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– Projections based on the government bill

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FOREWORD

In the autumn of 2015, the Finnish parliament is discussing the bill presented by the Government of Juha Sipilä on the amendments to the earnings-related pension acts. The new acts are intended to come into effect as of the beginning of 2017. The reform aims at postponing retirement and extending working lives.

In the autumn of 2014, the Finnish Centre for Pensions published preliminary projections on the effects of the agreement negotiated by the labour market organisations. In the early 2015, the projections were published in a more extensive report (in Finnish with an Executive Summary in English), *Laskelmia vuoden 2017 työeläkeuudistuksen vaikutuksista* (Finnish Centre for Pensions, Reports 02/2015). After the publication of that report, many of the details of the planned reform have been specified in the preparatory work for the government bill by the Ministry of Social Affairs and Health.

Based on the government bill, the report in hand includes updated projections of the effects of the reform on pension expenditure, earnings-related pension financing and the average benefit levels, as well as the pension contributions and benefits of various birth cohorts. In addition to taking into account the details of the pension reform, the projections have been updated to correspond to the more recent data on the factual economic development and the near-future economic outlook.

This report is an abbreviated version of the Finnish report *Laskelmia vuoden 2017 työeläkeuudistuksen vaikutuksista – Hallituksen esitykseen perustuvat arviot* (Projections on the effects of the 2017 earnings-related pension reform – projections based on the government bill) (Reipas and Sankala 2015).

Kaarlo Reipas and Mikko Sankala have prepared the report and the projections presented in it. Lena Koski translated the report into English. The layout of the report was done by Heidi Nyman, and the covers were designed by Katri Saarteinen.

Mikko Kautto

Director, Finnish Centre for Pensions

ABSTRACT

In this report, we present projections of the effects of the government bill on the 2017 pension reform. Our projections are based on the long-term projection (LTP) model of the Finnish Centre for Pensions.

We estimate that the government bill will postpone retirement, mainly due to the increases in retirement ages. As a result, working lives will be extended, employment will improve and the number of retirees will grow more moderately in the future. According to our estimates, the annual earnings-related pension expenditure relative to the insured earnings will decrease in the short- and medium-term as a result of the bill. This effect is due to both a reduction in pension expenditure and an increase in the earnings, and the effect will be stronger in the public sector than in the part of the private sector that is governed by the Employees Pensions Act.

The reduction in the pension expenditure under the Employees Pensions Act as a result of the government bill will allow for a lower contribution level. According to our projection based on the government bill, the contribution under the Employees Pensions Act can be kept at 24.4 percentage points until the end of the 2060s.

The average pensions are estimated to grow as a result of the government bill due to, among other things, extended working lives and a mitigated life expectancy coefficient. Due to the reduced time spent in retirement, however, the government bill will reduce, on average, the life-cycle pension income under the Employees Pensions Act for persons born in the 1960s, the 1970s and the 1980s. If the contribution rate under the Employees Pensions Act is kept at 24.4 per cent until the 2060s, the amount of contributions paid by those born between the 1960s and the 2000s over their lifespan will increase. The impact of the government bill on the capital value of already accrued pensions will be minor, as different factors will affect in different directions.

ABSTRAKTI

Raportissa esitetään ennustelaskelmia vuoden 2017 työeläkeuudistusta koskevan hallituksen esityksen vaikutuksista. Laskelmat perustuvat Eläketurvakeskuksen PTS-laskentamalliin.

Hallituksen esityksen arvioidaan myöhentävän eläkkeelle siirtymistä, lähinnä vanhuuseläkeiän korotusten takia. Tämän seurauksena työurat pidentyvät, työllisyys paranee ja eläkeläisten lukumäärä kasvaa vastaisuudessa maltillisemmin. Arvioiden mukaan vuotuiset työeläkemenot suhteessa vakuutettuun työtulosummaan pienenevät esityksen seurauksena lyhyellä ja keskipitkällä aikavälillä. Vaikutus muodostuu sekä eläkemenojen pienentymisestä että työtulosumman kasvusta ja on julkisella sektorilla TyEL:iä voimakkaampi.

TyEL-menojen pienentyminen hallituksen esityksen seurauksena mahdollistaa matalamman maksutason. TyEL-maksu voidaan arvion mukaan pitää 24,4 prosenttiyksikön suuruisena 2060-luvun loppupuolelle saakka.

Keskieläkkeiden arvioidaan kasvavan hallituksen esityksen seurauksena muun muassa työurien pidentymisen ja elinaikakertoimen lieventymisen takia. Lyhenevän eläkeajan takia hallituksen esitys kuitenkin keskimäärin vähentää 1960-, 1970- ja 1980-luvuilla syntyneiden henkilöiden elinkaaren aikaisia TyEL-eläketuloja. Jos TyEL-maksu pidetään 24,4 prosentissa 2060-luvulle asti, kasvattaa uudistus vuosina 1960–2000 syntyneiden henkilöiden elinkaaren aikana maksamia TyEL-maksuja. Hallituksen esityksen vaikutus jo karttuneiden eläkkeiden pääoma-arvoihin on vähäinen eri tekijöiden vaikuttaessa eri suuntiin.

EXECUTIVE SUMMARY

In this report, we present projections of the effects of the government bill on the 2017 pension reform. Our projections are based on the long-term projection (LTP) model of the Finnish Centre for Pensions.

According to the government bill, the general retirement age will rise to 65 years by 2027, after which it will be determined based on the development of life expectancy. The retirement age is estimated to rise to 65 years and 9 months for persons born in 1970 and 67 years and 7 months for those born in 1990.

The government bill is estimated to postpone retirement by 1.3 years by the year 2040 and by nearly two years by 2080, when using the expected effective retirement rate as an indicator. In the long term, this will reduce the number of retirees, which will be manifested in the rising number of both employed and unemployed persons.

According to our estimates, the annual earnings-related pension expenditure relative to the insured earnings will decrease as a result of the bill. The impact on the pension expenditure ratio will be at its highest, approximately two percentage points, in the 2030s and the 2040s, due to both the reduction in pension expenditure and the increase in earnings. In the long run, the government bill will increase both earnings and the pension expenditure and, according to the projection based on the bill, the pension expenditure ratio will return to the level of the projection under current legislation.

The public-sector pension expenditure ratio will be reduced more than that under the Employees Pensions Act since the pension expenditure relative to the earnings is higher in the public sector. The effect on the pension expenditure ratio under the Self-employed Persons' Pensions Act and the Farmers' Pensions Act is larger and more long-term than on the pension expenditure ratio under the other pension acts. This is due to the fact that the other earnings-related pension acts are proposed to be amended so that the wage-earner's share of the earnings-related pension contribution would no longer be reduced from the pensionable earnings. Even at present, this reduction is not made in insurance under the Self-employed Persons' Pensions Act and the Farmers' Pensions Act.

The reduction in the pension expenditure under the Employees Pensions Act allows for a lower contribution level in the projection based on the reform than in the projection based on current legislation. According to the projection based on the government bill, the contribution under the Employees Pensions Act can be kept at 24.4 per cent until the end of the 2060s. Alternatively, the contribution can be reduced as of the latter half of the 2020s. In that case, the amount of the assets under the Employees Pensions Act relative to the insured wage sum will remain at a lower level, which means that, in the long term, as the pension expenditure grows, the contribution will have to be increased at a faster pace.

As a result of, on the one hand, the amended rules concerning how the pension is determined and, on the other, of the extended working lives, the average pensions are projected to rise. The mitigation of the life expectancy coefficient, in particular, will raise the pensions of persons born in 1965 or later. As a result of the reform, the average pensions

of those born in 1960 will grow by approximately two per cent, while the impact on those born in 1980 will be nearly ten per cent.

Due to the reduced time spent in retirement, however, the government bill will reduce, on average, the life-cycle pension income under the Employees Pensions Act for persons born in the 1960s, the 1970s and the 1980s. The effect will be approximately three per cent at its highest for those born between 1970 and 1975. The effect of the government bill on life-cycle contributions under the Employees Pensions Act strongly depends on how the contribution under the Employees Pensions Act will develop in the future. If the contribution under the Employees Pensions Act is kept at 24.4 per cent until the 2060s, the capital value of the contributions paid under the Employees Pensions Act of those born between the 1960s and the 2000s will increase due to the pension reform. If the contribution is reduced medium term, the capital value of the contributions paid under the Employees Pensions Act of these born in 1975 and later will decrease due to the pension reform.

The effect of the government bill on the capital value of already accrued pensions will be minor as different factors will affect in different directions. The raising of the retirement age will reduce the value of pensions accrued since the raising of the retirement age will not be taken into account from the beginning when determining the life expectancy coefficient. On the other hand, the value of the accrued pensions will be increased by, for example, the increment for deferred retirement calculated on the pension after reaching the earliest eligibility age for retirement and the new early retirement forms. At year-end 2014, the amount of accrued pensions in the projection under the current legislation, when using an interest rate of 3.5 per cent, is EUR 604.8 billion, while it is EUR 606.8 billion in the projection based on the reform.

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Introduction

In the autumn of 2014, the central labour market organisations negotiated on a pension reform set to come into effect at the beginning of 2017. The preparatory work for the government bill (HE 16/2015) was initiated under the leadership of the Ministry of Social Affairs and Health shortly after the agreement was signed. The Finnish Centre for Pensions assessed the economic impact of the pension reform both during the negotiations of the labour market parties and once the agreement was reached. A consequence analysis (in Finnish with an Executive Summary in English) was published in the spring of 2015: *Laskelmia vuoden 2017 työeläkeuudistuksen vaikutuksista* (Kautto and Risku [eds.] 2015).

Many details of the planned pension reform that were not discussed in the agreement were specified during the preparatory work for the government bill. The Finnish Centre for Pensions participated in the assessment of the economic effects also during the preparatory work for the government bill. Due to the details specified in the preparatory work and the changed economic situation, the results of the projections differ slightly from the assessments of the aforementioned report. In this publication, we present the projections that underlie the consequence analysis of the government bill.

In chapter 1, we present the main features of the Finnish pension system, as well as the most important amendments to pension legislation from the point of view of the projections presented by the government bill.

Chapter 2 presents the projections of the effects of the government bill on retirement and employment, mean pensions and lifelong pension income, pension expenditure per pension act, the financing of pension provision under the Employees Pensions Act, as well as on the accrued pension entitlements.

In chapter 3, we review an alternative way to determine the contribution under the Employees Pensions Act and examine the effects of an alternative contribution development on the results of the pension reform projections.

1 Finnish pension legislation and proposed amendments

The Finnish pension system

The most important part of the pension system in Finland is the statutory earnings-related pension system, which corporates approximately 89 per cent of the total statutory pension expenditure as of 2014 and has practically universal coverage. In the private and local government sector, earnings-related pensions are financed mostly by employer and employee contributions, while state employee pensions are financed from the state budget. In addition, there is a tax-funded national pension system and a guarantee pension system that supplement earnings-related pensions for those who have accrued no or only a relatively small earnings-related pension. Individual pensions generally play a minor role in retirement income. In this report, we mainly focus on the statutory earnings-related pension system, but our simulations also take into account the national pension and the guarantee pension.

Earnings-related pension legislation is arranged into several pension acts.

The private sector acts are:

- the Employees Pensions Act (TyEL)
- the Seafarer's Pensions Act (MEL)
- the Self-employed Persons' Pensions Act (YEL)
- the Farmers' Pensions Act (MYEL)
- the Act on Farmers' Early Retirement Aid (LUTUL) and the Change of Generations Pensions Act (SpVL)
- the Act on supplementary pension provisions under the Employees' Pensions Act (TEL-L)

The public sector acts are:

- the State Employees' Pensions Act (VaEL)
- the Local Government Pensions Act (KuEL)
- the Evangelical-Lutheran Church's Pensions Act (KiEL)
- the Pension regulations for the employees and officials of the Social Insurance Institution of Finland, the Bank of Finland and the regional government of Åland.

The projections also include the Act on Compensation for Pension Accrual from State Funds for Periods of Childcare and Periods of Study. However, the pension expenditure under this act is not part of either the private or the public sector expenditure and is only included in the total earnings-related pension expenditure for the whole economy.

The government bill includes the combination of the public sector acts into a new Public Sector Pensions Act. However, this change is mostly technical and, for example, the financing mechanisms of the state employees', local government employees' and church employees' pensions will remain separate. Hence, this change is not taken into account in the projections, and the results in this publication are presented separately according to the current acts.

Current earnings-related pension rules in a nutshell and proposed changes

Between the different pension acts, pension benefits are mostly the same. Pensions are accrued on a defined benefit basis. The main differences lie in the pension financing methods.

General retirement age

The general retirement age for the earnings-related pension is 63 years, with some exceptions, for example, for seafarers and military personnel.

The government proposes that the general retirement age be gradually raised to 65 years by 2027 and linked to life expectancy after that.

Accrual rules

Earnings-related pension accrues from income earned between the ages of 18 and 67 in accordance with the following accrual rates:

- 1.5 per cent of earnings at ages 18–52
- 1.9 per cent of earnings at ages 53–62
- 4.5 per cent of earnings at ages 63–67
- 1.5 per cent of earnings after retirement.

Pension is also accrued from certain social security benefits such as the unemployment allowance and the sickness benefit. The accrual is referred to as the *pension accrued on the basis of unpaid periods*. The income for which pension accrues is equal to the salary deducted by the employee's pension contribution (5.70%–7.20% of wages in 2015).

The government proposes that, as of 2017, the accrual rate be 1.5 per cent for all ages, with a transition period lasting until the end of 2025. During the transition period, the accrued pension will be 1.7 per cent of earnings at ages 53–62. However, in the future, the employee's pension contribution will no longer be deducted when calculating the pensionable income, which raises the *effective* accrual rate. From 2017 onward, pension will accrue as of age 17 (except under the Self-employed Persons' Pensions Act and the Farmers' Pensions Act), in contrast to the current age limit of 18 years.

Indexation

When calculating the initial pension amount, the income from different years is adjusted using the *wage coefficient*, which is a weighted average equal to 80 per cent of wage changes and 20 per cent of price changes. Pensions in payment are adjusted using an *earnings-related pension index*, which is a weighted average equal to 20 per cent of wage changes and 80 per cent of price changes. A one-time raise in the disability pension is carried out for young and middle-aged disability pensioners after the pension has been in payment for five years. The increase is 25 per cent for pensioners under the age of 32. For those over 32, the increase is lowered by one percentage point for each year of age.

The government has proposed no major changes in the indexation mechanism.

Pension benefits

Earnings-related pension benefits currently include disability, part-time, old-age and survivors' pensions.

Disability pension

The disability pension can be granted either as a full or a partial pension, depending on the degree to which the work ability of the insured has decreased. The disability pension is equal to the pension accrued up to the date on which the disability occurred, plus an additional amount based on projected pensionable service. The projected pensionable service is calculated from the time of the pension contingency until the time of turning 63. The annual accrual rate applied to the projected pensionable service is 1.5 per cent, and the salary applied is the average salary computed over the five years preceding the occurrence of the disability.

The government proposes that, in the future, the projected pensionable service be calculated until the new general retirement age. In practice, this will raise the amounts of new monthly disability pensions as of 2017.

Part-time pension

A part-time pension may be granted to insured persons who reduce their working hours so that their earnings decrease to 35–70 per cent of their stabilised earnings level. The age limit for a part-time pension is 58 years for those born in 1952 or earlier, 60 years for those born in 1953, and 61 years for those born in 1954 or later. The size of the part-time pension is half of the earnings reduction caused by the decrease in working hours.

The government proposes that this pension benefit be discontinued and replaced with a partial early old-age pension. The new benefit will allow an early withdrawal of either 25 or 50 per cent of the accrued old-age pension with an actuarial reduction but without restrictions on the pensioner's working hours.

Old-age pension

The insured are entitled to an old-age pension at the age of 63. In some special cases, the age limit of the old-age pension may be lower than 63 years. If the insured continue to work after turning 63 and do not draw the old-age pension, the pension accrual rate is 4.5 per cent per year. After reaching the age of 68, the pension accrual and the insurance obligation end.

The government proposes that the age limit is raised as described above and that the 4.5 per cent accrual rate after the general retirement age be replaced with a 1.5 per cent accrual rate and an actuarial *deferral increment* mechanism, which will raise the amount of the monthly pension by 0.4 per cent for each month that retirement is deferred after the earliest eligibility age.

In addition to these pension benefits, the government proposes that a new **years-of-service pension** be introduced. It may be granted to persons aged 63 who have worked for at least 38 years, mostly in strenuous and wearing work. The required reduction in work capacity is rather minor.

Life expectancy coefficient

New pensions are adjusted with a life expectancy coefficient. The coefficient actuarially lowers pensions to reflect changes in life expectancy at age 62. For new disability pensions, the accrued pension is also multiplied by the life expectancy coefficient. However, the coefficient is not applied to the projected pensionable service. Hence, the closer to the age of old-age pension the individual is when becoming disabled, the larger is the effect of the life expectancy coefficient on the size of the disability pension. The life expectancy coefficient affects the pensions of those born in 1948 and later. The value of the coefficient is determined separately for each birth cohort.

The government proposes that the definition of the life expectancy coefficient be updated to take into account the possible changes in the general retirement age due to the link to life expectancy. In practise, this change will raise the monthly pensions of persons born after 1965, providing the trend of a rising life expectancy continues. In addition to the general retirement age, the government proposes the introduction of a *target retirement age*, higher than the general retirement age. This target age is defined separately for each birth cohort as the age in which the deferral increment is large enough to cancel out the effect of the life expectancy coefficient.

2 Baseline projections

This chapter includes projections of the effects of the government bill on the pension reform. The projections are based on the long-term projection model (LTP) of the Finnish Centre for Pensions. The effects have been assessed by comparing the projection that corresponds to the government bill (the reform projection) with the projection based on current legislation.

We have made the same long-term assumptions in our report as were made in the report *Laskelmia vuoden 2017 työeläkeuudistuksen vaikutuksista* (projections on the effects of the 2017 earnings-related pension reform) (Kautto and Risku [eds.] 2015). Long term, the consumer price index has been assumed to grow annually by 1.7 per cent and the annual real earnings level by 1.6 per cent. The pension assets have been assumed to yield an annual real return of 3.5 per cent. The future population development has been assumed to adhere to the population projection of Statistics Finland up to the year 2060. The projection has been updated by the short-term economic forecast of this spring and the realised data for 2014 and 2015.

Table 2.1 presents the results of the current legislation projection and the effects of the government bill. As a rule, the results apply to all earnings-related pension acts.

Table 2.1.
Results of the projection.

	2015	2020	2040	2060	2080
The expected effective retirement age, years					
Current legislation	61.3	61.7	62.3	62.7	62.8
Effect of government bill	0.0	0.3	1.3	1.7	1.9
Number of employed, thousands					
Current legislation	2,299	2,353	2,441	2,470	2,522
Effect of government bill	0	6	53	77	91
Number of pension recipients, thousands					
Current legislation	1,423	1,518	1,750	1,904	2,056
Effect of government bill	0	19	-67	-116	-140
Total pension expenditure, EUR billion at 2014 prices					
Current legislation	28.6	32.1	44.3	59.7	84.1
Effect of government bill	0.0	0.1	-1.7	-1.6	1.4
Total pension expenditure, % of GDP					
Current legislation	13.9	15.1	14.2	13.7	13.7
Effect of government bill	0.0	-0.2	-0.9	-0.7	-0.1
Average pension, EUR per month at 2014 prices					
Current legislation	1,621	1,709	2,025	2,509	3,274
Effect of government bill	0	-14	5	117	329
Average pension, % of average wage					
Current legislation	53.5	55.2	46.4	41.5	39.3
Effect of government bill	0.0	-0.4	0.2	2.0	4.0
Pension expenditure under Employees Pensions Act, % of wage sum					
Current legislation	25.9	28.3	27.5	28.3	29.4
Effect of government bill	0.0	-0.3	-1.4	-0.7	0.5
Contribution under the Employees Pensions Act, % of wage sum					
Current legislation	24.0	24.8	24.3	24.6	26.0
Effect of government bill	0.0	-0.4	0.1	-0.2	-1.1
Assets under the Employees Pensions Act, % of wage sum					
Current legislation	227.8	237.7	216.0	219.6	219.9
Effect of government bill	0.0	-0.7	7.9	54.4	68.9

2.1 Retirement and employment rate

Based on the government bill on the earnings-related pension reform, the earliest eligibility age for old-age retirement will rise by three months per age cohort, starting from those born in 1955. The retirement age will continue to rise until it is 65 years for those born in 1962. For those born in 1965 or later, the earliest eligibility age for retirement will be adjusted to changes in life expectancy. Table 2.2 presents an estimate of the earliest retirement age and the target retirement age for each birth cohort.

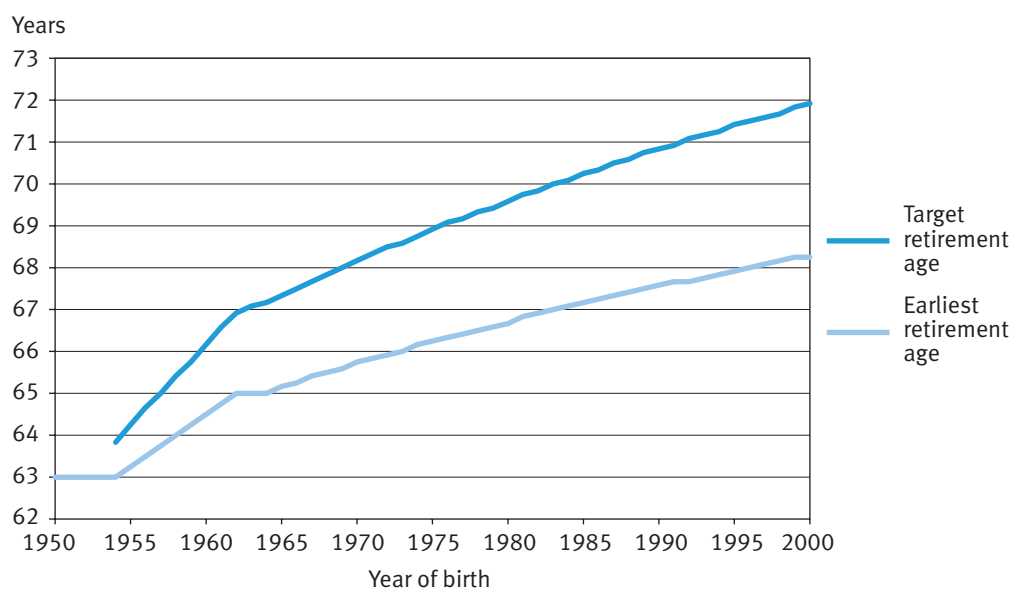
Table 2.2.

Age limits of the earnings-related pension system (the figures in italics are estimates)

Year of birth	Earliest retirement age	Target retirement age	Year of birth	Earliest retirement age	Target retirement age
1950	63 yrs		1964	65 yrs	67 yrs 3 mos
1951	63 yrs		1965	65 yrs 2 mos	67 yrs 4 mos
1952	63 yrs		1966	65 yrs 3 mos	67 yrs 6 mos
1953	63 yrs		1967	65 yrs 5 mos	67 yrs 9 mos
1954	63 yrs	63 yrs 10 mos	1968	65 yrs 6 mos	67 yrs 10 mos
1955	63 yrs 3 mos	64 yrs 3 mos	1969	65 yrs 7 mos	68 yrs
1956	63 yrs 6 mos	64 yrs 9 mos	1970	65 yrs 9 mos	68 yrs 3 mos
1957	63 yrs 9 mos	65 yrs	1975	66 yrs 3 mos	68 yrs 12 mos
1958	64 yrs	65 yrs 6 mos	1980	66 yrs 8 mos	69 yrs 7 mos
1959	64 yrs 3 mos	65 yrs 9 mos	1985	67 yrs 2 mos	70 yrs 3 mos
1960	64 yrs 6 mos	66 yrs 3 mos	1990	67 yrs 7 mos	70 yrs 10 mos
1961	64 yrs 9 mos	66 yrs 7 mos	1995	67 yrs 11 mos	71 yrs 6 mos
1962	65 yrs	66 yrs 12 mos	2000	68 yrs 3 mos	71 yrs 12 mos
1963	65 yrs	67 yrs 1 mos			

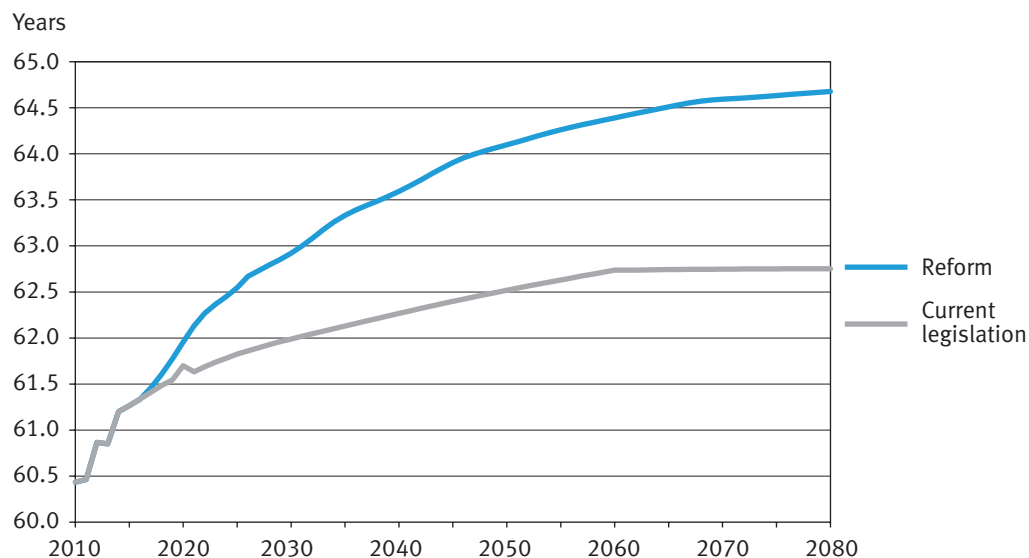
Figure 2.1.

Age limits of the earnings-related pension system.



In the reform projection, the earliest eligibility age for old-age pension will rise most rapidly from 2017 to 2027, when those born in 1962 will reach their retirement age. After that, the retirement age will be linked to life expectancy so that the time spent working (calculated as the general retirement age subtracted by 18) relative to the time spent in retirement (calculated as life expectancy at the general retirement age) will remain unchanged. As a result, the rise of the earliest eligibility age for retirement will slow down. The higher the retirement age is, the smaller the effect of the rising retirement age on the expected effective retirement age is estimated to be. The expected effective retirement age¹ of a 25-year-old is 62.9 years by 2030 in the reform projection, while it is closer to 62.0 years in the projection based on current legislation. By the year 2080, the expected effective retirement age is 64.7 years in the reform projection, and 62.8 years in the projection based on current legislation. We estimate that the goal set by the government and the central labour market organisations of 62.4 years by the year 2025 will be reached.

Figure 2.2.
Expected effective retirement age.



The number of people in employment will grow due to the reform with approximately 53,000 by the year 2040 and by 91,000 by the year 2080. This effect is mainly due to the rising retirement age. The reduction in the number of retired people is also partly channelled into an increasing number of unemployed people approaching the retirement age. The number of employed persons grows also due to the raising of the age limit for the additional days of unemployment allowance². In the long run, the reform will raise the employment rate of the 15–74-year-olds by approximately two percentage points.

¹ in the reform projection, when calculating the expected effective retirement age, those retiring on a partial pension have not been included among the retirees. In this respect, the partial old-age pension is treated analogous to the current part-time pension. Those retiring on a years-of-service pension, however, have been included among the retirees.

² The additional days of unemployment allowance are a path to retirement for aging unemployed persons. The age limit is currently 61 years for people born in or after 1957. In the reform agreement, it is stated that under certain conditions, this age limit is raised to 62 years for people born in or after 1961. This has been taken into account in the projections as stated in the reform agreement, even though it is not written in the government bill

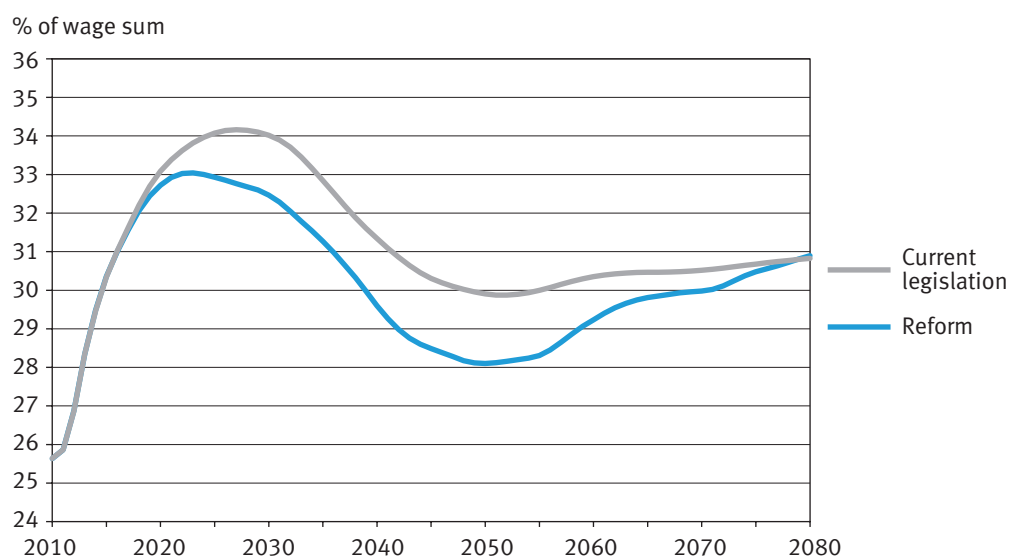
Table 2.3.
Number of employed and retirees.³

	2015	2020	2040	2060	2080
Number of employed persons, thousands					
Current legislation	2,299	2,353	2,441	2,470	2,522
Effect of government bill	0	6	53	77	91
Number of retirees, thousands					
Current legislation	1,423	1,518	1,750	1,904	2,056
Effect of government bill	0	19	-67	-116	-140

2.2 Development of pension expenditure

Compared to the development under the current legislation, the government bill will decrease the pension expenditure ratio, that is, the ratio of pension expenditure to the insured wage sum, for decades to come. At its strongest, the effect will be almost two percentage points in 2030–2050. It will include both a reduction in pension expenditure and a growth of the wage sum. Both the reduction in pension expenditure and the growth of the wage sum are mainly due to later retirement. After the year 2050, the effect of the government bill on the pension expenditure ratio will decrease.

Figure 2.3.
Earnings-related pension expenditure relative to the wage sum.



³ We have assumed that those drawing a partial old-age pension are working in addition to drawing the pension. In the figures in the table, they are included both as employed persons and retirees. Those working while drawing a partial disability pension have also been included in the figures as both employed persons and retirees.

Table 2.4.*Pension expenditure ratios per earnings-related pension acts and sector, %.*

	2015	2020	2040	2060	2080
Employees Pensions Act					
Current legislation	25.9	28.3	27.5	28.3	29.4
Effect of government bill	0.0	-0.3	-1.4	-0.7	0.5
Self-employed Persons' Pensions Act					
Current legislation	22.4	25.4	30.2	32.4	32.7
Effect of government bill	0.0	-0.6	-3.9	-4.3	-3.5
Farmers' Pensions Act					
Current legislation	55.3	60.4	59.2	42.5	35.3
Effect of government bill	0.0	-0.1	-4.0	-5.8	-5.3
State Employees' Pensions Act					
Current legislation	69.6	80.8	76.0	44.1	36.1
Effect of government bill	0.0	-0.4	-3.1	-1.4	-0.2
Local Government Pensions Act					
Current legislation	26.9	30.5	31.3	30.0	30.1
Effect of government bill	0.0	-0.3	-1.8	-1.4	-0.2
Private sector					
Current legislation	27.0	29.3	28.4	28.9	29.8
Effect of government bill	0.0	-0.4	-1.7	-1.0	0.1
Public sector					
Current legislation	38.6	42.7	39.2	32.4	31.1
Effect of government bill	0.0	-0.3	-1.9	-1.3	-0.1
Act on Compensation for Pension Accrual from State Funds for Periods of Childcare and Periods of Study⁴					
Current legislation	0.0	0.0	0.1	0.6	0.7
Effect of government bill	0.0	0.0	0.0	0.0	0.0
Total					
Current legislation	30.3	33.1	31.3	30.4	30.8
Effect of government bill	0.0	-0.4	-1.7	-1.1	0.1
Share of unpaid periods					
Current legislation	0.1	0.3	0.7	1.2	1.2
Effect of government bill	0.0	0.0	0.1	0.3	0.4

Table 2.4 presents the effect of the reform on the pension expenditure ratios under the major earnings-related pension acts, that is, the ratio between the pension expenditure to the wage sum insured under the corresponding pension act. The pension expenditure ratio under the public pension acts⁵ will decrease more than that under the Employees Pensions Act since the pension expenditure is higher relative to the wage sum under the public pension acts. The pension expenditure ratio under the Self-employed Persons' Pensions Act and the Farmers' Pensions Act will decrease more than the ratio under other pension acts as a result of the reduction in accrual rates. In insurance under other earnings-related pension acts, the

⁴ Expenditure relative to the wage sum of the whole economy.

⁵ The government bill proposes that the public sector pension acts be combined into one pension act but that the financing of the public sector (e.g., state, local government and church employees') pensions be kept separate from each other. In the projections and results of this report, the local government sector and state pensions have been presented according to the current division of pension acts.

abolishment of the deduction of the employee's pension contribution from the pensionable wage will partly compensate for the reduced accrual rates. However, even under current legislation, such a reduction is not made when calculating the pension of insurance under the Self-employed Persons' Pensions Act and the Farmers' Pensions Act.

2.3 Financing expenses under the Employees Pensions Act

The slightly more moderate development of the pension expenditure presented in the projection based on the government bill will allow for a lower contribution level than that projected under current legislation. In the pension reform agreement, the contribution under the Employees Pensions Act has been fixed for the years 2016–2019. The contribution is 24.0 per cent of wages in 2015 and will be raised to 24.4 per cent in 2017–2019. After that, the aim of the agreement is to secure an even and appropriate contribution development and to secure the pension benefits and their financing also long-term. In the projection according to the agreement, the even contribution development has been realised as follows: the contribution under the Employees Pensions Act will be kept at 24.4 per cent until the end of the 2060s, after which the contribution has to be increased again when and if the expenditure level rises.

Due to the pension expenditure development and the selected contribution level, the amount of accumulated assets relative to the wage sum is considerably higher in the reform projection than in the projection under current legislation. This is not a primary goal of the reform, and the projections made while planning the reform did not include such a strong accumulation of assets. Instead, the projected asset development is a result of the good investment returns of pension providers in the early 2015 and the significantly postponed retirement in 2014.

With the accrued contributions it is possible to even out the contribution development towards the end of the projected period when the pension expenditure level increases to the level of the projection under current legislation. Alternatively, the contribution could be reduced also medium term, but in that case, it would have to be correspondingly increased long-term. This alternative contribution development is discussed in chapter 3.

Figure 2.4.

Pension expenditure under the Employees Pensions Act relative to wage sum.

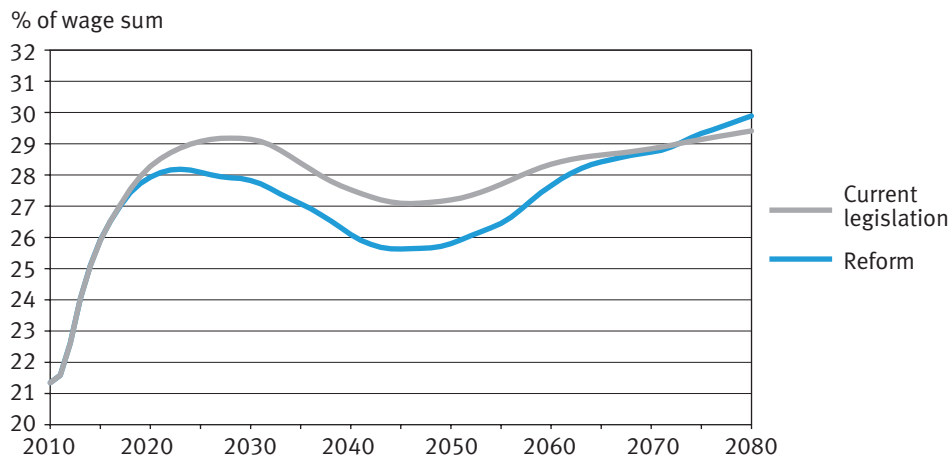
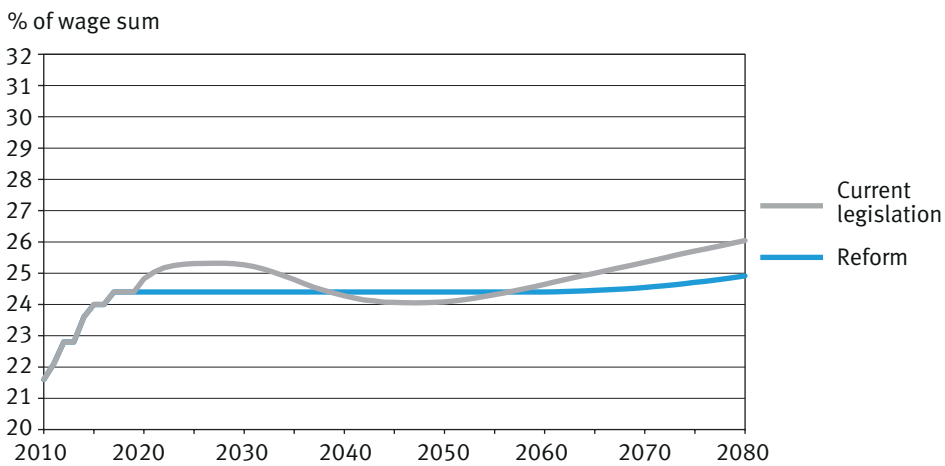


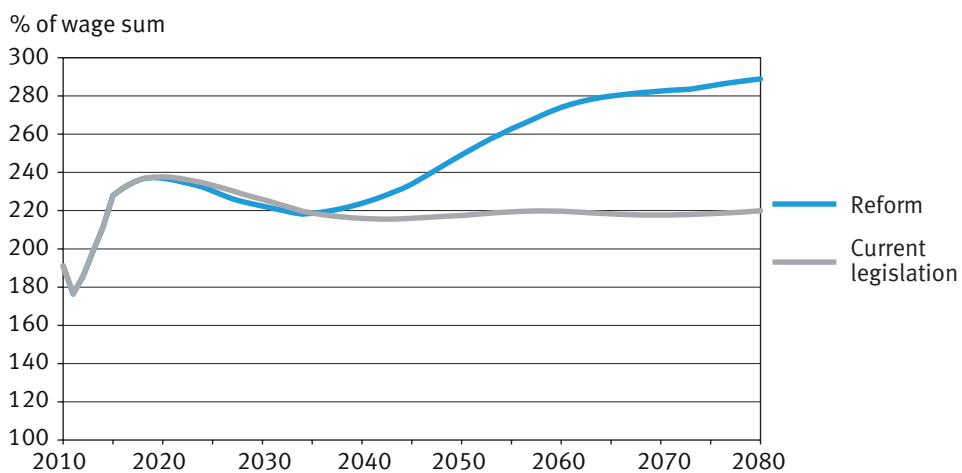
Figure 2.5.

Contribution under Employees Pensions Act relative to wage sum.



Kuvio 2.6.

Assets under Employees Pensions Act relative to wage sum



2.4 Pension size and generational effects

The reform will change many factors that affect the size of pensions. The regulations on how pensions accrue and are determined will change, in addition to which the extended working lives and later retirement will increase the size of pensions. The reform will increase the average pensions of all birth cohorts so that the later the members of a cohort are born, the larger the increase will be. For those born in 1965 or later, the average pensions will grow more than for those born earlier due to the mitigated life expectancy coefficient. As a result of the reform, the average pensions of those born in 1960 will grow by approximately two per cent, while the impact on those born in 1980 will be nearly ten per cent.

Figure 2.7.

Effect of government bill on the average pensions of 75-year-olds⁶

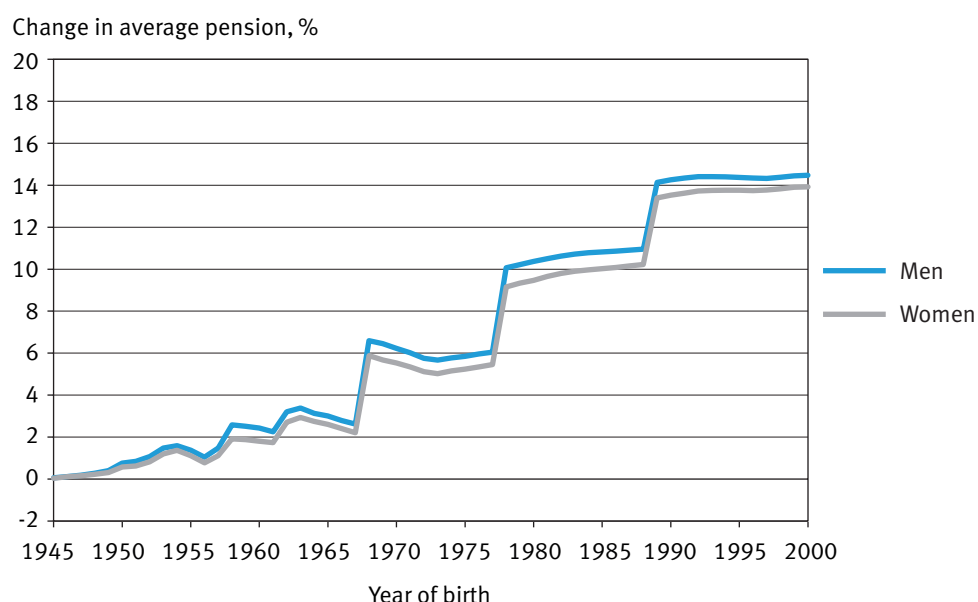
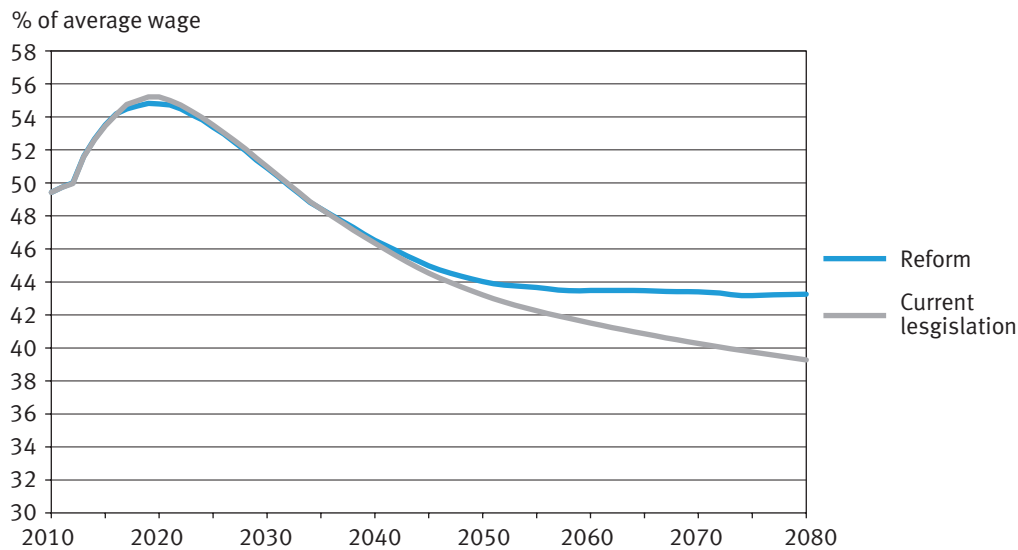


Figure 2.8 presents the development of the average pension relative to the average wage. In the projection under current legislation, the average pension relative to the average wage will continue to grow in the early 2020s, mainly due to the slow growth of the earnings level and the continuing maturation of the earnings-related pension system. Long term, the effect of the life expectancy coefficient will reduce the ratio of the average pension to the average wage. The government bill will expand this ratio by raising the average pension.

⁶ In the projection, the age limits of the pension system will always rise a full year at a time. This is reflected in the graph as notches for the birth cohorts whose retirement age will rise.

Figure 2.8.
Average pension relative to average wages.



When reviewing the generational effects of the reform, we can review not only the average pensions but also the pension income over the entire life span. Such a review also takes into account the average time spent in retirement. Below is an estimate of the effects of the government bill on the capital value of each birth cohort's lifelong pension income and contributions. This method has been described in more detail (in Finnish) in the report *Laskelmia vuoden 2017 työeläkeuudistuksen vaikutuksista* (Kautto and Risku [eds.] 2015). The review includes only the pension benefits and contributions under the Employees Pensions Act and the pension rights that have accrued on the basis of unpaid periods have been omitted. When calculating the capital values, we have used a real interest rate of 3.5 per cent, which is the same as our assumption on the return of pension assets.

On average, the reform will reduce the capital value of pension income of persons born in the 1960s, the 1970s and the 1980s due to the shorter time spent in retirement. The relative change in the pension income of men is larger than in that of women since the relative reduction of the time spent in retirement is higher among men due to their lower life expectancy. The reform will increase the lifelong pension income of those born after the year 1990.

The reform will boost the capital value of the lifelong pension contributions paid under the Employees Pensions Act by those born between 1960 and 2000. This is the case since pension contributions will be paid for a longer period of time due to extended working lives. However, the impact is minor, staying at approximately one percentage point. Working lives of both genders will be extended at a nearly equal pace, so there will be no gender gap in the change of the capital value of pension contributions.

The assessment of the development of paid contributions presented in this projection differs from that in the report *Laskelmia vuoden 2017 työeläkeuudistuksen vaikutuksista* (Kautto and Risku [eds.] 2015). According to the report, the capital value of the pension contributions paid by those born between 1970 and 2000 would be reduced. The difference is mainly due to the updating of the baseline values used in the projection. Due to the good

investment returns in the first half of 2015, the contribution paid under current legislation can be kept at a slightly lower level in this projection compared with that of the previous projection. However, the contribution level of the reform projection is kept at 24.4 per cent, which means that more assets will accrue than in the projections of the previous report. The effects of alternative developments of the contribution under the Employees Pensions Act have been reviewed in chapter 3.

Figure 2.9.

The effect of the government bill on different birth cohorts' lifelong pensions and contributions under the Employees Pensions Act.

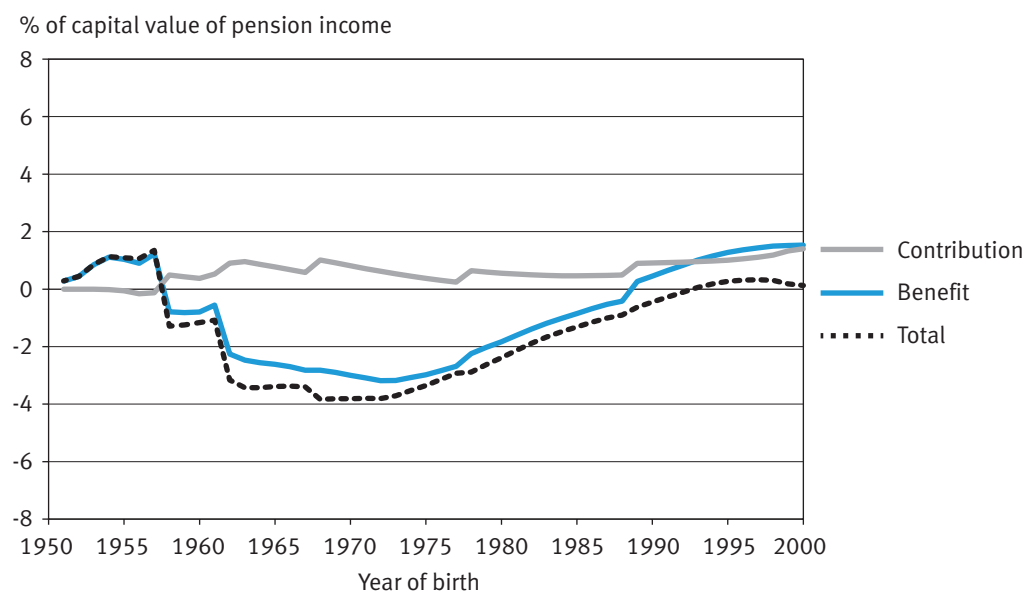


Figure 2.10.

The effect of the government bill on different birth cohorts' lifelong pensions under the Employees Pensions Act, by gender.

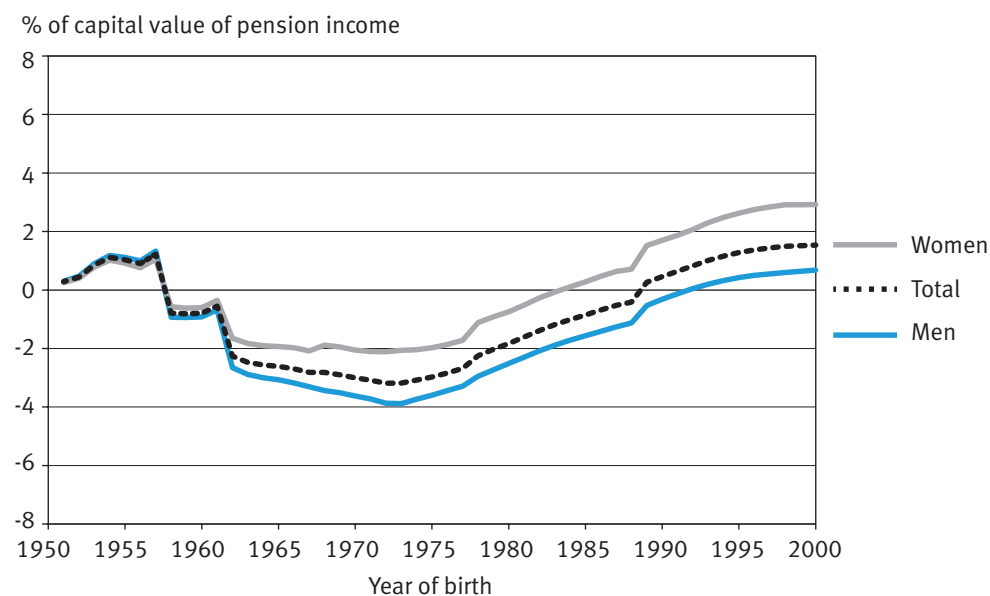
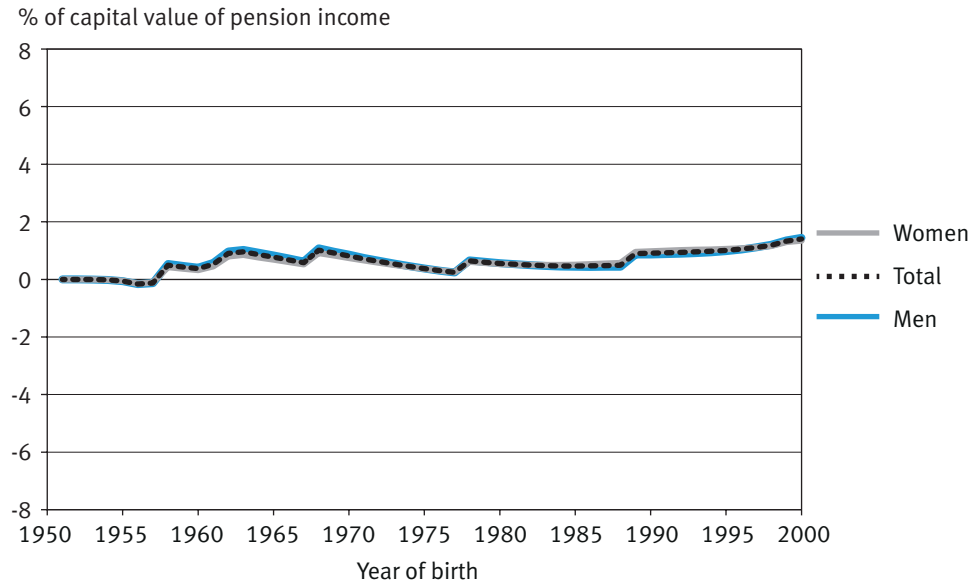
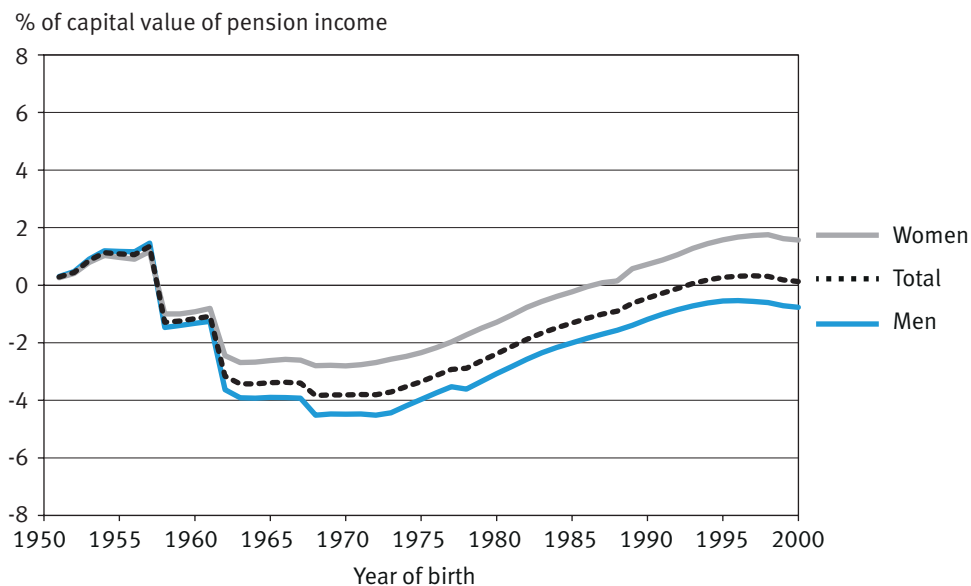


Figure 2.11.

The effect of the government bill on different birth cohorts' lifelong contributions under the Employees Pensions Act, by gender.

**Figure 2.12.**

The effect of the government bill on different birth cohorts' lifelong total pensions and contributions under the Employees Pensions Act, by gender.



2.5 Effect on accrued pension rights

The annual earnings-related pension expenditure consists of pensions accrued in the past. The value of the pensions accrued to a particular point in time is the amount of money which, along with the return, would be enough to cover the pensions accrued by that particular point in time. In addition to pensions in payment, the increments due to indexation and the deferral increment mechanism increments for future pensions have been included in the calculation, as well as the components of future pensions that are based on an already realised working history or already realised periods of social benefits.

The calculation method of accrued pension rights has been presented in Appendix 3 of the Finnish Centre for Pensions' report *Statutory pensions in Finland – long-term projections 2013* (Risku et al. 2014). When making the reform projection, we had to decide how to take the new pension benefits into account. In the reform projection, we have taken the partial early old-age pension and the years-of-service pension into account as accrued pension rights insofar as the pensions in question are based on an already realised working history or already realised periods of social benefits. In the projection under current legislation, we have not taken the part-time pension into account when calculating the accrued pension rights.

The interest used to discount future pension income significantly affects the value of accrued pensions. Table 2.5 presents the value of accrued pensions, using a real discount rate of 3.5 per cent. This interest rate corresponds to the expected return of pension assets in the baseline projection.

The effect of the government bill on accrued pensions will be minor as different factors will affect in different directions. The raising of the retirement age will reduce the value of pensions accrued since the raising of the retirement age will not be taken into account from the beginning when determining the life expectancy coefficient. The value of the accrued pensions, on the other hand, will rise due to, for example, the increment for deferred retirement granted after reaching the earliest eligibility age and the partial early old-age pension, which will replace the part-time pension.

At year-end 2014, the accrued pensions in the projection under current legislation amount to EUR 604.8 billion, while they amount to EUR 606.8 billion in the projection based on the reform. The corresponding figures would be EUR 713.1 billion and EUR 716.8 billion when using a real discount rate of 2.5 per cent.

Table 2.5.

Value of accrued pensions and pension assets in 2014, real discount rate 3.5%, money amounts in billion euros at current prices.

	Employees Pensions Act	State Employees Pensions Act	Local Government Pensions Act	Private	Public	Total ⁷
Pension assets per 31 Dec. 2014	109.6	17.6	42.3	110.8	62.8	173.6
Wage sum in 2014	52.3	6.5	16.7	58.9	24.1	82.9
Pensions accrued by 31 Dec. 2014						
Current legislation	349.7	85.4	114.7	394.5	207.3	604.8
Reform	349.7	86.4	115.5	394.6	209.3	606.8
Difference, EUR billion	0.0	1.0	0.9	0.1	2.0	2.0
Funding rate per 31 Dec. 2014						
Current legislation	31.3 %	20.6 %	36.9 %	28.1 %	30.3 %	28.7 %
Reform	31.3 %	20.4 %	36.6 %	28.1 %	30.0 %	28.6 %
Difference, percentage points	0.0	-0.2	-0.3	0.0	-0.3	-0.1

⁷ Includes the private and public sector, as well as the Act on Compensation for Pension Accrual from State Funds for Periods of Childcare and Periods of Study. The supplementary pensions under the former Employees' Pensions Act and the special pensions for farmers are not included in the figures.

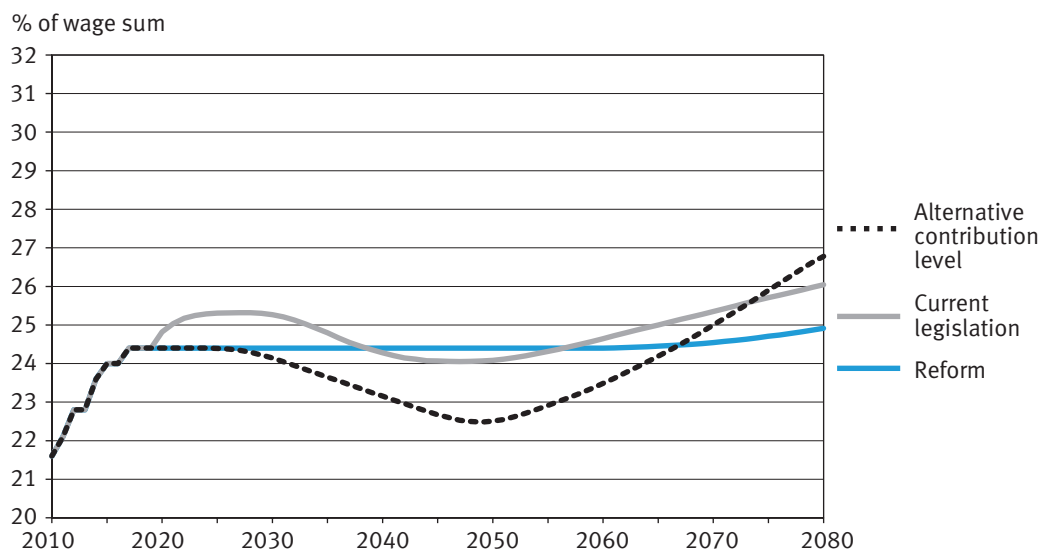
3 Alternative contribution level under the Employees Pensions Act

The government bill will reduce the pension expenditure under the Employees Pensions Act relative to the wage sum. This would allow for a lower contribution level than in the projection according to current legislation. In the consequence analysis we have aimed at keeping the contribution level at 24.4 per cent for as long as possible, which means that a considerably higher amount of assets under the Employees Pensions Act will accrue than in the projection based on current legislation. In addition, higher investment returns have traditionally led to a lower contribution level in the projections. Keeping to a set contribution level means, however, that the higher investment returns will result in a growth of pension assets.

Alternatively, the contribution can be defined so that the assets do not grow significantly compared with the projection under current legislation. Figure 3.1 presents the development of the contribution under the Employees Pensions Act in the reform projection in which the amount of assets relative to the wage sum has been kept at a level of the projection under current legislation⁸. Figure 3.2 presents the development of the assets under the Employees Pensions Act in the same projection.

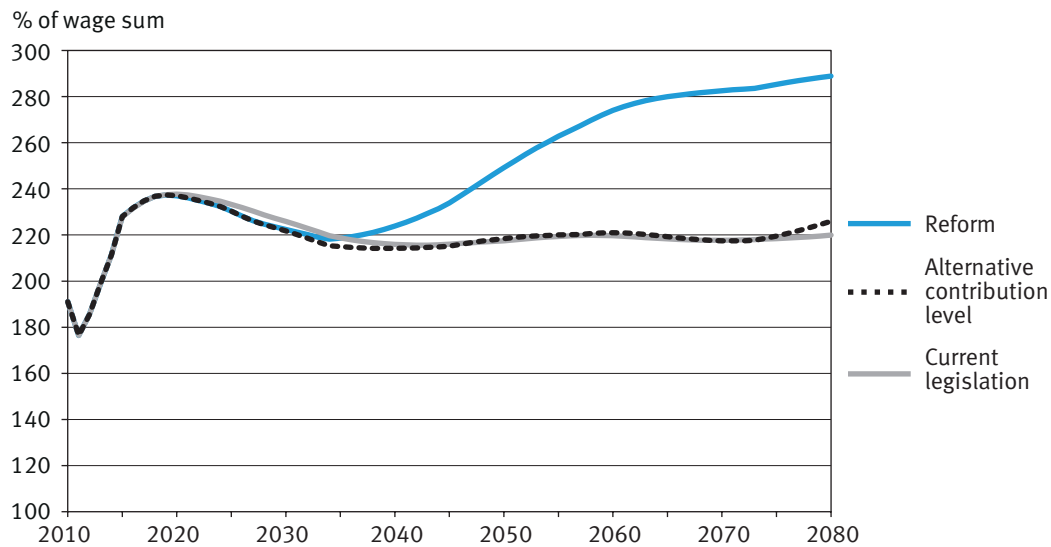
Figure 3.1.

Contribution under Employees Pensions Act relative to wage sum.



⁸ Another alternative would be to set the funding rate for pensions, i.e., the amount of assets relative to the accrued pension rights, to the level of the projection under current legislation. The selected alternative results in a slightly higher funding rate because, medium-term, the pension expenditure relative to the wage sum is smaller in the reform projection than in the projection under current legislation.

Figure 3.2.
Assets under Employees Pensions Act relative to wage sum.



If the contribution is kept at 24.4 per cent, as presented in chapter 2 on the generational effects of the reform, the lifelong contributions paid under the Employees Pensions Act will be higher. When reviewing the generational effects, however, we have not taken into account that a considerably higher amount of assets under the Employees Pensions Act will accrue in the reform projection compared with the projection under current legislation. That means that the financial standing of the Employees Pensions Act is significantly better.

Figure 3.3.
The effects on different birth cohorts' lifelong pensions and contributions under the Employees Pensions Act

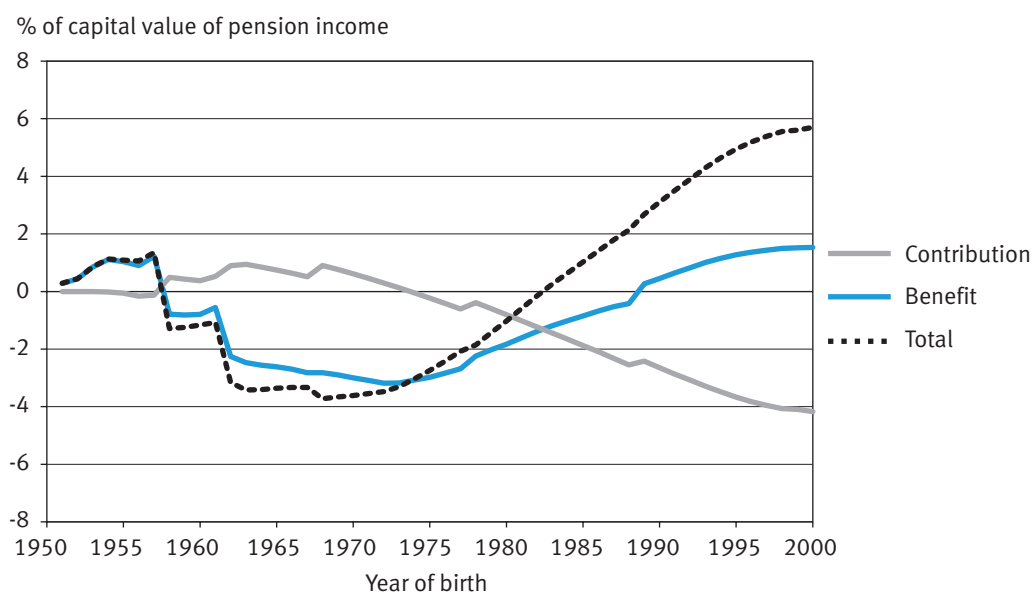


Figure 3.3 presents the generational effects of the pension reform when comparing the projection under the current legislation and the reform projection with an alternative contribution level. The effects on pension benefits correspond to those presented in chapter 1, but the capital value of lifelong contributions under the Employees Pensions Act will be lower for people born after the early 1970s.

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The Finnish Centre for Pensions is a statutory co-operation body, expert and producer of joint services for the development and implementation of earnings-related pension provision. The aim of our research is to produce high-quality, widely applicable information for the evaluation and development of pension provision.

Eläketurvakeskus on työeläketurvan kehittämisen ja toimeenpanon lakisääteinen yhteistyöelin, asiantuntija ja yhteisten palveluiden tuottaja. Tutkimustoiminnan tavoitteena on tuottaa korkeatasoista ja laajasti hyödynnettävää tietoa eläketurvan arvioimiseen ja kehittämiseen.

Pensionsmyndigheten är ett lagstadgat samorgan och sakkunnig inom verkställigheten och utvecklingen av arbetspensionsskyddet. Vi producerar gemensamma tjänster för arbetspensionssystemet. Vår forskning har som mål att ta fram högklassig information som nyttiggörs på bred front vid bedömningen och utvecklingen av pensionskyddet.

