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**THE AGEING CHALLENGE IN NORWAY: ENSURING A SUSTAINABLE PENSION AND WELFARE SYSTEM**

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by  
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## ABSTRACT

### **The ageing challenge in Norway: ensuring a sustainable pension and welfare system**

Norway will face a fast maturing old age pension scheme over the 30 next years whereas oil revenues will supply only a part of implicit liabilities related to the present generation. This working paper examines the recently proposed new measures to strengthen long term fiscal sustainability in Norway. Even though a broad agreement was reached in the parliament on the proposed principles of pension reform, crucial elements are still under discussion, among these the decision on a flexible retirement age based on actuarially fair notional accounts and the strength of the link between income and benefits. Estimated savings arising from strengthened work incentives introducing a longevity coefficient and less generous indexation are three percentage points of GDP over the long term compared to an expected nine percentage points of GDP financing gap for welfare spending. For the proposals to have maximum impact, public subsidies to existing early retirement schemes should be removed and eligibility for disability pensions and long-term sick leaves tightened.

This paper relates to the 2005 OECD Economic Survey of Norway ([www.oecd.org/eco/survey/norway](http://www.oecd.org/eco/survey/norway)).

*JEL classification:* H53, H55, J11, J26

*Keywords:* Fiscal sustainability; Pension reform; Sick leave; Disability; Work incentives; Norway

## RESUME

La Norvège va devoir faire face à des régimes sociaux arrivant rapidement à maturité alors que les recettes pétrolières ne couvriront plus qu'une partie des engagements implicites liés à la génération actuelle. Ce document de travail étudie les nouvelles mesures récemment proposées pour renforcer la soutenabilité des finances publiques en Norvège. Si un accord a été récemment conclu au parlement sur les principes d'une réforme des retraites, des éléments fondamentaux sont encore à l'étude, parmi lesquels la décision d'instaurer un âge flexible de départ en retraite basé sur des comptes notionnels instaurant une plus grande équité actuarielle, et de renforcer le lien entre pensions et revenus. Ces dispositions, qui conjuguent des incitations à travailler plus longtemps et une formule d'indexation moins généreuse, permettraient d'économiser l'équivalent de trois points de pourcentage du PIB sur le long terme, alors que les besoins de financement attendus concernant les dépenses sociales s'élèvent à 9 points de pourcentage de PIB. Pour que ces propositions aient un maximum d'impact, il faudrait aussi supprimer les aides publiques aux régimes de retraite anticipée et durcir les critères d'attribution des pensions d'invalidité et des congés maladie de longue durée.

Ce document de travail se rapporte à l'Etude économique de l'OCDE de la Norvège 2005 ([www.oecd.org/eco/etudes/norvege](http://www.oecd.org/eco/etudes/norvege))

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Mots clés: soutenabilité des finances publiques ; réforme des retraites ; congés de maladie ; invalidité ; incitations au retour à l'emploi ; Norvège

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## THE AGEING CHALLENGE IN NORWAY: ENSURING A SUSTAINABLE PENSION AND WELFARE SYSTEM

by Benoît Bellone and Alexandra Bibbee <sup>1</sup>

### Introduction

1. Norway, like most OECD countries, will face a significant ageing of its population over coming decades. In addition to purely demographic factors, social spending is expected to grow as a result of continued maturation of the earnings-related second tier pension which was created in 1967. At the same time Norway – as the world's third largest oil exporter – is virtually unique in being able to look forward to an ample financial cushion via cumulating fiscal surpluses in a state petroleum fund. This paper asks whether the pension and old age welfare system is fiscally viable as it now stands. The answer is that it is a long way from sustainability, even if the entire revenue of the petroleum fund were devoted to satisfying future pension promises and maintaining current standards of health care as the ratio of retirees to workers people rises. Therefore, reforms are both necessary and urgent. They must aim at reducing the future budgetary costs of ageing while also boosting the potential growth rate of the economy, notably by encouraging longer and fuller working lives.

2. At first glance, Norwegian pensions do not seem particularly generous or distorting: replacement rates under the public PAYG scheme are moderate by OECD (and especially European) standards, and the statutory retirement age is a praiseworthy 67. Moreover, recent parametric reforms introduce an inverse life expectancy adjustment factor to benefits and index them to an average of wages and prices, rather than wages alone. Because the participation rate is so high in Norway, pension spending as a ratio to GDP should be relatively high at full system maturity, but worker contributions should also be relatively high. The main problem lies in the ancillary income support schemes, notably early retirement, disability, and sick leave, which feature easy access and generous benefits. There are also many contribution exemptions for social reasons, and as separate pension accounts do not exist, these subsidies are non transparent.

3. Many schemes related to the NIS may lead to a high implicit tax on continued work, even though their original intention was to help the sick and the disabled, or the very tired. As documented in Duval (2003), high disability rates for ages between 55 and 60 might be explained by one of the four highest implicit tax rates in the OECD on continued work related to this scheme. As pension and disability benefits are taxed at a lower rate than income from work, this again strongly skews incentives against work, especially for the same category of workers. And despite recent falls, sick leave is still very high. Indeed,

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1. Benoit Bellone and Alexandra Bibbee are members of the Country Studies II Division in the Economics Department. This paper is based on work originally prepared for the OECD *Economic Survey of Norway* 2005 published under the responsibility of the Economic Development and Review Committee. They are grateful to Nick Vanston, Val Koromzay, and Knut Moum for helpful comments. They would also like to thank Sylvie Foucher for statistical assistance and Hervé Bource for secretarial assistance.

there are still good reasons to choose sickness leave, which pays 100% of income (up to a ceiling) for up to one year. The early retirement scheme (AFP) was introduced in 1989 in order to address the needs of people with long work histories and low skill jobs, but the pensionable age in this scheme was gradually lowered during the 1990s and eligibility was widened to include wide categories of workers. Academic research has focused on the coherence of the National Insurance System (NIS) old age pension and early retirement schemes, and shows that under current rules, a relatively high minimum pension benefit and a weak link between contributions and pensions introduce strong incentives for low and middle-income earners to retire early at the age of 62.<sup>2</sup>

4. Consequently, even though Norway boasts the highest OECD employment ratios for older workers (aged 55 to 64),<sup>3</sup> employment rates fall sharply with age, particularly from age 62. In the 1990s, employment rates increased on average, but fell for those aged 62 and older. Despite a tight labour market, since 1995 the average number of hours worked has fallen at least five hours per week for both prime and 55-59 aged workers. The drop has even been sharper for workers aged 60-64 (OECD 2004b). The average retirement age has steadily fallen from roughly 68 in the mid-1980s to close to 62 today. Further including the rise in the number of disability pensioners thanks to an easily accessible and generous scheme,<sup>4</sup> the effective age of labour market exit has reached a low of 59-60 in 2004, among the lower ones in the OECD. If these trends were to continue, age-specific employment rates are likely to develop less favourably in Norway than in the OECD at large.

5. Norway has moreover lagged behind the rest of the OECD in the area of pension reform, partly because the need for savings seems less pressing as the system is still immature and spending relatively modest. And it is using pension system immaturity to fund other current spending rather than future pension obligations. There may also be a moral hazard of vast budget surpluses and a fast rising petroleum fund. But even though ageing pressures lie mostly in the future, it is critical to reform the pension benefit system now, before acquired rights start to accumulate as the populous cohorts born after WWII enter the vulnerable ages for early retirement and disability pensions. Because of the constraint of guaranteed rights, pension reform seems more urgent than any other, including health care and other reforms which could still be dealt with in future budgets. The 2004 Pension Commission report and the previous government's May 2005 reform proposal are timely and go in the right direction, but important decisions remain to be made, while there has been a change of government in October 2005.

6. As a major pension reform is still under discussion in Norway, this working paper mainly focuses on retirement pensions, disability pensions, sick leave and rehabilitation schemes (the normal prelude to disability).<sup>5</sup> The paper is organised as follows. The first part treats the issue of fiscal sustainability in light of ageing pressures, giving the main macro context for the adjustment that is required. The second part looks at the various institutional arrangements for old age and infirmity income support, with particular emphasis on their implications for work incentives. The final section draws the main implications for reform, stressing the need to move toward actuarial fairness in the public pension system as proposed in the 2005 White Paper and furthermore to adapt the other old age welfare programmes to the same principles, allowing an internally coherent and sustainable system.

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2. In 2003, households earning less than 137 000 NOK (€16 700) per year could not increase their pension benefits if they were to work beyond 62.

3. With the exception of Iceland and Switzerland, and Sweden in the case of women.

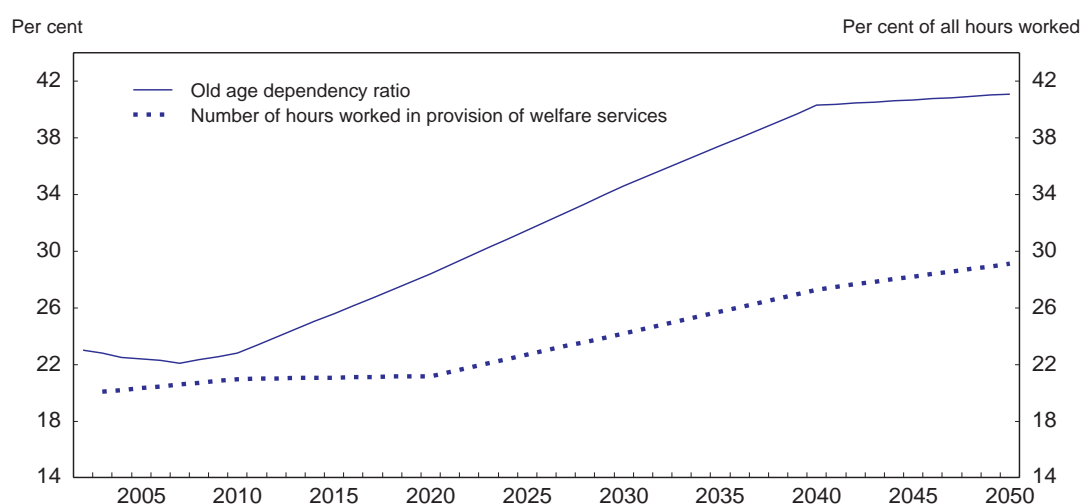
4. Eleven per cent of the working population and a third of those over 55 are now on disability pension.

5. Health care and long term care challenges are analysed in detail by Bibbee and Padrini (2005).

## Ageing, social benefits, and fiscal sustainability

7. As regards ageing issues, Norway starts out from a highly favourable position. Employment rates for older people are among the highest in the OECD, pension expenditure is relatively low, and pensioners currently enjoy reasonable replacement rates. However, Norway, like most OECD countries, will experience a significant ageing of its population in the next decades. The proportion of those 65 or older will increase from around 15% of the population to 24% by 2040. The old-age dependency ratio (those 65 and older relative to those 15-64) is then expected to almost double reaching 40% by 2040, as compared with more than 50% for the OECD, and induce a major shift of resources toward services for the aged (Figure 1). On the basis of current rates of labour force participation, the ratio of workers to “retirees” (*i.e.*, all persons aged 50 and over who are not in the labour force) is projected to decline from almost 3 to 1 in 2000 to just over 1.7 to 1 in 2050. The growth of the working age population will slow from almost 1% per year currently to close to zero by 2050. Norway therefore faces a risk over the next few decades of slower economic growth, pronounced labour shortages and rising tax rates to finance a greater volume of services for, and transfers to, the older generation.

**Figure 1. The old age dependency ratio<sup>1</sup>**



1. The projections are based on the Norwegian medium population projection scenario. This assumes a fertility rate of 1.8 per woman per year from 2005 and an annual net immigration of 13 000 from 2004 to 2050.

Source: Statistics Norway, 'Population projections for Norway, 2002-2050'.

## Long term deficits among the highest in the OECD

### *Ageing costs and how to pay for them*

8. In addition to the purely demographic factors, pension expenditures are expected to grow as a result of the continued maturation of the earnings-related, pay-as-you-go second tier which was created in 1967, relatively recently in OECD terms. Growing female labour force participation since the 1970s has prolonged the maturation process. The influx of women into the labour market has so far boosted fiscal receipts by more than it has increased spending, so that current spending on public old-age pensions, at around 7% of GDP, is quite low compared with most other OECD countries. However, when these large economically active cohorts eventually retire they will receive much higher benefits than previous generations, and most people of pension age will by then be entitled to full public old-age pensions. Pension spending will start to rise quickly. Previous OECD estimates have anticipated an extremely large rise in old-age spending, compared with other OECD countries (see Table 1), putting Norway at the

forefront of the countries most challenged by ageing. According to the latest national estimates, adding old age and disability pensions, the gap between spending and revenues, absent reforms, would rise by about 10% (from 9.5% to 19.3%) of mainland GDP by 2050.<sup>6</sup> - assuming no significant further rise in the number of disabled or early retirees and disregarding altogether the increasingly costly pay-as-you-go central government occupational pension scheme. The rise in health costs including technology developments and long term care for the elderly is harder to estimate but according to the government could be as high as 4 percent points of GDP; the latest OECD estimates are 3½ per cent<sup>7</sup>. Adding in health costs would bring the expected total rise in age-related spending to some 14-15% of mainland GDP, with risks probably on the upside. This is very far in excess of any plausible rise in permanent revenue from the Petroleum Fund, even under optimistic assumptions regarding oil prices and financial market outcomes. And even if reforms under discussion are implemented, the rise in pension and health spending would still outstrip the capacity of the Petroleum Fund to finance it.

9. Typically there are four ways of addressing this problem: *i)* “pre-fund” the future financing gap by building up assets or drawing down debts in the present; *ii)* do nothing now and plan to raise taxes in the future to cover the gap then; *iii)* pension and health care reforms to reduce future expenditure growth; and *iv)* broad structural reforms to raise future output growth, raising the denominator of the gap. Most countries in the OECD have adopted a mixed approach, with decidedly less emphasis on the second option of doing nothing and raising taxes later since taxes are already sub-optimally high in many countries and raising them would further harm growth.<sup>8</sup>

*Oil revenue should alleviate the burden but does not obviate the need for reform*

10. The financing gap in Norway will not necessarily increase as much as indicated by the expenditure figures. Thanks to booming oil revenues, Norway has since 1996 run huge surpluses on the central government budget that have been transferred to the “Government Petroleum Fund” (GPF) and invested in international capital markets (see Box 1). This could be seen as a form of pre-funding of future pension liabilities, although it is not clear to what extent the oil fund serves as a pension fund.<sup>9</sup> In the official baseline scenario, the permanent income from this fund is expected to reach about 6 percentage points of GDP by 2050, implying a net financing gap on spending of around 5 percentage points of GDP by 2050, which will continue to widen as the pension system continues to mature beyond 2050 (Figure 2). However, this presupposes discretionary spending reforms to free up the current uses of oil money of around 5% of GDP. In the absence of such reforms, only about 1% extra leeway can be expected from rising future oil fund revenues, raising the financing gap. Moreover, health spending is certain to rise in response to ageing pressures. Thus, reforms to both curb the rise in future pension outlays and close the starting point non-oil deficit gap are imperative (Table 2).

---

6. The government should issue a White Paper in autumn 2005 on long term care with maybe some new proposals. Some preliminary estimates indicate that health and long-term care expenditures could add 1 to 4 percentage points of Mainland GDP to the long term net financing gap in 2050, an amount quite comparable to other European countries and to previous OECD estimates. Recent projections of Statistics Norway have made the assumption that no changes take place in standards and coverage ratios of public services beyond already approved reforms. This implies that the growth in private consumption per capita involves privatisation of services traditionally provided by the government sector in Norway, including long term care.

7. See Duval (2003).

8. This is also the least “generationally fair” of the options, as it puts a heavy burden on future workers to pay for the retirements of the much larger numbers of current workers.

9. It should be noted that, unlike most pension funds, the capital of the fund cannot be dedicated to meeting future pension obligations, only its expected real return of 4%, given the fiscal rule.



**Table 1. Projections of age-related spending 2000-2050**  
Levels in % of GDP, changes in percentage points

	Total age-related spending		Old-age pensions		“Early retirement” programmes		Health care and long-term care		Child/family benefits and education	
	Level 2000 (1)	Change 2000-50 (2)	Level 2000 (3)	Change 2000-50 (4)	Level 2000 (5)	Change 2000-50 (6)	Level 2000 (7)	Change 2000-50 <sup>2</sup> (8)	Level 2000 (9)	Change 2000-50 (10)
Australia	16.7	5.6	3	1.6	0.9	0.2	60.8	6.2	6.1	-2.3
Austria <sup>2</sup>	[10.4]	[2.3]	9.5	2.2	..	..	[5.1]	[3.1]	..	..
Belgium	22.1	5.2	8.8	3.3	1.1	0.1	6.2	3	6	-1.3
Canada	17.9	8.7	5.1	5.8	..	..	6.3	4.2	6.4	-1.3
Czech Republic	23.1	6.9	7.8	6.8	1.8	-0.7	7.5	2	6	-1.2
Denmark <sup>3</sup>	29.3	5.7	6.1	2.7	4	0.2	6.6	2.7	6.3	0
Finland	19.4	8.5	8.1	4.8	3.1	-0.1	8.1	3.8	..	..
France <sup>4</sup>	[18.0]	[6.4]	12.1	3.9	..	..	[6.9]	[2.5]	..	..
Germany	[17.5]	[8.1]	11.8	5	..	..	[5.7]	[3.1]	..	..
Hungary <sup>5</sup>	7.1	1.6	6	1.2	1.2	0.3	..	..	..	..
Italy	[19.7]	[1.9]	14.2	-0.3	..	..	[5.5]	[2.1]	..	..
Japan	13.7	3	7.9	0.6	..	..	5.8	2.4	..	..
Korea	3.1	8.5	2.1	8	0.3	0	0.7	0.5	..	..
Netherlands <sup>6</sup>	19.1	9.9	5.2	4.8	1.2	0.4	7.2	4.8	5.4	0
New Zealand	18.7	8.4	4.8	5.7	..	..	6.7	4	7.2	-1.3
<b>Norway</b>	<b>17.9</b>	<b>13.4</b>	<b>4.9</b>	<b>8</b>	<b>2.4</b>	<b>1.6</b>	<b>5.2</b>	<b>3.2</b>	<b>5.5</b>	<b>0.5</b>
Poland <sup>5</sup>	12.2	-2.6	10.8	-2.5	1.4	-0.1	..	..	..	..
Spain	[15.6]	[10.5]	9.4	8	..	..	[6.2]	[2.5]	..	..
Sweden	29	3.2	9.2	1.6	1.9	-0.4	8.1	3.2	9.8	-1.2
United Kingdom	15.6	0.2	4.3	-0.7	..	..	5.6	1.7	5.7	-0.9
United States	11.2	5.5	4.4	1.8	0.2	0.3	2.6	4.4	3.9	-1
Average of countries above <sup>7</sup>	21.2	5.8	7.4	3.4	1.6	0.2	5.9	3.1	6.2	-0.9
Portugal <sup>8</sup>	15.6	4.3	8	4.5	2.5	-0.4	..	..	..	..

1. Data for health care shown in parenthesis are drawn from EPC (2001). They are the result of an EC exercise using a common methodology for all countries. The projections are based on the same macroeconomic assumptions as in the OECD (2001a) Table 3.1. These health and long-term care projections assume that costs *per capita* rise in line with productivity/wages. They do not allow for technological change or other non-age-related factors.
2. Total pension spending for Austria includes other age-related spending which does not fall within the definitions in Cols. 3-10. This represents 0.9% of GDP in 2000 and rises by 0.1 percentage point in the period to 2050.
3. Total for Denmark includes other age-related spending not classifiable under other headings. This represents 6.3% of GDP in 2000 and increases by 0.2 percentage points from 2000 to 2050.
4. For France, the latest available year is 2040.
5. Total includes old-age pension spending and “early retirement” programmes only.
6. “Early retirement” programmes only include spending on persons 55+.
7. Sum of column averages. OCDE average excludes countries where information is not available and Portugal where the data are less comparable than for other countries.
8. Portugal provided an estimate for total age-related spending but did not provide expenditure for all of the spending components.

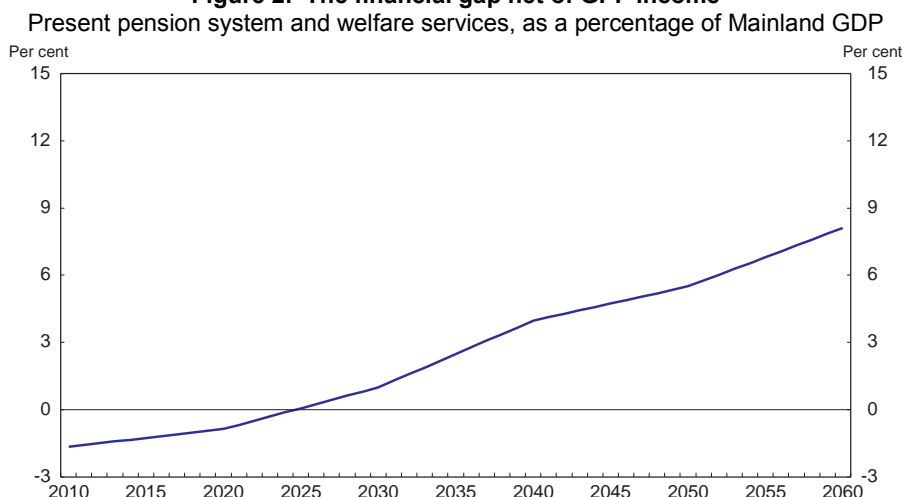
Source: Casey *et al.* (2003).

### Box 1. The Government Petroleum Fund

The Government Petroleum Fund (GPF) was established in 1990 to build up financial reserves in order to preserve an equitable share of the present petroleum revenues for future generations and decades, and to prevent short-term fluctuations in the oil price from influencing spending in the current and next year's budget. It remained empty until 1996, as a result of the recession of the early 1990s, but has seen a rapid build-up in assets in recent years. As supported by previous OECD Surveys (e.g., OECD 2004a), the government has recently merged the GPF and National Insurance Scheme fund into a "Pension Fund". Its real return can be seen to provide a partial pre-funding of future pension liabilities. This fund is mainly a transformation of depleting resources (oil and gas) into financial assets. As this wealth belongs in theory to present and future Norwegian generations, the capital stock should be preserved, and only the returns consumed, to allow future generations their own choices in allocating these earnings.

As a monetary policy tool (by sterilizing foreign capital inflow and preventing any appreciation due to oil revenue), the GPF also prevents any sharp moves of the Norwegian Krone. The fund is managed by Norges Bank, but separated from the management of official currency reserves and from ordinary central bank functions. According to the investment guidelines issued by the Ministry of Finance, the fund's capital is invested exclusively in foreign financial assets; 50 to 70% of the portfolio is allocated to fixed-income assets and 30 to 50% to equities. The fund is geographically diversified with roughly 40 to 60% invested in Europe, and 60 to 40% in the Americas, Asia and Oceania. The ministry sets a benchmark portfolio and determines the maximum investment risk the Bank is allowed to take. The value of the fund was NOK 357 billion in 1998, and has risen to NOK 1012 billion (75% of mainland GDP) by end 2004. Total return on the GPF over the last two years has been 22.6% primarily reflecting high returns in equity markets. For the period 1997 to 2004, the average annual real return was 4.0% after deducting management costs. In 2004, new ethical guidelines were adopted in the allocation of the fund's international investments.

**Figure 2. The financial gap net of GPF income**



Source: Ministry of Finance .

**Table 2. The fiscal adjustment**  
(as % of mainland GDP; pre-reform)

	2005 <sup>1</sup>	2050 <sup>2</sup>	Change
Fiscal balance	14	0	-14
Oil	19	6	-13
Non-oil	-5	-6	-1
Pension <sup>3</sup>	-7	-13	-6
Other	2	7	5

1. Structural, based on May 2005 budget estimates.
2. Fiscal balance set at "steady state" level needed to ensure stabilisation of government net asset position. Oil revenue set equal to permanent income from GPF, assuming \$35 oil price in the long run.
3. Total spending on old age, early retirement, and disability pensions net of pensioner tax payments (assumed at 30%).

Source: OECD estimates.

11. Normally, immature pension systems generate strong surpluses insofar as contributions considerably exceed outlays while the system is expanding, which in turn is a form of pre-funding insofar as this raises government net assets, *ceteris paribus* (this should be true whether or not separate pension accounts exist or are subsumed into general taxation and spending as in Norway). However in Norway, region-specific reductions in employer social contributions are widely used as a particularly non-transparent form of regional aid, which essentially precludes such a form of pre-funding. This is also consistent with the fiscal rule, which sets an upper limit on allowable asset build-up. Nevertheless, lowering taxes now leaves scope for raising them later, on richer future generations.

*Structural reforms are necessary*

12. Pension reforms can be a very powerful method of adjustment, because they not only reduce spending directly, but can also be designed to extend the age of retirement and boost labour supply, hence raising growth and fiscal revenues as well. Measures that reduce the “generosity” of pensions also create incentives to work longer, or more continuously before retirement, in order to earn an adequate pension income. Some studies show that working longer is associated with better health due to continuing social interactions and a less rapid deterioration of mental capacity. In any event, despite rising productivity, retiring earlier while living longer is not acceptable from society’s point of view, as it puts a large and growing burden on the economically active.<sup>10</sup> At the same time, people who have already worked many years in possibly arduous jobs and can expect lower life expectancy can be given consideration by tying pension benefits more closely to contribution years than to chronological age. The Pension Commission in Norway has proposed an old-age pension reform along these lines, which could lower the estimated financing gap by some 2-3% of Mainland GDP mainly via direct spending effects. The Government followed up the proposals in a White Paper, and important elements were supported in Parliament. However, much remains to be done before a comprehensive pension reform is in operation. Obtaining the full benefits of a labour supply response would require coherent reforms in early retirements, public occupational pensions, and disability pensions.

13. Finally, the fiscal rule implies an increase in the non-oil structural deficit from around 4% of GDP on average over the past three decades (*i.e.*, since oil started to be exploited) to nearly 8 % by 2030, *i.e.* virtually a doubling. It is important that the expanding budget constraint not be permitted to relax efficiency in the public sector or to subsidise non-working via unreformed transfer schemes. This would amount to an erosion of forward looking policies, and even if the fiscal rule is adhered to and the capital of the oil fund is preserved as planned, there would in this case be an offsetting implicit liability handed down to future workers in the form of tax rises without which it would be very difficult to close the financing gap. Even though the fiscal rule in itself implies a *de facto* pre-funding component (given the assumptions underlying the government’s long term baseline), it will be necessary to curb other spending components or increase income by an amount equal to 5 percentage points of Mainland GDP during the next half century. This may require reducing the public’s expectations about the uses of oil wealth at an earlier rather than later stage.

**The Norwegian welfare and old age income support systems**

14. Workers and residents in Norway benefit today from a widespread welfare state. Persons insured under the National Insurance Scheme (NIS), the main general social insurance system in Norway, are entitled to old-age, survivor’s and disability pensions, rehabilitation benefits, medical benefits during sickness, maternity or adoption leave, family allowances and unemployment benefits. As shown in Figure 3, Norway appears a relatively median spender in term of social benefits, and quite comparable to

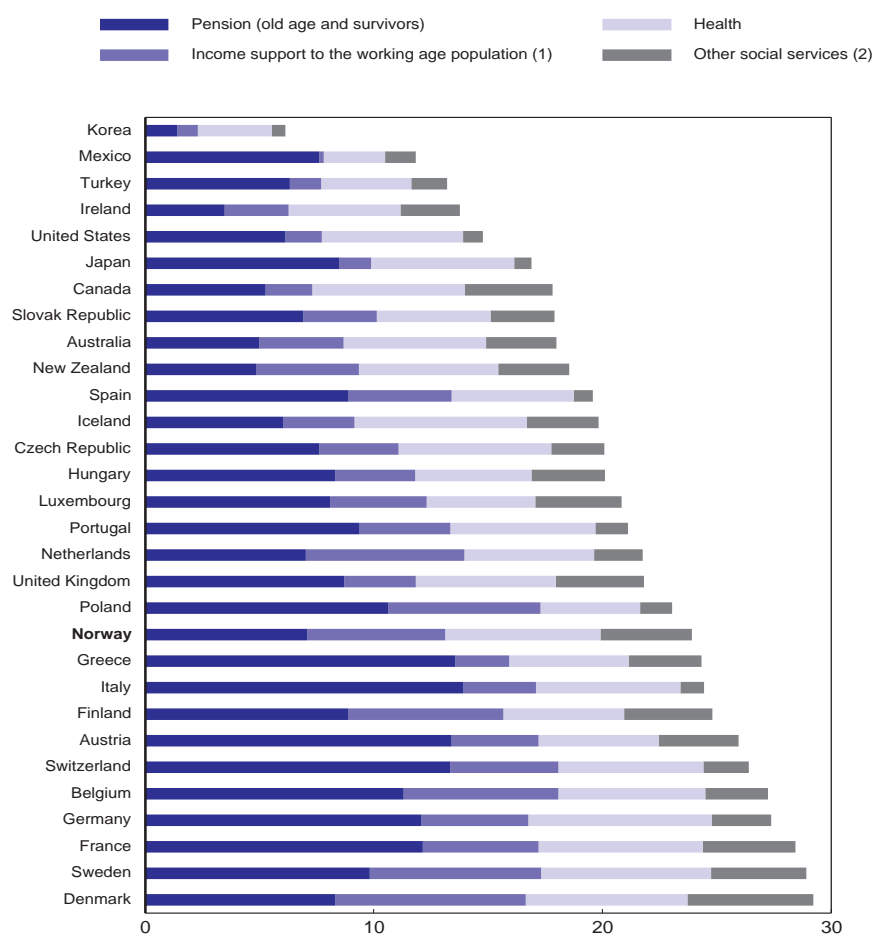
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10. See, *e.g.*, Leibfritz (2003).

Nordic countries when expenditures are expressed as a percentage of Mainland GDP.<sup>11</sup> The NIS is fully integrated in the central government budget and is not, as in most other OECD countries, a separate social insurance scheme with contribution rates linked to outlays.

15. Retirees in Norway can receive income from up to three main sources: the Norwegian old age public pension scheme, managed by the National Insurance System (NIS); the private (but publicly subsidised) early retirement scheme *Avtalfestetpensjon* (AFP) and its public sector counterpart, and various occupational pension regimes.

**Figure 3. Public social benefits in OECD countries**  
% of GDP, 2001



1. Income support to the working age population includes incapacity (disability and sickness), active labour market policies and unemployment benefits.
2. Other includes family and housing benefits.

Source: OECD, Social Expenditure Database.

11. The development of the welfare state may be strongly influenced by recent development of oil prices, when expressed as a share of GDP. Government expenditure stood at 30% of GDP in the 1960's, and increased gradually to over 50% at the beginning of the 1990s. It has later fallen to just over 40 percent because of strong growth in oil revenues and GDP in recent years.

*The NIS public pension*

16. The NIS public pension is a pay-as-you-go defined benefit scheme which consists of *a*) a minimum pension (a flat-rate basic pension plus a means tested special supplement) and *b*) a non-actuarial earnings-based supplementary pension, all integrated in the state budget. The NIS old-age pension scheme has its historical roots in the Scandinavian tradition for redistributive minimum protection in old-age, and mimics technical aspects of the old Swedish ATP-scheme. Its main features, pre-reform, are:

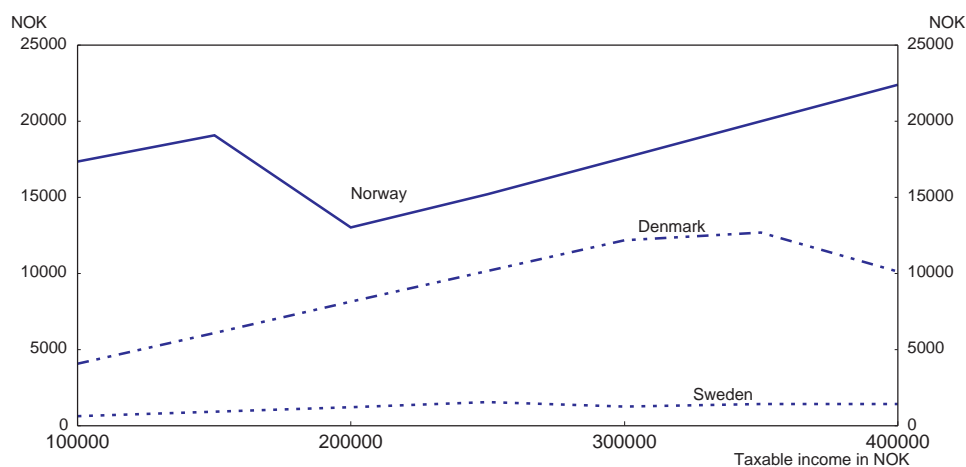
- The minimum pension and the supplementary pension can be claimed only at 67 years of age;
- The minimum pension is paid to all residents with at least 3 years of earnings history between the ages of 16 and 66;
- The supplementary pension is based on a points system, with full benefits calculated on the best 20 earning years, conditional on 40 years of contributions. Benefits are reduced proportionately for shorter work histories and there is a cap on benefits at higher incomes;
- The minimum pension is NOK 108 852 (€13 260) at present.<sup>12</sup> The maximum pension is about NOK 239 000 (€29 000) at present. These imply a moderately progressive system;
- Since 2002, NIS pension benefits are indexed on wages. Prior to that, they were increased in an ad hoc way, which on average was equivalent to about a 50/50 indexation on prices and wages;
- Compared with many other OECD public pension systems, particularly those in continental Europe, the Norwegian public pension does not seem generous: the age at which it can be claimed is high, at 67, the gross replacement rate is comparatively modest for those on average earnings, and is low for those on high earnings. But many Norwegians can in practice retire earlier through the AFP-scheme and replacement rates in the public sector (covering one third of all workers) are considerably boosted by its occupational scheme;
- NIS pension benefits are taxed as income, except for those with pension income only (including disability and survivor pensions) lower than NOK 121 000 for a single pensioner in 2005. Pensioners in this category are exempt from both income tax and NIS contributions.<sup>13</sup> These differences in taxation between wages and pensions are high compared to other Scandinavian countries (see Figure 4).
- Furthermore, around half of people receiving benefits and/or pensions either pay no tax or do so under a tax-limitation rule (see Annex A1).<sup>14</sup> The net after-tax replacement rate may thus be higher than the gross replacement rate for a large number of pensioners. For a worker earning half average wages, the net replacement rate (after income tax) is about 85% of average net earnings, while for one on 2.5 times average wages, the replacement rate is about 43%. For a worker on average wages, the net replacement rate is approximately 65%, in each case assuming at least 40 years of work history (OECD 2005).

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12. Pension and many other benefits under the NIS are determined in relation to the basic amount “G” (“Grunnbeløpet”) for social insurance and income tax purposes, set equal to NOK 58139 (on average) in 2004. It should be compared to the Average Production Worker wage for Norway which is close to 6 “G”. A minimum pension for a single person is 1.7933G.

13. These social security contributions are not earmarked to benefits, but go into the common tax pool.

14. Old-age pensioners and disability pensioners with income exceeding the limits for which these special tax limitation provisions apply are notably entitled to a special deduction in the income tax.

**Figure 4. Difference in taxation of wage and pension income in the Scandinavian countries<sup>1</sup> 2005**

1. Supplement of taxes for a wage earner relative to a pensioner, converted in NOK 2005. A Norwegian worker earning 150 000 NOK in 2005 has to pay a supplement of taxes of about 19 000 NOK compared to a pensioner earning the same revenue.

Source: Ministry of Finance in Norway, Ministry of Finance in Sweden and Ministry of Taxes in Denmark.

### ***The AFP scheme creates strong incentives to retire early***

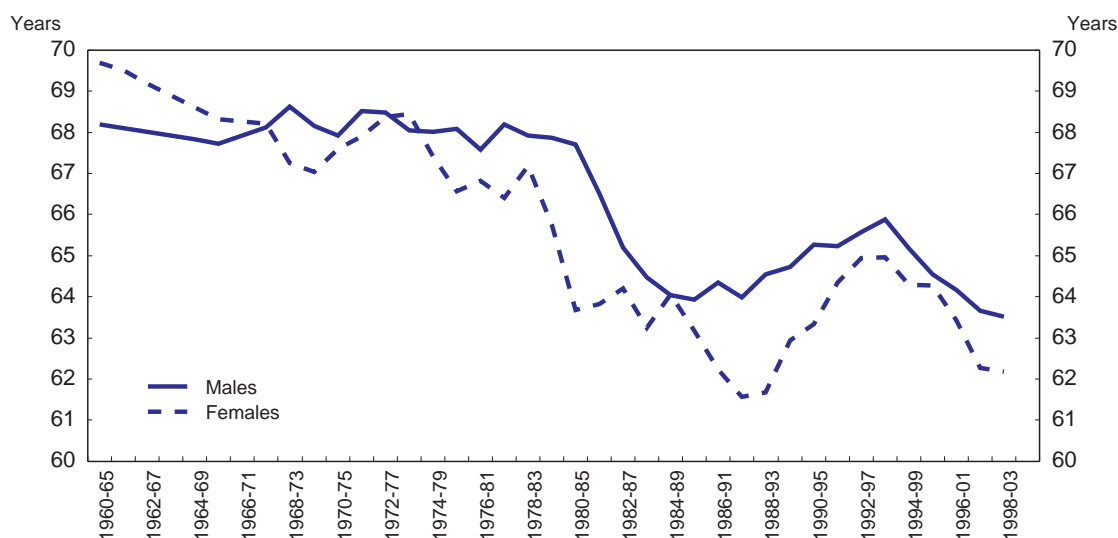
17. Introduced in 1989 through an agreement between employers, unions and the government, the AFP early retirement scheme has kept evolving. At the outset, the scheme was intended especially to target those who had left school early and had already accumulated a long work history before the regular retirement age. Conditions have loosened and generosity is high:

- The entitlement age was initially set to 66 but has gradually slid, to reach 62 in 1998;
- The institutional settings and eligibility conditions for the AFP are essentially 10 years of work after the age of 50 with annual income above a fairly low minimum level (roughly 120 000 NOK 2005) and an annual retirement income at least equal to 60 000 NOK to be entitled a full-rate pension at 62 rather than 67;
- AFP pensioners are accorded pension rights in the NIS until 67 years, and the AFP benefit corresponds to the old age pension one would have received from the NIS from 67 years plus an additional AFP subsidy. The sum of pension and AFP subsidy is subject to a ceiling of 70% of previous income;
- Today, this programme covers all employees in the public sector and almost half of the employees in the private sector (mainly sizeable firms). In 2004, more than 30 000 persons benefited from an early pension (30% of the population aged between 62 and 66). About half those entitled to claim an AFP pension now do so;
- The AFP scheme is less attractive to high earners because the replacement rate is low (occupational pension supplements cannot be claimed before 67). Nevertheless, more than 44% of high income individuals eligible for AFP chose to transit through the AFP in 2000.

18. Not only are the AFP benefits easy to access, but they are rather generous and provide little incentives to stay in the labour force. The introduction of the AFP early retirement scheme has coincided

with a sharp decline in average effective retirement age (see Figure 5). The payments are calculated as the pension benefit the individual would have received at age 67 plus an additional early retirement subsidy. In addition, the final supplementary old-age pension level is calculated *as if the individual had continued in the labour force* until the standard retirement age of 67. In some cases, it may be even higher than had the person in fact continued to work, because of the effect of the minimum pension at low and middle incomes.<sup>15</sup>

Figure 5. Average effective retirement age in Norway<sup>1</sup>



1. Average age of withdrawal from the labour force for individuals older than 40 based on changes in participation rates by five-year age cohorts over five-year intervals.

Source: OECD (2004b).

19. AFP schemes are today heavily subsidised in the private sectors through direct support or tax rebates: employers in the private sector bear the full burden only for the age group 62-63 -- with the individual employer paying 25% and the rest financed via sectoral collective agreements -- and not more than 60% for the age group 64-66. In the public sector, the government and municipalities bear the full cost for their employees aged 62-66. The payments to this scheme amounted to about NOK 6 billion in 2003 (about 7% of spending on regular old-age pensions), of which the private sector was responsible for about 50%. The total government contribution to the private sector schemes, including the value of tax benefits and accumulated pension benefits under the National Insurance Scheme, was just under NOK 1 billion. Hence, although the AFP is the result of an agreement between employers and trade unions, there are fiscal implications for the government, because of the public subsidies, lower receipt of income tax, and higher regular old-age pensions.

*...notably because of a broken link between contributions and pensions*

20. Given the fairly weak individual eligibility conditions, and the favourable economic incentives, AFP has gained popularity. Bratberg *et al.* (2004) find that the AFP economic incentives strongly influence early retirement decisions. These authors estimate that by a conservative judgement, at least 50% of the AFP retirees would have stayed in the labour force without this scheme. Fehr *et al.* (2003) shows through

15. See Bratberg *et al.* (2004).

simulations that a relatively high minimum pension benefit and a weak link between contributions and pensions introduce strong marginal implicit incentives for low and middle-income earners to retire at the age of 62. In 2003, households earning less than 137 000 NOK a year would not increase their pension benefits if they worked longer. In addition, these households' most recent labour income was either below or only slightly above the minimum pension. Rational low and middle income earners (see Table 3, for a definition) should therefore retire at 62 while high income earners should remain in the labour force to 67 or 68. Nevertheless, strong preferences for retiring early clearly exist even for the latter group.

**Table 3. Status of individuals eligible for AFP early retirement**

	Low-income	Medium-income	High-income
Still in work	33.5	37.2	45.1
AFP early retirement	54.3	51.4	44.0
Disability pension	6.4	5.1	2.6
Unemployment benefits	2.6	2.4	1.5
Private schemes, other	3.2	3.9	6.8

Note: "Low-income" is annual income equal to or less than 185 000 NOK, "Medium income" is between 185 000 and 240 000 NOK, "High-income" is above 240 000 NOK.

Source: Bratberg *et al.* (2000)

21. In addition, the combination of the Norwegian old-age pension and AFP implies some counter-intuitive distributional effects according to Pedersen (2004). Many (typically female) workers with a considerable work and contribution history, but insufficient for them to qualify for the AFP, end up receiving only minimum benefits at age 67. In the same way, the present rules for the NIS pension based on the 20 best years favour white-collar workers, whose careers are typically shorter and marked by a rising earnings profile, introducing strong redistributive biases.

### ***Occupational pensions need more coherence, portability and a widened coverage***

22. Today, there are several heterogeneous occupational pension schemes in operation in Norway, and the government pledged in connection with the 2004 collective bargaining round to introduce a mandatory occupational pension for all employees (see Box 2).

23. When combining occupational pension and work income from the same employer, the pension is reduced proportionally with the increase in the worker's earned income. It is not possible to receive a full occupational pension and still work full-time for the same employer, but possible if the occupational pension is from a governmental or municipal employer and the work income comes from an employer in the private sector, or *vice versa*. Coverage of occupational pensions is unequal since all public sector employees are covered whereas only 36% of employees in the private sector (including the self-employed) are members of an occupational pension scheme. Transfers of entitlements are limited, since they can only take place between public schemes or between private schemes. In addition, special regulations for the vesting period in the public sector schemes might hinder mobility of civil servants to the private sector, acting as a deterrent to resign (see Box 3). Measures to improve portability between private and public sectors and within the private sector should be considered.



### **Box 2. Occupational pension schemes in the public and private sectors**

In the public sector, occupational pensions are universal and of the defined benefit type, designed as add-ons to the public pension and guaranteeing a total pension equal to two-thirds of final gross income. Central administration employees are ensured occupational pay-as-you-go defined benefit pensions by law, through a special scheme called SPK (Statens Pensjonskasse). Local administration employees are also guaranteed a two-thirds gross replacement rate, but are covered by an agreement between workers' and employers' unions. Those schemes are also defined benefits but funded: they may be operated by the mutual insurance company KLP (Kommunal Landspensjonskasse). Whereas a special agreement between public sector occupational pension schemes opens total transferability of rights between local and state schemes, no transfer is possible from a private to a public occupational scheme and some rules remain quite restrictive (see Box 3).

In the private sector, occupational pension schemes are firm specific, privately funded and mainly defined benefit. Contributions are tax deductible *inter alia* on condition that no benefits are payable before the age of 67. A private pension plan is strictly internal, and all employees must be members. While there is no vesting period, employees leaving during their first year forfeit their accrued pension rights. Private sector occupational pension plans are common in large companies, rare among small companies.

The current tax-favoured occupational pension plans cover about a third of the workforce in the private sector. Up to 2000, only defined benefit schemes were given the special taxation treatment, which may explain the reason why so few defined contribution schemes were developed in Norway. From 2001, the Act on Defined Contribution Occupational Pensions has regulated defined contribution plans. The two acts contain similar minimum rules concerning coverage, benefit qualifying conditions, vesting and the protection of rights in these plans. Early retirement is not covered by occupational pension schemes, neither in the public, nor in the private-sector (see further). In addition there are tax-favoured private supplementary (and non-compulsory) pensions especially among self-employed, with retirement allowed at age 64.

### ***Lower incentives for old-aged to work also arise from disability schemes***

24. The main reason why Norwegian spending is set to rise so steeply is that participation rates are comparatively high especially in the 60-64 age group for men and at all ages up to 64 for women (see Figure 6). Combined with a still maturing system (the income-related supplementary pension was introduced in 1967) and the particular workings of the AFP, this means that most Norwegians of pensionable age in future decades will have the right to a full public pension at the age of 67 and life expectancy is both high and still rising. As seen above, Norway's public pension system is characterised by a relatively high statutory age of retirement and a requirement of 40 years of work history. Replacement rates are not particularly generous, except for low-income groups. Unlike in some other OECD countries therefore, major savings cannot be made by imposing more stringent conditions, except as regards indexation arrangements. Reforms need primarily to encourage a higher labour supply.

### Box 3. Issues on portability of occupational pension schemes

*In the public sector*, two issues arise, introducing some restrictive rules that could hinder mobility for workers between private and public sectors due to occupational pension regulations :

- Occupational pension rights belonging to employees with less than 3 years of service are not honored. These rights stay on the books and will be added to the employee's record in case they again become member of a public scheme (regardless of whether this is a local or central administration scheme).
- Rules for entitling a full pension in the public sector may also deter mobility. Thirty years of service are required for a full replacement rate at 67 but if the employee resigns this number is increased to forty years, implying a fall in the replacement rate. This rule may lead to a substantial brake to mobility because, for many employees, resigning from the public sector to go into the private sector may imply a substantial loss of pension rights.

These issues often arise in privatization processes, adding substantial complication for companies to transfer their workers' rights and clear their implicit pension liabilities. Reforming those rules to fit the OECD recommendations on Core Principles of Occupational Pension Regulation should thus be considered.

*In the private sector*, an employee leaving a defined benefit occupational plan has the account turned into an individual contract, based on actuarial principles (but both valorisation and indexation depend on returns in the insurance company leading to potential deviation from actuarial neutrality). The employees may then choose to continue tax-favoured payments into their contract, given an annual ceiling and a deadline for taking up the offer. If a private sector employee (a former member) enters a new private plan:

- either the plan will not count the employee's existing rights, which implies that the employee will have different rights in multiple occupational plans when he or she retires;

or the new plan will include these rights, based on specific actuarial rules of transfers. Such a transfer will increase the employee years of service in the plan. But employees bear some actuarial risks: they gain or lose through this operation given their age, individual wage careers, and return on assets in the insurance company that handled the individual contract. Besides, these transfers give rise to high administrative "menu costs", that defined contribution benefits may avoid.

Source: OECD, Labour Force Statistics.

25. Following the introduction of the early retirement scheme (AFP) in 1989, the effective retirement age is now substantially lower compared with the early-1980's (62 versus 68 formerly). It also reflects the rise in the number of disability pensioners thanks to an easily accessible scheme which has lowered the expected age of exit from the labour market. The effective age of labour market exit (including also permanent outflows into disability schemes) is lower than the effective retirement age, though it has increased somewhat in recent years (Table 4).

Figure 6. Participation rates by gender and age

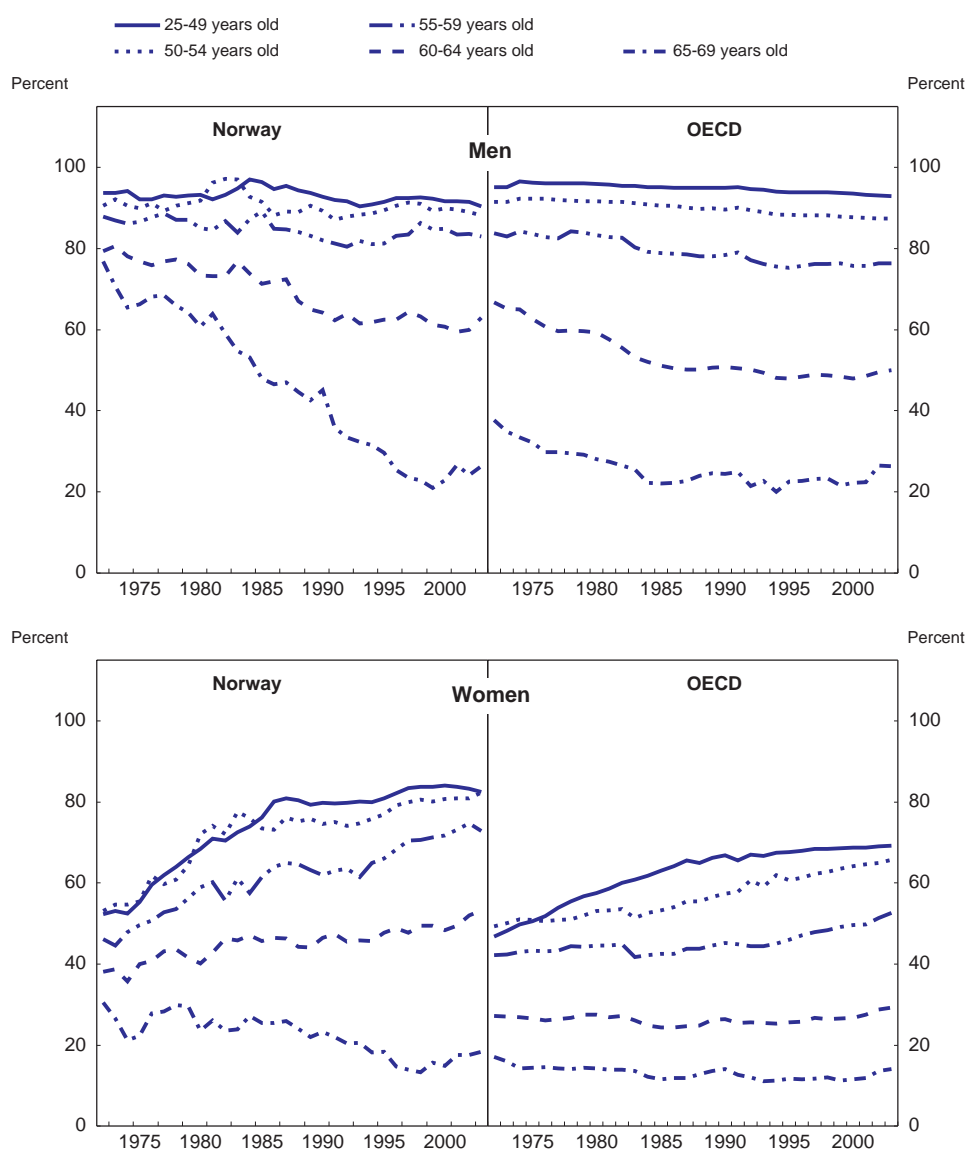


Table 4. Effective age of labour market exit in Norway

	1998	1999	2000	2001	2002	2003
Age	59.2	59.4	59.9	61.1	60.8	60.4

Source: Ministry of Finance.

***A high proportion of disabled in Norway compared with other OECD countries***

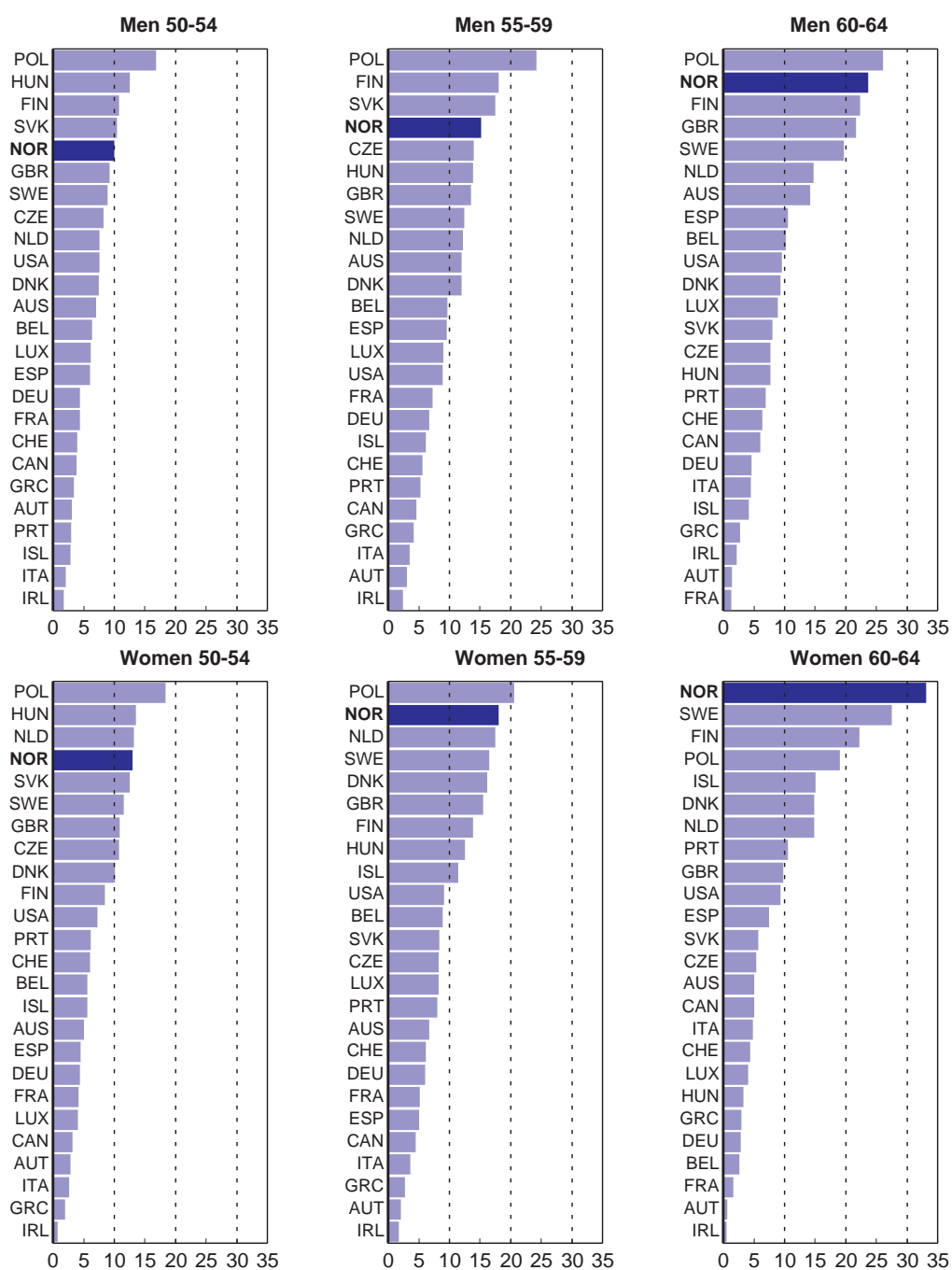
26. Compared with other countries Norway has very high labour force participation rates, especially among older people. However, as shown in Figure 7, Norway has today one of the highest shares of older people (more than 15% of the 55-59 average group and more than 25% of the 60-64 age group) who are reported as ill or disabled. Few of these eventually re-enter the work force. As shown in Figure 7, this share of disabled increases dramatically with age, especially for women.

27. Disability pensions in Norway consist of a basic pension, a supplementary pension and/or a special supplement. Ability to work must be permanently reduced by at least 50% to qualify for a disability pension. The level of the supplementary pension depends on the number of years with accrued pension rights. Forty years of contributions are required for a full disability pension. However, to calculate a person's disability pension, future insurance periods and future pension points are estimated based on historical working record. A person born disabled or becoming disabled before reaching the age of 26 is credited with a disability pension set at a rather high level. In 2004, 33 400 Norwegians had entered such a disability scheme, leading to a total number of disability pensioners projected at 320 000 in 2005 (about 13% of the labour force that year).

28. In 2000, more than 85% of the men and 66% of the women in the age group of 50-59 who left the labour market did so because of illness or disability. In fact, more than 70% of recipients of this benefit are above 50 years, and 30% of the inactive above 55 years are recipients of this benefit. As shown in Figure 8, between ages 60 and 64, disability schemes are the main labour market exit route, outpacing early retirement. From 1993 to 2001, the inflow of new disabled kept rising. Recently, whereas new disability inflows among old-age workers have seemed to stabilise, they have been increasing strongly among younger cohorts between 30 and 50. It is hard to reconcile this picture of large numbers of infirm people compared with other OECD countries, given the relatively high overall health status of Norwegians.

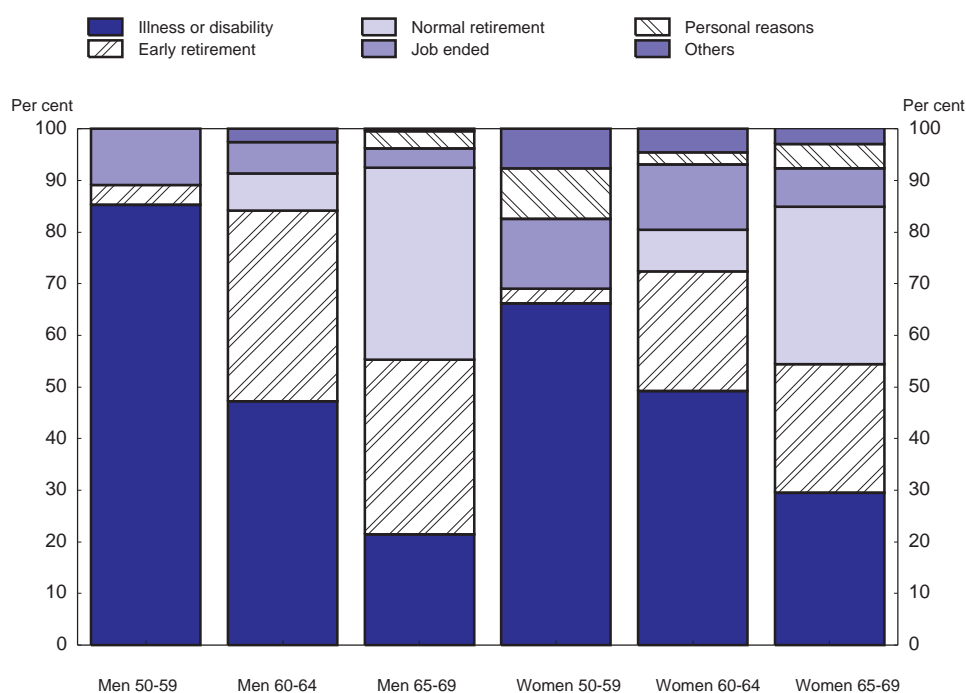
29. Since 2000, rehabilitation programmes have been expanded to attempt to reverse those trends. These programmes were implemented when the requirements of actual rehabilitation trials to qualify for disability pensions were considerably sharpened. These benefits include either medical rehabilitation programmes involving active treatment or vocational rehabilitation programmes involving training and qualification. In 2004, close to 65 000 people benefited from vocational rehabilitation and close to 50 000 persons were on medical rehabilitation, in all close to 4% of the labour force. These programmes aim to direct people from passive to active measures under the NIS by reducing the total length of time on national insurance schemes and preventing any exclusion from the labour market.

**Figure 7. Inactivity because of illness or disability in selected OECD countries**  
In 2003, as a percentage of population in each age group



Source: OECD estimates based on labour force surveys.

**Figure 8. Reasons for leaving last job in Norway, 2000<sup>1</sup>**  
As a percentage of inactive in each age group



1. The category 'job ended' consists of both dismissals and the ending of a temporary contract; the category 'personal reasons' also covers training.

Source: OECD (2004), Ageing and employment policies.

30. Some other measures were also passed in 2004. The disability scheme was divided into a permanent disability pension and a temporary disability benefit. The latter category will be granted for 1-4 years and may be reviewed. It is aimed at persons who otherwise stay for long periods in health and working ability programmes. The benefit is calculated on the model of the rehabilitation benefit, whereas permanent disability pension rules remain unchanged. From 2004, several other measures have also been introduced in order to reduce the total length of time the recipients can spend receiving such benefits:

- a maximum time-limit of 2 years on how long the beneficiaries may receive rehabilitation allowances;
- a statutory obligation to consider vocational rehabilitation as soon as possible and not later than within the expiration date of sick leave benefits;
- a time limit (maximum 3 years) for how long education may be used as vocational rehabilitation, and the lower age-limit increased from 22 to 26 years.

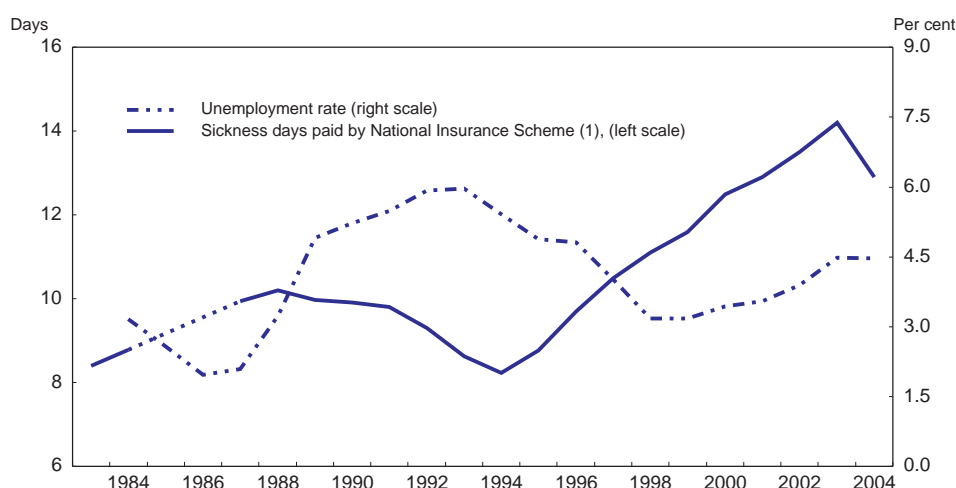
31. Recipients of vocational rehabilitation benefits have recently been growing because of those new regulations and also because of tightening of sick leave conditions (see further). However, the outflow was much below expectations. Introducing temporary disability benefits without strengthening eligibility criteria might be part of the problem. Some conditions may also be too generous and counter-productive: the 3 years time limit related to educational rehabilitation programmes is rather long and is not sufficiently

controlled.<sup>16</sup> There are risks that such an extended period out of the labour market erodes human capital and contributes to low outflow rates. Lowering the generosity of sickness pay compared to the rehabilitation allowance should also be considered.<sup>17</sup>

### ***Reversing long term sick-leaves: some encouraging results to be confirmed***

32. As long-term sick leave is often said to be the first step to disability, it is not surprising that Norway has one of the highest number of days lost due to sickness, twice the median OECD figure,<sup>18</sup> as well as the highest disability rate in the OECD. In Norway, sick leave has followed a rising trend since the mid 1980s (see Figure 9). Paid sick leave days by the NIS rose from 8 per worker per year in 1983 to a record of 14.2 days in 2003. Since the first quarter of 2004, this trend has reversed with a fall of about 10% between 2003 and 2004. These recent encouraging developments seem due to stricter control rules introduced in summer 2004 (see Box 4).

**Figure 9. Number of sickness days per employee and unemployment in Norway**



1. Dotted line corresponds to interpolated years which are 1985 and 1986.

Source: Ministry of Labour and Social Affairs, OECD Analytical Database.

33. Looking at trends in Figure 9, a cyclical effect cannot be excluded, as it has also been observed in other countries such as the Netherlands (OECD, 2004c). Despite the current robust recovery, unemployment has not yet fallen back to its natural rate, and might exert implicit pressure on established workers. Askildsen *et al.* (2005) show, through a comprehensive panel study on Norwegian sick leave, that unemployment has a quite clear negative effect on the probability of having a sickness spell lasting 15 days or longer in a given year. Pro-cyclical variations in sickness absences are caused by established workers and not by the composition of labour: fully insured workers under the Norwegian system will demand

16. According to officials, there is today a too large degree of freedom in choosing the educational subject related to this programme.

17. While sickness pay involves 100% of income up to six times the basic amount, about 350,000 NOK, for a maximum of one year, the rehabilitation allowance has a replacement rate of only 66% of earlier income.

18. According to the OECD Employment Outlook (2004), 24 working days per full time equivalent employee were estimated to be lost in Norway, 26 for Sweden and close to 19 for the Netherlands, whereas the median figure in the OECD was close to 12 days in 2002.

more frequent and longer sickness absences when the threat of becoming unemployed is low. Incentives definitely matter for the “insiders”, in Norway.

**Box 4. Did the 2001 agreement on sick leave really work, or are stricter controls responsible?**

A tri-lateral agreement, introduced in 2001, had three main objectives: a 20% reduction of the average absence per worker by the end of 2005 compared with the level in the second quarter of 2001, an increase of disabled persons' participation in the labour force, and an increase in the retirement age as a policy objective. It engaged the responsibility of both employees and employers who signed it. The interim results after two years were disappointing, with a continual increase of absence rates rather than a reduction. Since the second quarter of 2004, a spectacular trend reversal has been observed. It is likely that the tri-partite agreement had only minor effects, since sick leave reductions are observed today in firms both in and out of the agreement. The change in the regulation of July 1<sup>st</sup> 2004 is assumed to be the main explanation. In particular, three restrictive amendments to the sick pay scheme seemed to have a major impact:

- an introduction of an activity requirement within eight weeks of granting the latest sickness certificate, unless medical reasons clearly exclude work-place attendance;
- an evaluation of functional capacity evaluation and documentation by a medical practitioner after eight weeks at the latest;
- stricter sanctions on medical practitioners who do not comply with the new rules for sickness absence certification.

Some progress has also been observed in medical rehabilitation programmes. The number of recipients decreased by 17% between 2003 and 2004, mainly due to stricter regulation:

- reduction of the period of rehabilitation benefit to one year;
- vocational rehabilitation should be considered as early as possible, and at the latest by the end of the period on sick leave and after 6 months on rehabilitation benefits.

34. As long periods of sick leave are the first step to disability and exit from the labour market, both the recent trend reversal and this recent research confirm that, in so far as absence fluctuations have their roots in employee moral hazard, stricter rules to reduce absenteeism should be pursued. A modification of the Sandman proposal of increased economic responsibility for employers (coverage of 10% of NIS sick leave pay), should have taken effect in the summer of 2005.<sup>19</sup> This measure, if applied, should have reduced sick leaves further, as they still remain at very high levels by historical and cross-country standards. However, because of the success of the 2004 measures in reducing sick leave, it has been decided to suspend the proposal for the time being.

35. Past experiences in some OECD countries suggest that such trend reversals are difficult to maintain in the long-run, without tighter administration and strong incentives. Measures enforcing employee's responsibility should thus be considered, such as incentives to reduce long-term sick leaves (excluding those relevant to disability) through partly flexible employers and employees' contribution rates close to experienced-rating programs, such as those introduced recently in the Netherlands, that proved successful. Lowering replacement rates at the employee's expense, by say 20%, starting from a waiting period, could have the required incentive effect.

**A major pension reform is needed**

36. There is today a broad political consensus about the need for a pension reform that will reduce the growth of public spending. In January 2004, the Pension Commission, after three years of

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19. It was a condition of the initial agreement.



deliberations, delivered a diagnosis of the limits of the present Norwegian pension system. These proposals are well documented in OECD (2004a) and OECD (2004b). In December 2004, the Norwegian government issued a White Paper setting out a strategy for a reformed pension system. It comprises a public targeted minimum pension for all, and a public income related pension, that to a greater degree than today depends on individuals' life-time income and labour market participation. The government also proposed the introduction of a compulsory occupational pension. Since the AFP is based on agreements between employers and trade unions, it was not directly considered either by the Commission, or in the White Paper. However, the Pension Commission proposed to put an end to government subsidies to the AFP and concentrate its financial contribution towards a flexible pension system within the NIS. Thus, the Government proposed in the White Paper to review the public financial support in 2007.

37. Among the government's comprehensive set of proposals (see Box 5), there are two key innovations:

- The universal minimum pension would be replaced by a targeted minimum pension guarantee, tax financed and tested against benefits from the reformed income related pension,<sup>20</sup>
- The public pension system would include a modified supplementary pension, moving from a traditional defined benefit formula to a Notional Defined-Contribution (NDC) formula similar to the Swedish (and other) notional account systems. Contributions would still be used to finance current benefits (pay-as-you-go financing), but each year's contribution would be credited to a notional account.

#### **Box 5. The White Paper's proposals**

For most pensioners, benefits would not greatly differ from those in the present system. Savings would be achieved mainly by encouraging higher employment levels at old ages:

- *Calculation of benefits based on lifelong earnings, through the introduction of an individual account.* A fictitious capital is accumulated and converted into an annuity on retirement. The contribution period would have no upper limit, encouraging later retirement and penalising early retirement.
- *Introduction of a "life expectancy adjustment ratio".* This ensures that pension benefits are adjusted according to the life expectancy of the population at large: pension benefits would be automatically reduced for each cohort in line with future increases in expected remaining life-span at 67.
- *Full wage indexation in the contribution period:* contributions are credited and accumulated in a virtual capital account, with an imputed rate of return based on economy-wide wage growth.
- *Pensions to be indexed on an average of wage-price indexation after retirement.* This would remove the indexing rule on wages passed in 2002.
- *A flexible retirement age under the National Insurance Scheme from the age of 62 years.* The annual pension is based on earned pension entitlements being allocated over the expected number of remaining years of life of the age cohort to which the pensioner belongs. Annual information will be provided to individuals as to their expected pension level based on different retirement dates. The possibility would exist of retiring early as from the age of 62 for those who have accumulated sufficient pension rights to an income that is above the targeted minimum pension. The minimum pension can still be withdrawn from the age of 67. It is proposed to abolish the upper age limit of 70 years for accruing pension entitlements under the National Insurance Scheme.

20. Occupational pensions or other source of income should not be taken into account for the means testing.

- *Pension and labour income can be combined freely, without means testing.*
- *A targeted minimum guaranteed pension level for all, equivalent to the present minimum state pension through the National Insurance Scheme. It would be reduced against the income-based pension. This enables the guaranteed pension to be targeted towards those who need it the most. The reduction is gradual, with the result that some people with low income will also receive a pension in excess of the guarantee level. It would be differentiated, as today, according to marital status (NOK 108 852 for singles and somewhat less per person for married people/cohabitants).*
- *Improvement and development of the accumulation of pension rights for people who take unpaid leave to care for children below school age, and for sick, disabled or elderly people. Pension entitlements from unpaid care work would be based on previous employment income, with an upper limit corresponding to the basis for calculating statutory maternity pay. Irrespective of previous income, recipients would be guaranteed higher minimum pension entitlements for years with unpaid care work than would be the case under the present rules. The Government will also propose retroactive pension entitlements for unpaid care work under the present National Insurance Scheme.*
- *Introduction of a mandatory supplementary occupational pension on top of the new National Insurance Scheme.*
- *Creation of a Government Pension Fund, based on the Government Petroleum Fund and the National Insurance Fund. The annual budget documents submitted to the Parliament ("Stortinget") will show how the Fund has developed relative to the amount of state pension obligations under the National Insurance Scheme.*

***Actuarially fair schedules should be implemented to enhance incentives to work***

38. The government proposals stress the principles of actuarial neutrality and proportionality between contributions, life expectancy at retirement and pension benefits. Many features of the White Paper are in line with former OECD recommendations, and are shared with reforms in other countries. Under a pure notional defined contribution system (NDC), the total lifetime pension received would on average be the same for those who retire early as for those who do not. Each year, pension entitlements under the National Insurance Scheme would be credited<sup>21</sup> in a pension account, on the basis of a virtual yearly contribution rate of 17½ per cent<sup>22</sup> of the person's employment income and on the basis of unpaid care work. A contribution/pension accrual ceiling would be limited to an amount corresponding to 8G (€56 650) in 2005. Technical and theoretical issues related to notional accounts in Norway are explored in Annex. Annex A3 particularly insists on the trade off between a generous indexing rule and a relatively high replacement rate in the notional account framework.

39. A NDC-system can promote better incentives to work, while maintaining a minimum basic pension would ensure that retirees with low income-earning capacity and incomplete work histories will not run the risk of living in poverty.

- The notional account should reinforce the individual's feeling of ownership in relation to the pension system.
- Early retirement would become less attractive (see Table 5). Retirement at age 62 would lead to a reduction of about 25% in pension payments compared with benefits on retirement at age 67. There would be no upper limit on retirement age.

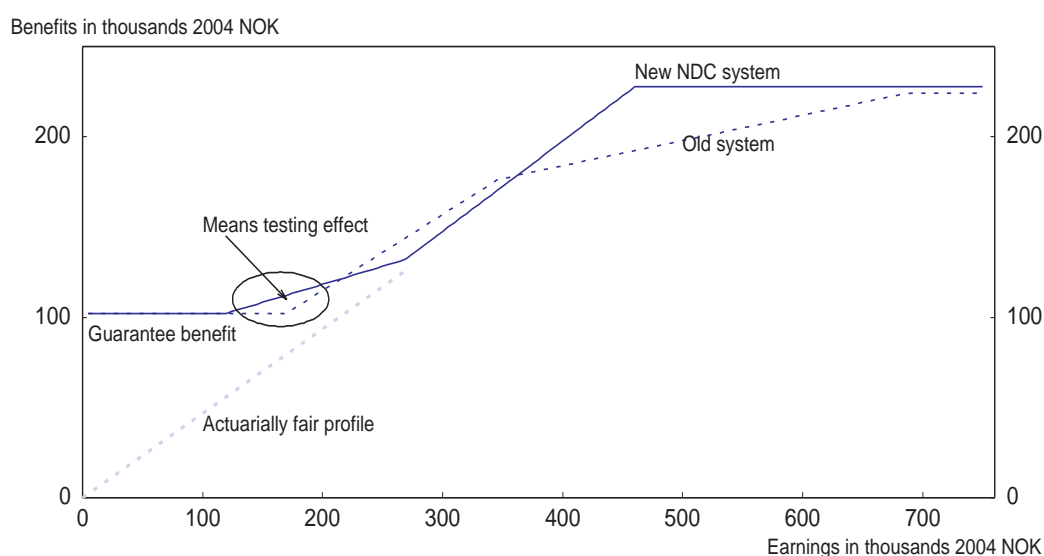
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21. Those schedules are still under discussion after the Storting agreement in late May 2005

22. The pension commission proposal was a gross compensation ratio from age 67 of 1,25% for each year of employment at today's life expectancy, corresponding to an accrual rate of pension credits of about 17 ½ percentage points of income.

- The new system would apply fully to people born after 1965 and partly to people born in the period 1951-1964. The actuarial schedules, if introduced, would apply from 2010 to pensions, both from the former and the new system.
- In Norway, as already mentioned in Fehr *et al.* (2003) the minimum benefit “trap” created by the special pension supplement has resulted in many (typically female) pensioners with a considerable work and contribution history receiving only minimum benefits. Although the proposed reform maintains the minimum benefit at the same level, it should be gradually reduced against the income based pension benefit. The reform should partially tackle this issue by reducing “threshold effects” (see Figure 10).

**Figure 10. Relationship between earnings and retirement benefits**  
Case of a single pensioner with stable earnings over a 40 year labour market career



Source: Pedersen (2004).

- Combining work and pension would be possible without a reduction in pension payments reducing the implicit tax on continued work.
- The introduction of a “life expectancy divider” will moderate pension benefits in line with a future increase in life span, a necessary element in moving to a sustainable system.

40. However, the White Paper’s proposed reform of the NIS pension scheme is less far-reaching and coherent than the 1998 Swedish reform, which to some extent served as a model:

- The new system would apply fully to people born since 1965 and partly to people between 1951 and 1964. The system would thus not be introduced retrospectively, mainly for constitutional reasons.<sup>23</sup> A better alternative would have been that the changes take effect as from 2010, with

23. The Swedish reform introduced gradually but retrospectively the NDC, such that individuals born after 1953 fully participate in the new schemes. Large cohorts of the Baby boom generations, mainly concentrated between 1947 and 1965 were thus fully included in the new scheme.

persons born in 1950 or earlier being granted their pension entitlements on the basis of the present system only, and all others fully on the new NDC scheme.

- Old-age pensions and contributions are not separated from the rest of the fiscal budget in an autonomous system, so it is not made clear that the pension system may well need to be heavily subsidised from the general state budget.
- There is no proposal for automatic changes to contribution rates in future, should pension spending outpace annual contribution payments<sup>24</sup>. The long term financial stability of the old-age pension system is thus not guaranteed, challenging the coherence of the notional account approach.

**Table 5. Change in pension relative to retirement at 67 with a “flexible early retirement scheme”**

Retirement age	Life expectancy	Change in yearly pension relative to retirement at 67 (in percentage)
62	19.6	-25
65	17.0	-12
67	15.3	0
70	12.7	21

Source: Ministry of Finance.

*...with limited anti-redistributive effects,*

41. As mentioned in Pedersen (2004), the provision of a means-tested minimum guarantee will inevitably produce tax wedges and interfere with the contribution-benefit link. Thus, the distribution of old-age income might be more unequal under the reformed system. However, as reported in Table 6, Pedersen (2004) shows that:

- although the gender gap in average benefits is likely to grow despite more generous contribution credits for unpaid care, the effect may be relatively modest;
- inequality would rise slightly, but to fairly low levels, and discrepancies in benefits should widen more among men than women.

24. As indicated in Pedersen (2004) and in Appendix B about the Swedish system: “in case of financial deficit both accrued pension rights and running benefits will automatically be under-indexed until financial balance is restored”.

**Table 6. Inequality in the distribution of old-age pension benefits**  
Among male and female pensioners: prognosis for the year 2050

	Gini-coefficient		Gender gap (male/female)
	Men	Women	
Present system	0.10	0.12	1.11
Reformed system	0.15	0.14	1.16

Source: Statistics Norway (MOSART) and Pedersen (2004).

***...and could partially improve long term sustainability of public finances***

42. The government proposals may have ambiguous effects on the average age of retirement as all individuals get an option to retire at 62 whereas only 60% of them potentially benefited from the AFP. But the NDC greatly raises the individual cost of early retirement thanks to actuarially fairer schedules.<sup>25</sup> Making a pension system more actuarially fair does not in itself necessarily reduce its fiscal cost (unless it remains actuarially unfair for high income earners as is the case under the proposed reform), and it has to be admitted that the estimates of the impact on work effort are subject to large margins of error. And as long as an unreformed AFP system remains in existence, incentives to early retirement on actuarially unfair terms for low to medium income earners will remain strong.

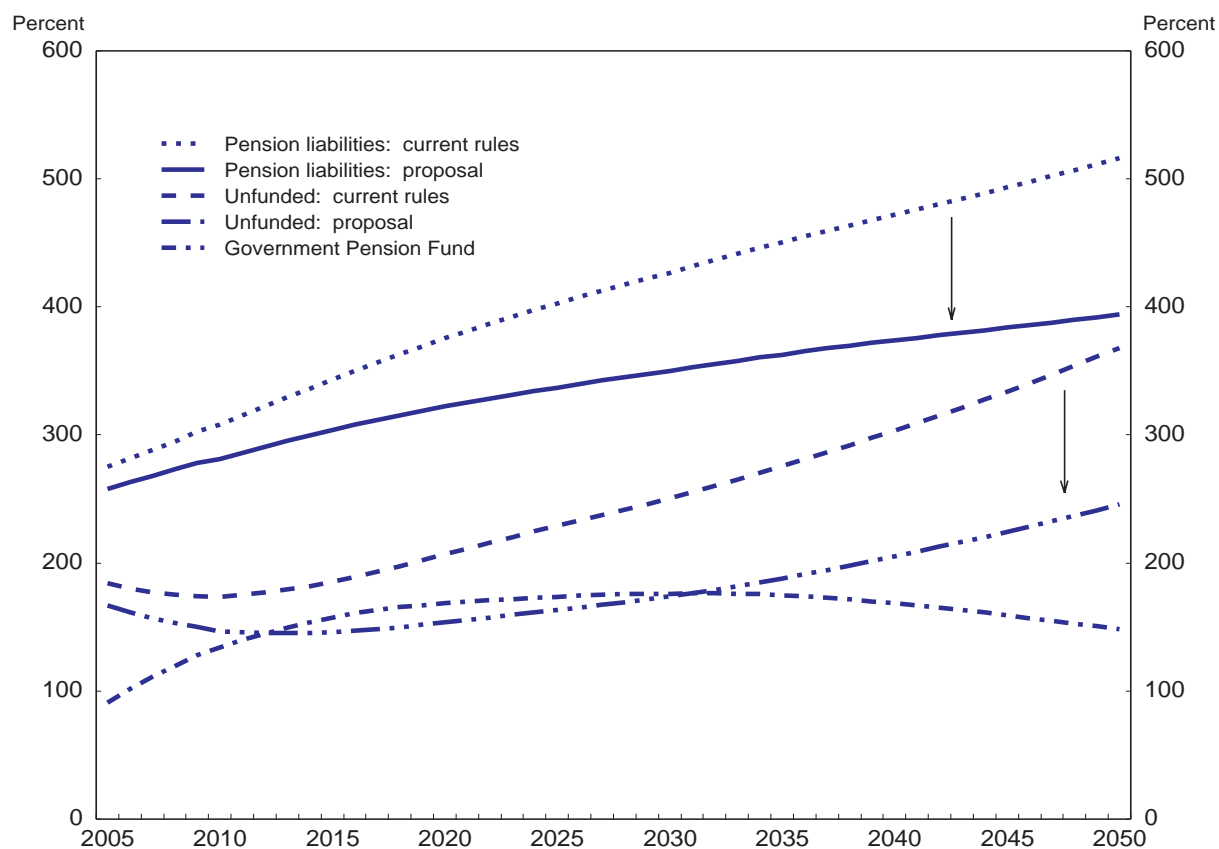
43. The White Paper's proposed pension reform also contains another way of reducing costs, namely indexing benefits after retirement to an average of developments in wages and prices, in contrast to the current more generous system of indexation to wages only. Other countries that are moving away from wage indexation find that this greatly reduces the expected growth in spending. The socio-economic effects of no, or only partial indexation on wage developments do not appear to be serious. Many OECD countries have only price indexation for pension benefits. In practice, retirees tend to compare their living standards with those of their same age-group: older retirees do not necessarily resent the fact that younger retirees, who will have made larger working-life contributions on average, also receive larger pensions.

44. The pension commission estimated, using prudent assumptions, that the combination of enhanced work incentives, introduction of a longevity factor, and the new indexation method would reduce old-age pension expenditures by 2-3% of mainland GDP in the long-term. The suggested reform could lead to a drop of about 5-6 percentage points in the contribution rates required to finance the system, corresponding to one third of the increase otherwise in the required contribution rate from 15% in 2000 to 30% in 2060.<sup>26</sup> This is an important step towards the sustainability of long-term public finances, but the proposed reform could by no means guarantee this. As shown In Figure 11, thanks to the reform, unfunded pension liabilities would be reduced from about 400% of mainland GDP to a still massive 250% in 2050.

25. Fredriksen and Stølen (2005) (using the micro-simulation model MOSART) estimate that the net effect on retirement age would be positive, with an increase by 0.6 years in 2015, 1.6 years in 2030 and 2.6 years in 2050. The reform could add 200 000 active workers to the labour force at that time. In 2050, employment would be more than 10% higher than in the baseline scenario, increasing potential mainland GDP.

26. More recently, Fredriksen, Heide and al (2005) estimated the future gain of the White Paper reform of 6% to be close to 3-4 percentage points of Mainland GDP in 2050, that is a 40% cut of the net financing gap. The results depend critically on labour supply responses and individual change in behaviour.

**Figure 11. Accrued pension liabilities and the Pension Fund**  
% of mainland GDP



Source: Ministry of Finance.

**Box 6. What kind of role would the Petroleum Fund play in the pension reform strategy?**

The Government followed the Pension Commission suggestion of replacing the Petroleum Fund and the National Insurance Fund by a new pension “fund”, supplementing the (reformed) pay-as-you-go system, (funding by itself would not solve the pension problem as the present value of pension liabilities substantially exceeds the combined expected assets of the Petroleum Fund and the National Insurance Fund). Pressures to increase public spending in other areas might then be easier to resist. If the new pension fund is adopted, revenues would be invested in line with the guidelines for the present Petroleum Fund. This would ensure that a large part of oil revenues is invested in foreign financial assets to neutralise pressure on the exchange rate. Safeguarding the capital value of the Fund over time would also require fiscal policy to be conducted consistently with the fiscal rule. However, there are some outstanding questions. How could Norway afford its welfare without oil and gas money? Is not that old-age pension depending on oil moneyt can be associated with a strong preference to finance “leisure”? These questions should all the more be raised than in the case of Sweden or Finland, Nordic countries which tackled the sustainability issue without such assets. Then remains the question of uncertainty: what if oil and gas prices collapse in the coming decades; what if the real return of the fund is disappointing?

***Reforms under discussion need a stronger focus on work incentives***

45. Important elements of the Government proposals won the support of the Parliament in May 2005:

- the introduction of a life expectancy adjustment ratio;
- benefits based on lifelong earnings by considering all working years in the calculation of pension entitlements;
- pensions indexed on an average of prices and wages.

46. However, some crucial elements, related to work incentives, are still under discussion. No agreement was reached on the principle of a close link between contributions and pensions, nor on the design of a flexible retirement scheme. The Government is asked to redesign the way entitlements in the general scheme accrue, putting less emphasis on actuarial fairness and more on redistributing income from high to low income pensioners. Furthermore the Parliament's views on a flexible retirement system are difficult to assess regarding work incentives. On the one hand, the parliament agreement states that AFP should be included in a future flexible scheme; on the other hand the government is asked to propose a general flexible system in the NIS. The latter should promote work incentives for people over 62, would allow to combine a pension and earnings, and would remove the maximum age for earning pension rights. The former government aware of the risks of substitution effects, lack of coherency and distortions between schemes regarding the White Paper proposals, intended to appoint a commission to propose a reform of disability pension schemes. An actuarially fair scheme from 62 associated with a life expectancy adjustment ratio proposed by the White Paper, were the core components of a reform stimulating labour supply and improving financial sustainability. The exact outcome of this reforming process will depend on new adjusted proposals from the government and further deliberations in the Parliament. But, if AFP and redistributive goals are given a too big priority, there are serious risks that both the positive incentive effects on labour supply and the favourable effects on public finances initially projected will be significantly weakened.

***Large eligibility to exit the labour market may counteract the effects of a pension reform***

47. Disability pension schemes are still projected to remain a very important labour market exit route: the related expenditures in the government baseline scenario would rise from 3% to 5% of Mainland GDP in 2050. According to micro-simulation models, by 2050, the disabled would represent more than 20% of the number of pensioners.

48. As already mentioned in OECD (2004b), introducing temporary disability benefits without strengthening eligibility criteria will probably not deter older workers from eventually jumping into this scheme. As the disability eligibility is not linked to new old-age pension entitlements, there will be stronger incentives to apply for disability rather than actuarially reduced old age benefits. A new commission should reconsider the disability scheme as the pension reform is discussed.

49. Risks remain that some forms of the AFP scheme may be maintained or re-established in a new guise. The social partners will still be free to conclude agreements on supplements to the reformed National Insurance Scheme, including a continuation of the payments currently being made in connection with AFP. But because of widespread welfare and safety nets in Norway, there are few justifications for early retirement schemes today that involve an element of public subsidy.

50. In order for the old-age pension proposals to have maximum impact, work disincentives should be removed to the extent possible from the disability pension and sick leave provisions. Public subsidies for early retirement, including in the public sector, should be suppressed and private early retirement schemes wholly financed by employers. To improve labour force participation, subsidised early retirement schemes could be strictly limited to workers with long contribution periods. They could also be gender biased to assist women with interrupted careers and lower wages due to childbearing and family

obligations.<sup>27</sup> Older workers laid off because of restructuring or seriously physically disabled low-skilled workers should be taken care of through training and rehabilitation plans rather than allowed into new AFP programs.

***Is the new indexing rule a major improvement?***

51. After the pension system was established in 1967, Norway maintained a discretionary approach to indexation. The indexation of the basic amount has been below wage growth, but above consumer price inflation,<sup>28</sup> and *ex post* close to the present proposal of indexing pensions on an average of prices and wages. In 2002, the Parliament (Stortinget) instructed the Government to propose annual indexation in line with wage growth for the future. This proposal would have entailed a sharp deterioration of the long term sustainability of public pension schemes. Moving to 50% price and 50% wage indexing will formalise almost four decades of the previous pragmatic approach.

***Public and private occupational pension schemes need to join the reform at different paces***

52. In the 2004 White Paper, the government proposed an adjustment of the public sector occupational pension schemes to a modernised National Insurance pension scheme. Changes to the occupational pension scheme for the public sector so that it does not counteract the effects of the pension reform should indeed be explored. The present occupational public schemes guarantee a total pension benefit equal to two thirds of previous earnings at age 65. This implies that any reduction in the public pension benefit is exactly compensated by an increase in the occupational benefit.<sup>29</sup> Coordination between the National Insurance Scheme and government occupational pension schemes is highly complex, and for many people it is difficult to understand how the pension is calculated. As long as private and government pension schemes differ, this may discourage mobility between the private and the public sector. Further proposals should thus be focused on:

- the coherence of public occupational schemes' eligibility and the new NDC pension schemes' incentives to raise the effective retirement age;
- the opportunity of a more general restructuring of occupational pension schemes.

53. Without any reform of the present system of public occupational pension schemes, the current proposal for new mandatory funded schemes in the private sector as of 2006 might increase the heterogeneity and the complexity of occupational pension schemes even further (see Annex 4A2 for a discussion of the detailed proposals). This reform should be phased in gradually, to take into account interactions with the new pension schemes, and to give small firms time to adapt. Restrictive occupational rules deterring mobility for public sector workers should be removed. Introducing a general funded defined-contribution occupational scheme that would include public occupational pension schemes could also improve the sustainability of state occupational pensions.

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27. This solution raises a major issue: subsidized early retirement for women are strongly supported, because of shorter working lives and lower wages than men, yet women carry higher actuarial risks for pension schemes because of a higher life expectancy.

28. As mentioned in Fredriksen, Heide, et al (2005): "Wage indexation is the political intention, and this assumption underlies all Norwegian projections of government expenditure. Effectively, however, the historical indexation has been somewhat less generous."

29. National estimates have assumed that the pension reform does not affect this scheme, but any increase in the occupational benefits is financed by higher premiums. Thus, continuation of this scheme does not imply any additional need for raising taxes. Yet, this should weigh on wage growth through tariff bargaining.



## Conclusion: significant new reforms will be necessary

54. As underlined in Fredriksen, Heide *et al.* (2005), the estimate of the baseline increase in future tax rates (or in the net financing gap) might be too optimistic, because it rests on the assumption that the standard of government services (including health) per user is kept constant in real terms over the whole simulation period. Such a development would imply a radical break with historical trends, including a much stronger growth in private than government consumption. It should also be noted that the scope for tax cuts before 2020 when financing gaps should enlarge, rests on these assumptions, as well as on the presumption of a high degree of fiscal discipline. If the room for temporary tax cuts is instead used to improve the standards in the services directed towards the elderly, the need for raising tax rates after 2020 will thereby be increased.

55. Looking back on European countries' experience, reforming the pension system has generally started earlier, in the 1990s, but at different speeds. With few exceptions, no reform seems to be definitive, and there is still a long way to go in most cases to ensure the long term sustainability of their public finances. Norway has to be commended for beginning to tackle this issue with a sensible set of proposals. However, even if ultimately passed and undistorted, the reform would save less than a third of the estimated net financing gap due to pensions. Non financed expenditures would still be very large compared to other OECD countries, while much uncertainty will remain as regards the future impact of the proposed pension reforms on labour supply. Given also other large fiscal risks such as long term care and health care, this implies that more ambitious reforms, also in other areas, will almost certainly be necessary.

### Box 7. Summary of recommendations

#### NIS old-age pension scheme

*Promote actuarially fair retirement schemes:* implement actuarially fair early (and later) retirement schedules to enhance work incentives and raise the expected age of exit from the labour market, as proposed in the 2005 White Paper. Consideration should be given to more direct and transparent linkage between actual contributions and benefits.

#### Non-NIS schemes

##### Early retirement

*Remove subsidies to private early retirement schemes:* public subsidies to private AFP schemes should be removed because they contradict a principal objective of the reform, namely to encourage people to retire on an actuarially fair pension centered around the age of 67. An exception could be made for those who have already accumulated long work histories by their early 60s.

*Align the public-sector early retirement conditions with the objectives of the NIS reforms, i.e. on actuarially fair terms.* Contractual early retirement rules should be made coherent with a reformed pension scheme.

##### Occupational pension schemes

*Reform public occupational pension schemes:* Phase out the guaranteed two-thirds replacement rate to be coherent with a flexible actuarially fair scheme. Consider switching from a pay-as-you-go system for central administration employees to a funded system, as already exists for local government employees. Explore changes that would allow for portability to and from the private sector.

*Establish a phasing-in period in the implementation of mandatory occupational private schemes:* small firms should not be obliged to support administrative costs that could hurt competitiveness. Moreover, though introducing a mandatory mutualised scheme based upon defined contributions should simplify an intricate occupational pension system, it might need a new regulatory framework in the Norwegian financial markets.

### **Disability pensions**

*Separate disability benefits from old-age pensions:* the disability pension system should be fully separated from the old-age pension scheme and integrated with the sickness insurance scheme to get a clearer link between medical assessments and disability pension.

*Remove incentives to shift on to a disability pension rather than take up an actuarially fair notional defined contribution scheme (NDC) as proposed in the reforms:* the disability pension system should not provide higher replacement rates than the reformed NIS system for older workers.

*Enforce stricter rules of permanent disability entitlements and part-time work for the disabled:* disability pensions should be easier to review and not be granted permanently. As for sickness, an evaluation of functional capacity and documentation by an independent medical practitioner (different from the treating doctor) should be regularly reviewed. Unless people are severely handicapped, they should be able to occupy at least part-time jobs, according to their capabilities.

### **Sick leave**

*Reduce the generosity of long term sick-leave:* sickness benefits amount, in general, to 100% of the salary up to 6 basic amounts (G) without any waiting period, for as long as 12 months. Benefits should be made less generous by introducing a waiting time period and by lowering benefits after a three-month sickness period.

*Introduce new measures enhancing employers-employees' responsibility on sick-leave:* lowering replacement rates for the first 14 days and making the employer cover some portion of sick pay, say 20%, should be considered.

### **Income taxation and incentives to work**

*Abolish distortions due to taxation:* pension and disability benefits are taxed at a lower rate than income from work, which skews the incentive to work. Taxing welfare income on the same base as labour income should be considered.

## ANNEX A1

**Pension benefits provided by the National Insurance Scheme**

56. Old-age pension consists of a basic pension, a supplementary pension and/or a special supplement, and possible supplements for children and spouse (income-tested). Persons, who are insured for pension purposes and who have a total insurance period of three years between the age of 16 and the year they become 66, are entitled to a basic pension.

57. The *basic pension* is calculated on the basis of the insurance period, and is independent of previous income and contributions paid. A full basic pension requires an insurance period of minimum 40 years. If the insurance period is shorter, the basic pension will be proportionally reduced.

58. The full basic pension equals 100% of a basic amount, named G, which is NOK 60 699 on 1 May 2005 and NOK 60 059 on average for 2005. However, the full basic pension will be 85% of the G if the pensioner's spouse (or a cohabitant whom he/she previously was married to, has children together with or has been living with for at least 12 of the last 18 months) receives a pension or has a yearly income exceeding 2 times G.

59. People with earnings exceeding the basic amount for any three years during their working life receive an earnings-related pension (the supplementary pension). Those pensioners who have no or only a small supplementary pension are entitled to a *special supplement* from the National Insurance Scheme (NIS). The basic pension and the maximum special supplement together form the *minimum pension*.

60. A full special supplement is paid, if the insurance period is at least 40 years and it is reduced proportionally for shorter periods. The special supplement is targeted against the earnings-related pension. For an unmarried pensioner or a pensioner whose spouse is not a National Insurance pensioner, the special supplement equals 79.33% of G. If the supported spouse is 60 years or older, the special supplement equals 158.66% of G. If both spouses receive a minimum pension, the special supplement is the same as for singles, *i.e.*, 79.33% of G each. For a pensioner married to a pensioner who has a supplementary pension which is higher than the special supplement, the special supplement equals 74% of G. However, the total supplementary pension and special supplement shall not represent a lower amount than twice the special supplement according to ordinary rate, *i.e.*, 158.66% of G. The same provisions apply to cohabitants that previously have been married to each other or have children together.

61. The *supplementary pension* scheme was introduced in 1967 aimed at complementing the basic amount, mitigating the sharp fall in retirement income due to the low basic amount, by linking pension benefits to previous wages. About 87% of all pensioners receive a supplementary pension but only 60% are above the minimum pension. A person is entitled to a supplementary pension if his/her annual income exceeded the average basic amount (G) for any three years after 1966. The amount of the supplementary pension depends on the number of pension earning years and the yearly pension points. Pension points are computed for each calendar year based on pensionable wage multiples of G minus one. The pensionable wage is the sum of all income up to 6 G plus one third of income between 6 and 12 G. Income exceeding 12 G is disregarded. The maximum pensionable wage is 8 G but the maximum pension points, which can be credited for any single year is thus 7 G.<sup>1</sup> The average pension points of the person's best twenty income years multiplied by the supplementary pension percentage, 42%, and the proportion of pension-earning years under 40 years, provides the supplementary pension in terms of basic amounts.

62. Those born before 1937 can receive a full supplementary pension, as if based on 40 years of contributions, if they have contributed to the NIS for a long enough period. But these transitional provisions only apply to annual income up to 5 G. Persons who are taking unpaid care of children under 7 years of age and of disabled, sick and elderly persons at home are credited under the supplementary pension scheme up to 3 pension points, equivalent to someone earning 4 G.

63. *Spouse supplement*: a pensioner supporting a spouse who is not a pensioner is entitled to an income-tested supplement up to 50% of the basic amount. Incomes above the minimum pension for couples plus 25% of the basic amount are withdrawn at a rate of 50%.

64. *Child supplement*: a pensioner is entitled to a supplement of up to 30% of G for each dependent child younger than 18 years. This supplement is income tested at the same rate as the spouse supplement, but the threshold before the supplement is reduced is the minimum pension for couples plus 25% of the basic amount for each child.

65. *Survivors' benefits*: a surviving spouse is entitled to a pension that amounts to 1 G plus 55% of the supplementary pension of the deceased. When reaching 67, survivors transfer to their own old-age pension, and receive their personally acquired supplementary pension or 55% of the aggregated supplementary pension of the survivor and the deceased person's supplementary pension, if this is more favourable. Survivors' pension benefits are means tested with a withdrawal rate of 40% for income above 1 G. However, the minimum pension is always granted.

66. There is no specific housing allowance within the NIS old-age pension scheme but there are housing benefits which can be granted via the local social assistance offices in each municipality.

67. *Taxation of pensions*: there is a separate 'tax-limitation rule' for pensioners. Around half of people receiving benefits and/or pensions either pay no tax or do so under a limitation rule.<sup>30</sup> The additional allowance cannot be used along with the tax-limitation rule. Old-age pensioners and disability pensioners with income exceeding the limits for which this special tax limitation provisions apply are entitled to a special deduction in the income.

68. *Social security contributions paid by pensioners*: pension income is liable for social security at a lower rate (3%) than employees' wage earnings (7.8%). The social security contribution is not a part of the tax-limitation rule. As a result of the tax-limitation rule, pensions below NOK 121 000 in 2005 are not subject to income tax and social security contributions.

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30. The age deduction provided an additional allowance of NOK 19 368 in 2005.

## ANNEX A2

**Mandatory Occupational pension schemes reforms**

69. In the January 2004 Pension Reform Green Paper from the Pension Commission, occupational pension schemes, including mandatory ones, were discussed but no recommendation put forward. Following the Prime Minister's letter to the social partners, the Government recommends making private second tier pensions compulsory in its December 2004 White Paper on Pension Reform, with a likely minimum level of contributions, maybe rather low. The Paper proposed two main models:

70. The first version is similar to the Swedish Premium Pension Scheme, so called "Premiepensionen". A new government pension agency would administer the plan and act as a clearing house. An individual account, earmarked for old age pension, would be created with a private financial institution and participants would select how to invest their funds on a defined contribution scheme to come on top of a modernised National Insurance Scheme. The individual could select the financial manager in charge of their account or follow a government-operated investment alternative. Contributions would be withheld by employers and the tax authorities would be responsible for the collection of contributions. The scheme would apply to everyone under the same rules. The accrual of pension entitlements would be based on each person's overall wage income from all of his or her employers during the course of the year, up to a maximum amount, and not on his or her income from each employment.

71. The second version would be based on the existing tax-favored schemes and related legislation. It introduces a statutory obligation for individual enterprises to establish a supplementary old-age pension scheme. The firm could choose between establishing a defined benefit or a defined contribution scheme, and also the degree of individual choice in the defined contribution schemes. Some restrictions on overall choices (*inter alia*, a minimum contribution rate and a corresponding minimum compensation ratio) would have to be introduced in the legislation. It is assumed that it would, generally speaking, be sufficient to let employees themselves make sure that employers comply with the requirement for a minimum scheme. Employers and employees would through negotiations be able to design their pension schemes within the limits defined by the legislation, with each individual enterprise being endowed with the right to administer its pension scheme.

72. Both models could entail higher non-wage costs for companies that have not yet established such schemes, with some risks to weaken small-sized firms. As the government would like to pass this reform, so that new schemes are operational on January 2006, there are some major risks that firms might not be ready to absorb such a regulatory shock. The first model seems to be attractive from many points of view. First, a defined contribution scheme that is related directly to each individual person, and not to the employer, seems well suited for a more flexible labor market characterised by more frequent changes of employer. Second, it makes possible an easier shift of defined benefits schemes towards funded defined contribution occupational pension schemes, which may be more sustainable and adapted to more flexible labour market.<sup>31</sup> Third, such a scheme might reduce management costs for small firms<sup>32</sup> and enhance the

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31. Difficult transfers of defined benefit plans might be an obstacle to frequent changes of jobs that is feature of a more flexible labour market.

32. There should be some economies of scale due to a reduction of management costs at the firm level, because of mutualisation taken in charge by the State through the Pension Premium Scheme.

regulators' capability of control.<sup>33</sup> If extended to the public sector, it could even set the roots for a unified funded occupational pension schemes framework. The second model offers the big advantages of continuity, flexibility and devolution. Of course, it has the drawbacks that could be solved by the first model. It will also lead to a myriad of scattered occupational schemes, with maybe high fixed management fees and operating costs for small-sized firms and possible regulatory problems.

73. In May 2005, the Parliament (Stortinget) preferred to base the mandatory system on the existing voluntary tax-favoured schemes and related legislation (Model 2). Thus, the firm will be able to choose between establishing a defined benefit or a defined contribution scheme, including the degree of individual investment choice in defined contribution schemes. Restrictions on choices in the form of a minimum contribution rate and a corresponding minimum compensation ratio will have to be introduced in separate legislation.

74. The decision in the Parliament (Stortinget) includes the requirement that compulsion should be effective from January 1, 2006. However, this is a very challenging deadline on all counts. Piling up new mandatory occupational schemes before passing a complete reform of the Norwegian public pension system might give rise to an over-generous and too intricate system.

75. Life insurance companies and investment managers face some regulatory constraints to smooth their balance sheets over years. They are required for instance to guarantee a fixed return (3%) each year, and cannot afford to invest on long horizons (proportion of stocks is less than 15%, but rising, in most companies' portfolios). Besides, life insurance companies suffer from a thin bond market with no long duration risk-free bonds, which are a prerequisite to conduct a long-term asset / liability management. Because of those potential regulatory constraints and the tiny size of the Norwegian bond market, financial institutions might not be ready to face such a major development of occupational funds. Delaying the creation of these new schemes or adopting a long transition period of implementation might avoid any deterioration of the competitiveness of small-sized firms and allow a higher coherence with the NIS pension scheme.

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33. There are today 20 000 schemes in private sector firms, most of them are defined benefits. Because of this scattered landscape, adding 40 000 new schemes, would add challenging regulatory and management constraints. On the contrary, a centralized clearing house such as the Premium Pension Scheme, may allow an easier access to financial and accountancy information.

## ANNEX A3

**Implementing notional accounts in Norway: a technical discussion**

76. As the Pension commission and the White paper's proposals have been partially inspired by the Swedish pension reform, this appendix gives a technical overview of the Notional Defined Contribution schemes as it might be implemented at best in Norway and how this new scheme could be compared to its Nordic model.

**A short reminder of the Swedish Pension Scheme**

77. The Swedish pension reform initially proposed in 1994 was only passed in 1998, due to a lack of political support. Sweden followed Latvia, Poland and Italy which were the first countries to introduce such individual accounts in the early 90's. In 1994, the old ATP<sup>34</sup> Swedish point system had become too costly and faced major risks of non sustainability with an ageing population. Besides, old age persons' incentives to work were considered to be enhanced through a strengthened link between lifetime earnings and pension entitlements.

78. Described in Disney (1999), the new Swedish public pension scheme is composed of a means-tested guarantee pension and an income pension on top. The supplementary pension scheme takes the form of a system of individual accounts, into which contributions are paid, between a floor and a ceiling, proportional to earnings at a 18½ percentage rate. 16 percentage points finance the pay as you go system in a NDC (Notional Defined Contribution) account. These contributions are credited to workers' notional accounts, that is to say, accumulated in a virtual capital account, with an imputed rate of return  $\rho_k$ , earning them pay-as-you go pension rights. 2.5 percentage points are invested in a private Funded Defined Contribution (FDC) account centralized in a so called Pension Premium Scheme ("Premiepensionen"), earning the financial markets' rate of return.

79. From the age of 61, it is possible to work and draw a pension at the same time. The pension can be drawn at 100% or partially in steps at 75%, 50% or 25%, and combined with a full-time or part-time work, without any upper limit age of retirement. The targeted minimum pension benefit cannot be paid before the age of 65 contrary to the earnings-related pension.

80. In the Swedish system, some periods of economic inactivity are virtually credited: for women bringing up young children, periods of unemployment, sickness and disability, periods of military conscription and post-school education. As underlined in Disney (1999), while demographic and productivity shocks during the lifetime may be absorbed by adjustments to the revaluation of contributions and by the calculation of the coefficient of conversion, once the annuity is converted, the scheme member, is insured against demographic shocks in the form of change in longevity. Some risks remain (unforeseen longevity, productivity shock, falling participation, lower fertility rates) but are endorsed by the public budget.

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34. The Norwegian government mimicked the old ATP Swedish when the NIS scheme was implemented as a quite a less generous copy in 1967.

### Modelling Notional Defined Contribution schemes

81. Assume that an individual born in  $g$ , who started working at the age 0 and aims at retiring at age  $a$ . Let  $\theta$  be the total contribution rate,  $w_k$  the annual earnings at the date  $k$  and  $\rho_k$  the rate of indexation of accrual rights (both wage earnings in the proposed Norwegian and the Swedish systems). If we note respectively  $K_{a,g}$  the fictitious accumulated individual capital,  $P_{a,g}$  the pension,  $c_{a,g}$  the “life expectancy divider or so called actuarial coefficient of conversion”, then, the fictitious capital is calculated as follows:

$$K_{a,g} = \sum_{k=0}^a \theta \cdot w_k \cdot (1 + \rho_k)^{t-k} \quad (1),$$

and a simple relation holds:

$$P_{a,g} = c_{a,g} \times K_{a,g} \quad (2)$$

82. Whatever the age the individual retire, the virtual capital is supposed to self-finance the whole period of retirement that is, the virtual capital should equal the expected discounted flow of pensions:

$$K_{a,g} = \sum_{j=a}^d \frac{S_{a+j,a,t} P_{j,g}}{(1 + \pi)^j} = \sum_{j=a}^d \frac{S_{a+j,a,t} P_{a,g} (1 + r)^j}{(1 + \pi)^j} \quad (3),$$

$\pi$  is the discounting rate of the pension scheme (it measures an implicit real return of the pension system),  $r$  the projected indexation rate of pensions.  $S_{a+j,a,t}$  is the conditional survival probability associated at the year  $t (= a + g)$ , and  $d$ , the ultimate date of death, such as:

$$S_{a+j,a,t} = \frac{L_{a+j,t}}{L_{a,t}},$$

with  $L_{a,t}$  the number of persons alive of the age  $a$  at year  $t$ .

83. As shown in Vernière (2001), following (2) and (3), the “life expectancy divider”<sup>35</sup> can be calculated as:

$$c_{a,g} = \frac{P_{a,g}}{K_{a,g}} = \frac{1}{\sum_{j=a}^d \frac{S_{a+j,a,t} (1 + r)^j}{(1 + \pi)^j}} = \frac{1}{\sum_{j=a}^d \frac{S_{a+j,a,t}}{(1 + s)^j}} \quad (4),$$

with  $\frac{1}{1 + s} = \frac{(1 + r)}{(1 + \pi)}$  the implicit actuarial discounting rate. Note that for small values:  $s \approx \pi - r$ .

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35. In practice, calculations are quite more complicated due to the necessity of taking into account implicit entitlement rights of the survival pension for a couple.



84. The “life expectancy divider” is thus decreasing in the life expectancy. The latter should be a major source of improving sustainability, taking into account any foreseen deterioration of dependency ratios. This coefficient of conversion is also increasing in the discounting rate  $s$ : that is decreasing in the pension indexation rate  $r$  and increasing in the discounting rate  $\pi$  of the scheme.

- If  $s = 0$  ( $r = \pi$ ), the actuarial discounting rate is null and the coefficient of conversion is strictly equal to the inverse of the life expectancy at the retirement. *That seems indeed to be the Norwegian White paper’s proposal:*

$$c_{a,g} = \frac{P_{a,g}}{K_{a,g}} = \frac{1}{\sum_{j=a}^d S_{a+j,a,t}} = \frac{1}{LE_{a,t}},$$

- If  $\pi > 0$ , and  $r = 0$ , (to a certain extent, the case of the Swedish rule), the discounting rate must be equal to the tax base’s growth rate, which must be forecasted. The Swedish system retains a rate of 1.6% based on historical records of real wage growth.

85. By definition, the choice of the “life expectancy divider” is bounded:

$$c_{a,g}(r = \pi) < c_{a,g}(0 < r < \pi) < c_{a,g}(r = 0).$$

86. Pedersen (2004) offers a summarized comparison of the Swedish NDC and a reform close to the Norwegian White paper’s proposals. The main differences, detailed in Table A3.1 can be summarized as follows:

- an absence of a funded component,
- an absence of an automatic balancing budget procedure,
- a higher minimum pension benefit and ceilings,
- a higher age of retirement,
- a more generous indexing rule on minimum targeted pensions.

### Technical choices and their consequences in term of actuarial fairness

87. Let start from two individuals with identical features, but only differing by the pension scheme (the Swedish and the possible Norwegian ones). In the case of the Swedish system, *a positive discounting rate leads to an initial higher replacement rate than in the Norwegian White paper (2004) proposal*, but the rule of indexation of pensions is not far from a pure indexation on prices,<sup>36</sup> leaving pension close to a constant level in real term. In the case of the Norwegian White paper’s proposal, the initial replacement rate may be lower, but pensions are indexed following an indicator representing part of the purchasing power of contributors (as the Norwegian parliament decided in May 2005 to index pension benefits on a 50/50 average of wage and price inflation).

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36. Real pensions are on average assumed constant as pensions are indexed according the following rule : Wage growth -1.6%.

88. Given the same financial constraints, these different choices imply a trade off: the lower the pension indexing rule—the higher the replacement rates and the more favored are pensioners with low life-expectancy compared to those enjoying a higher life expectancy.

**Table A3.1 A summary of core features and parameters of the Swedish pension scheme and the possible new Norwegian NIS scheme**  
Among male and female pensioners: prognosis for the year 2050

	<b>The Reformed Swedish System</b>	<b>The Norwegian Reform Proposal</b>
Main components	NDC+FDC+minimum pension guarantee	NDC+minimum pension guarantee
Contribution rate	16% (NDC)+2.5% (FDC)	17.5% (NDC)
Contribution ceiling	317 000 SEK** (=30 000 EURO-PPP)	455 000 NOK** (=42 000 EURO-PPP)
Indexation of accrued NDC-rights	Wage index*	Wage index
Normal retirement age (early retirement age)	65 (61)	67 (62)
NDC annuity divisor	Remaining life-expectancy, frontloading an annual 1.6% increase in benefits	Remaining life-expectancy
Indexation of NDC-benefits after retirement	Wage index*-1.6 %	Average of wage and price index
Relation between the NDC scheme and the state budget	Autonomous	Integrated
Hard budget-line on pension expenditures	Yes, with automatic implementation*	Vague guidelines without automatic implementation
Level of minimum pension guarantee	85 000 SEK (=8 000 EURO-PPP)	102 000 NOK (9 400 EURO-PPP)
Taper of minimum guarantee against NDC-benefits	Initially 100%, then 48%	Initially 100%, then 60%
Indexation of minimum pension guarantee	Price index	Wage index adjusted for increases in longevity
Implementation time frame: cohorts fully (partly) affected by the new system	1954+(1938-53)	1965+(1951-64)

Source: Pedersen (2004).

\* In case of financial deficit both accrued pension rights and running benefits will automatically be under-indexed until financial balance is restored.

\*\* November 2004 data.

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