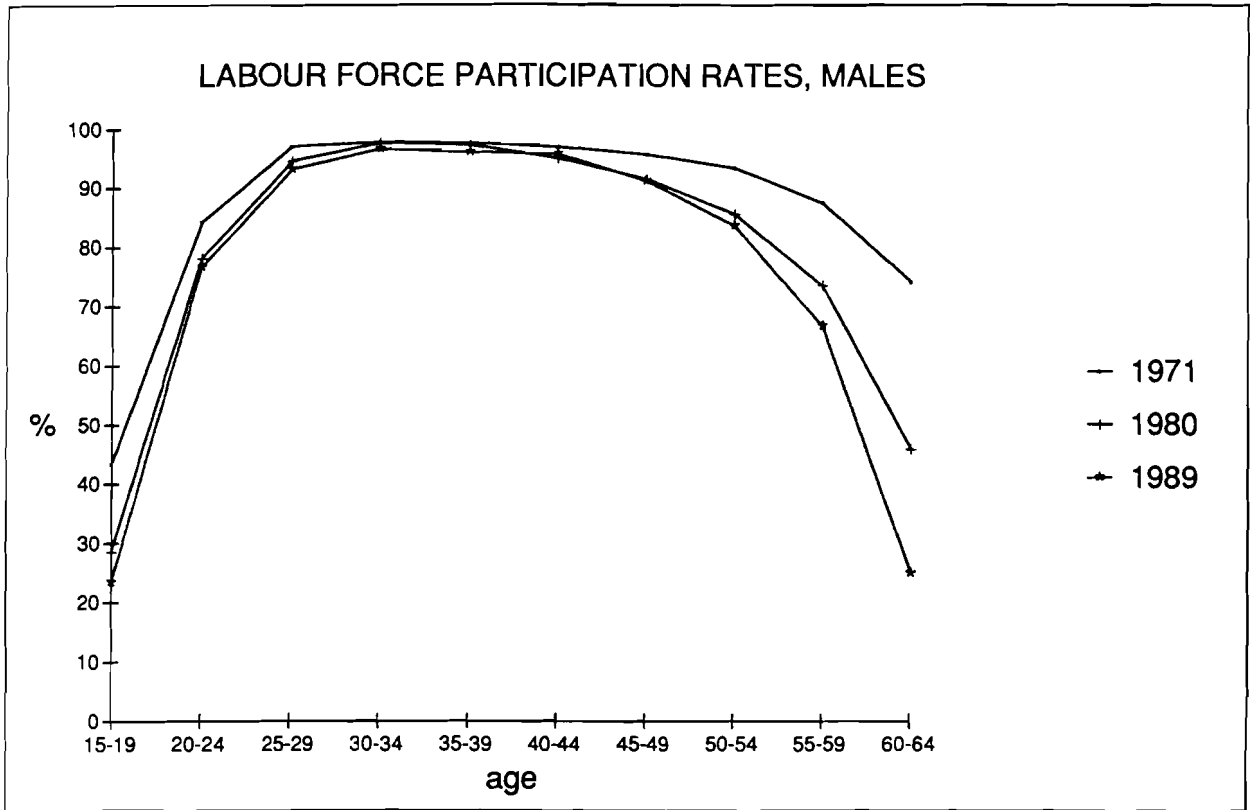
Figure 5. Labor force participation rates, 1971, 1980 and 1989.

5. Future Pension Expenditures: One More Scenario

Future pension expenditures were calculated for the demographic developments in the five demographic scenarios. A sixth scenario was added, implying demographic trends as assumed in the Realistic scenario, but with different social security parameters. As was mentioned in Section 3, the social security system in the Netherlands is based on *flat* benefit rates for many types of social security (including old-age state pensions, disability pensions and survivor pensions), independent of the number of years worked. Because of this peculiarity of the Dutch system, an additional scenario called *FRG Social Security* was devised. It consists of benefits rates, the pension scheme and proportions of claimants among widow(er)s as they are used in the Benchmark scenario for the Federal Republic of Germany (applying to the situation in 1985). Other pension parameters, such as the average salary, the payroll tax rate, labor force participation rates and proportions retired are similar to those in the Netherlands' benchmark calculations. Thus a comparison between results of the FRG Social Security scenario and the Realistic scenario gives us the possibility to study the effects on total expenditures of an introduction of a state pension system which would be similar to that of Germany.

The development over time of expenditures for old-age and survivor pensions in various scenarios is shown in Table 9. The results for 1985 agree quite well with official figures. The NCBS *Statistisch Zakboek 1987* (p. 350) gives 22.904 million guilders for old-age pensions, and (p. 347) 16.809 million guilders for disability pensions. Some 41 percent of the latter sum are supplied to persons above age 55. This makes a total of 29.796 million, to be compared with the 30.676 in Table 9. The official figure regarding survivor pensions expenditures (p. 350) is 2.614 million guilders. This is much higher than the figure of 1.517 million in Table 9. Two reasons can be given for the deviation.

Firstly, official figures relate to gross expenditures, whereas the figures in Table 9 are obtained as a simple product of net-individual benefit and number of eligible persons. Van Imhoff and Keilman (forthcoming) estimate, on the basis of Personal Income Distribution data and Housing Demand Survey data, total net-benefits supplied for AWW to be 1.877-2.041 million guilders, depending on the data source chosen. Secondly, AWW benefits are supplied to widows between ages 40 and 65. For reasons of international comparison, widows under 55 are ignored in the present paper. These widows make up 35 percent of all widows between 40 and 65. When the figures of Van Imhoff and Keilman are reduced by the latter percentage, we would obtain 1.251-1.361 million guilders, which is fairly close to the 1.517 million in Table 9. What these comparisons demonstrate is that self-reported figures on income from social security sources are not very reliable - it urges to provide future trends in the form of index numbers only, not absolute levels.

The trends shown in Table 9 are dramatic: with the current social security system, expenditures for public old-age, disability and survivor pensions together will, in 2030, most certainly be about twice as high as in 1985, irrespective of which demographic scenario would materialize. After that period, total expenditures will go down, but in the year 2050 they would still be about 50 to 100 percent higher than in the mid-1980s. This implies an average annual growth rate of 0.7 to 1.1 percent over a period of 65 years.

The growth is particularly strong in the period between 2000 and 2030, with average rates of between 1.8 and 2.3 percent per year.

Expenditures for survivor pensions exhibit a moderate development in the Benchmark, the Western and the Realistic scenarios: they will reach their maximum around 2015 (at a level which is 14-24 percent higher than in the base year), and subsequently decline (to some 65-95 percent of the 1985 value). The clear exceptions to this general trend are the Mortality scenario and the FRG Social Security scenario. In the Mortality scenario, the reduction of excess mortality of males will bring about a steady decline in survivor pensions. On average during the period 1985-2050, the fall will be 0.9 percent per year. But this decrease is insufficient to compensate for the increase in old-age pensions (1.5 percent per year during the years 1985-2000, and even 2.4 percent per year in the period 2000-2015!), because the latter pensions constitute the majority of total expenditures in Table 9.

Table 9. Pension expenditures, the Netherlands, 1985-2050.

		1985 (in millions of guilders)	2000	2015 (index, 1985 = 100)	2030	2050
Benchmark	old age[1]	30676	121	158	186	158
	survivors	1517	100	124	117	95
	total	32193	120	157	183	155
Mortality	old age	30676	125	180	223	205
	survivors	1517	89	81	71	57
	total	32193	123	175	215	198
Western	old age	30676	121	162	192	167
	survivors	1517	98	114	98	67
	total	32193	120	159	188	162
Realistic	old age	30676	122	165	201	186
	survivors	1517	99	115	106	84
	total	32193	121	163	197	181
FRG Social Security[2]	old age	28197	124	176	213	191
	survivors	6789	121	134	146	130
	total	34987	123	168	200	179

[1] Including disability pensions supplied to persons over 55 years of age.
[2] Based on an exchange rate of 110 Dutch guilders for 100 German marks.

In a social security system similar to that of the FRG, old-age pension expenditures would exhibit the same trend as is the case with the current system in the Realistic scenario, but the expenditures would take off at a somewhat lower level. In addition, survivors pensions would be more than four times those in other scenarios, and they would grow continuously. The reason is that in the FRG, the survivor pensions to widows are much more important than in the Netherlands, where widows receive survivor pensions only until age 65, and from that age on old-age pension (irrespective of the number of years worked). For instance, Gonnot and Prinz (1989, Table 11) indicate that survivor pension expenditures in the FRG are about half as large as those for old-age pensions, whereas in the Netherlands the corresponding proportion is less than one-tenth (the official figures quoted above give for the year 1985 a proportion of 11 percent). Thus an FRG social security system would imply more or less the same expenditures for old-age and survivor pensions together, as compared with the Realistic scenario. But the balance is very different: less old-age pensions, and more survivor pensions.

Questions about the feasibility of the Dutch old-age and survivor pension system can only be answered when total expenditures are related to contributions from the working population. Assuming constant labor force participation rates, the total labor force would first grow with some 8-12 percent over the period 1985-2000, when relatively small cohorts (both in terms of numbers in these generations, and numbers working) born during the years 1920-1940 retire and are replaced by large cohorts born in the 1960s (see Table 10). But the fall in fertility after the mid-1960s implies a drop in the size of the labor force in the first few decades of the 21st century - first slowly, but next more rapidly, to 83-103 percent and 62-95 percent of the 1985 value in the years 2030 and 2050, respectively. How can such a shrinking labor force generate increasing pension expenditures? Table 11 sheds some light on this issue.

Table 10. Labor force, the Netherlands, 1985-2050.

	1985 in 1000s	2000	2015 index, 1985 = 100	2030	2050
Benchmark	6070	108	100	83	67
Fertility	6070	108	102	94	94
Mortality	6070	108	101	85	69
Western	6070	109	103	84	62
Realistic	6070	112	112	103	95

Table 11. Contributions 1985, and contributions/benefits ratio, 1985-2050, the Netherlands.

	Contributions 1985 (in millions of guilders)	Contributions/benefits ratio (x 100)				
		1985	2000	2015	2030	2050
Benchmark	45,093	140	126	89	64	61
Fertility	45,093	140	126	91	72	83
Mortality	45,093	140	123	81	56	49
Western	45,093	140	127	90	62	53
Realistic	45,093	140	129	94	70	70
FRG Social Security[1]	45,093	142	128	91	69	71

[1]Based on an exchange rate of 110 Dutch guilders for 100 German marks.

In 1985, contributions to old-age, disability and survivor pensions were 40 percent higher than benefits for these pensions (it should be noted that benefits are *net* amounts, and that they do not apply to widows and to disabled persons under 55 years of age - hence Table 11 gives a too optimistic picture). This situation of overfunding will gradually change, and underfunding takes place between 2000 and 2015 in all six scenarios. The two extreme situations are those described in the Fertility scenario, where underfunding will be limited to some 30 percent in 2030, and the Mortality scenario, in which nearly half of the pensions cannot be financed with the current system!

It will be clear that future contributions are projected here with the implicit assumption that the National Income will remain constant. A situation with an economic growth of one or two percent annually would, of course, alter the picture drastically, *provided that benefits remain at their 1985 levels*. In case benefits would follow economic growth, both contributions and benefits have to be multiplied with the same factor, and the contributions/benefits ratio would be the same as in Table 11. When contributions would follow economic growth, while benefits would stay at their 1985 levels, the economic situation of beneficiaries would deteriorate steadily, and they would be pushed more and more towards the lower deciles of the income distribution curve. From a social policy point of view, such a situation would be hard to justify. In reality, net-old-age pensions follow the same trend as the net-social minimum income. This relationship, which is known as the so-called net-net-link, implies an automatic negative feedback from contributions to benefits. When premiums have to be adjusted upwards in order to cope with higher financial burdens for old-age pension expenditures, the net-social minimum income will go down, and thus the net-benefit from old-age pensions will go down. In turn, this may lead to a higher demand for collective and private supplementary pensions. Benefits for collective supplementary old-age pensions take nearly half as much of the

Net National Income as public old-age pensions: for the year 1985 the shares were 3.5 percent and 6.1 percent, respectively. The projections presented here suggest that the sum of these two shares will rise in the future, and that collective (as well as private) old-age pensions will become more important.

Because the demographic scenarios point to a situation of underfunding in the 21st century, with little variation between these scenarios, the conclusion emerges that changes in the demographic conditions, such as an increase in the average number of children, or a persistent influx of immigrants, cannot prevent funding problems for the Dutch social security system. To solve these problems, changes in the system itself have to be pursued. Linking pension benefits to the labor history of potential beneficiaries probably doesn't bring much relief, as the findings for the FRG Social Security scenario indicate. Therefore, two additional scenarios were devised: one with higher labor force participation (which would increase contributions), and one with a raise in the pensionable age (which would increase contributions, and at the same time bring benefits down).

6. A Labor Market Scenario and a Retirement Scenario

The *GDR scenario* assumes that by the year 2005, both males and females would follow the pattern of high labor force participation observed in the German Democratic Republic in 1985. In the *65 scenario* it is assumed that the age at retirement is progressively raised to 65 by the year 2005 for both males and females. (The mean age at retirement is estimated to be 59.2 for males and 57.5 for females (see Gonnot and Prinz, 1989, p. 10). Due to early retirement and disability this age is lower than the legal pensionable age of 65.) This scenario also implies that no survivor pensions are served under age 60, and that labor force participation for the age groups between 55 and 65 is shifted upwards to agree with the minimum pension age of 65. All other parameters for social security and for demographic conditions are maintained at their benchmark levels.

The likelihood of these two scenarios is very hard to assess. Firstly, the relatively high labor force participation rates that are observed in the GDR in 1985 may partly be the result of hidden unemployment. It is very unlikely that these rates will remain at those high levels after the major transition that is taking place in the German economy at present. On the other hand, LFPR's in Finland in 1989 are even higher than those in the GDR in 1985, and in Norway and Sweden they are only slightly lower. Secondly, the current high level of unemployment in the Netherlands is not likely to diminish rapidly during the next twenty years or so, even under favorable economic conditions. This means that one of the consequences of high female labor force participation will be increased unemployment, both for females and for males. Thirdly, it is not at all certain that Dutch women will quickly adopt the GDR pattern. A number of factors, both inside and outside the labor market, may impede a quick rise in the labor supply of females (Keilman, 1991). According to international standards, facilities related to day-care and maternity leave, which are intended to combine motherhood with a job, are pretty poor in the Netherlands, as was mentioned in Section 4. Furthermore, a mere substitution of (decreasing numbers of young) male workers by (increasing numbers of) female workers

is not without problems. Many occupations are traditionally dominated by males, and these are not easily accessible for women. Nevertheless, in most studies regarding the future composition of the labor force, some rise of female labor force participation rates is assumed. On the basis of the previous discussion it will be clear that future levels are to a certain extent arbitrary.

As far as retirement is concerned, it should be noted that raising the pensionable age opposes the current trend. Yet some concern has been expressed already over the fact that early retirement becomes more widespread in the Netherlands, with a steadily decreasing age at retirement. Two problems are mentioned in this respect: the costs connected with early retirement, and the shortages in the labor market which are foreseen for some occupational groups in the future. A rise in the age at retirement would have to be obtained through an appropriate reduction of the probabilities for the older segments to leave the labor force. It would be natural to suppose that such a higher mean age at retirement would be based upon a flexible retirement scheme, in which the individual worker could decide to stop working between ages 60 and 75, say, rather than at the fixed age of 65, as is the case now in the Netherlands. It may be assumed that many of the present eldest workers, especially those in construction and heavy industry, would be confronted with large physical problems if the legal age of retirement would be fixed at 70 years, for example. Indeed, indications for hidden disability have been found among early retirees in the Netherlands (Henkens and Siegers, 1990). Thus, we assume that under the 65 scenario the pensionable age becomes 65 *on average*, with some workers retiring earlier, and others later.

In general, the two additional scenarios should be interpreted the same way as the other scenarios: they are conditional statements of what will happen *if* input variables to the model would develop according to these scenarios. They sketch a *possible* future, not necessarily a *plausible* one (except for the realistic one).

Table 12 indicates that in the GDR scenario the labor force would show an enormous growth during the first one or two decades of the projection period. For instance, in the year 2000 it would be more than 40 percent larger than in the mid-1980s. The rise is particularly strong for women, for whom the index is no less than 181 in 2000. This is also reflected in the overall activity rate shown in the lower panel of Table 12. This indicator is defined as the ratio of the total labor force to the population aged 15 and over.

Table 12. Labor force and overall activity rate, the Netherlands, 1985-2050.

		1985 (in 1000s)	2000	2015	2030	2050
			(index, 1985 = 100)			

Labor force

	1985 (in 1000s)	2000	2015	2030	2050
Benchmark	6070	108	100	83	67
Fertility	6070	108	102	94	94
Mortality	6070	108	101	85	69
Western	6070	109	103	84	62
Realistic	6070	112	112	103	95
GDR	6070	144	135	114	92
65	6070	119	114	97	79

Overall activity rate (%)

		1985	2000	2015	2030	2050
Benchmark	Males	68	69	63	58	58
	Females	36	37	33	29	29
Fertility	Males	68	69	63	59	62
	Females	36	37	34	31	33
Mortality	Males	68	68	60	53	51
	Females	36	36	32	28	26
Western	Males	68	69	63	57	55
	Females	36	37	36	33	31
Realistic	Males	68	69	63	59	59
	Females	36	37	36	33	33
GDR	Males	68	79	75	69	69
	Females	36	61	56	49	48
65	Males	68	76	72	68	68
	Females	36	40	38	35	34

In the GDR scenario, an average woman would have worked 37 years in the year 2000, whereas the corresponding figure in the Benchmark scenario would only have been 23 years. For males the average number of years worked would be 45.6 in the GDR scenario, which is 7 years more than the Benchmark value. Moderate rises in the labor force, with very little differences between the sexes, can be noted in the 65 Scenario.

Increased labor force participation and a raise in the retirement age have strong effects upon the ratio between benefits and contributions for the first forty years or so. Table 13 demonstrates the huge impact of these two alternative labor market scenarios. The 65 Scenario appears to be the most favorable from a funding perspective, with an overfunding of almost 100 percent by the year 2000. Increased labor force participation has a more moderate effect, because benefits are not related to the work history of the

beneficiary. Yet its impact is considerable, compared with the Benchmark and the Realistic scenario. However, in the long run, underfunding cannot be avoided in the GDR and the 65 Scenario either, although the results suggest that a combination of the two scenarios probably could. Whether such a combination is feasible in the Dutch labor market is questionable, at least in the short run.

Table 13. Contributions/benefits ratio, 1985-2050, the Netherlands (x 100).

	1985	2000	2015	2030	2050
Benchmark	140	126	89	64	61
Fertility	140	126	91	72	83
GDR	140	164	118	85	81
65	140	199	149	103	94

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