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SHOULD PENSION SYSTEMS RECOGNISE "HAZARDOUS AND ARDUOUS WORK"?

Asghar Zaidi and Edward Whitehouse

Asghar Zaidi and Edward Whitehouse are principal administrators in the Social Policy Division of the OECD. The authors are grateful for comments from a number of colleagues and to the Delegates of the OECD Working Party on Social Policy, which discussed the paper in November 2008.

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TABLE OF CONTENTS

SUMMARY	4
RESUME	5
I. INTRODUCTION: PENSION COMPENSATIONS FOR WORK-RELATED RISKS	6
II. JUSTIFICATION FOR SPECIAL PENSION SCHEMES	7
2.1 Public policy response to work-related risks	7
2.2 Early retirement to compensate for shorter life expectancy	8
2.3 Role of other social policies	10
III. SPECIAL PENSION SCHEMES IN OECD COUNTRIES	11
3.1 Specific examples	11
3.2 Special pension schemes in OECD countries	12
3.3 Features of RER pension schemes	17
3.4 Funding sources	20
IV. QUANTIFYING THE VALUE OF SPECIAL PENSIONS	23
4.1 Replacement rates under special pension schemes	24
4.2 Pension wealth under special pension schemes	24
V. CONCLUSIONS AND RECENT REFORM ACTIONS	28
5.1 Conclusions	28
5.2 Recent reform actions	29
REFERENCES	34
ANNEX A: COUNTRY-BY-COUNTRY DESCRIPTIONS OF SPECIAL PENSIONS SCHEMES	35
A.1 Belgium	35
A.2 France	37
A.3 Hungary	38
A.4 Finland	42
A.5 New Zealand	44
A.6 Norway	46
A.7 Portugal	47
A.8 Poland	50
A.9 Slovakia	52
A.10 Spain	53
Tables	
Table 3.1: Special pension schemes for hazardous or arduous work	13
Table 3.2: Typical features of special pension schemes for workers in hazardous or arduous jobs	18
Table 4.1. Replacement rates and pension wealth under general pension programmes and special rules for workers with hazardous or arduous jobs	25
Table 4.2. Differences in life expectancy to equalise pension benefits	26
Boxes	
Box 3.1 Jobs referred to as hazardous or arduous in selected OECD member countries	12
Box 3.2: Definitions of hazardous or arduous jobs adopted in selected OECD countries	16
Box 4.1 A brief guide to the OECD pension models	23

SUMMARY

1. Special pensions for workers in hazardous or arduous jobs have long been a feature of the pension landscape and, recently, they are the subject of a great deal of debate in the pension arenas of many OECD countries. Such pensions are historically rooted in the idea that people who work in hazardous or arduous jobs – say, underground mining – merit special treatment. The rationale for this scheme is that hazardous or arduous work increases mortality and reduces life expectancy, thus reducing the time during which retirement benefits can be enjoyed. This results in such workers being made eligible for earlier access to pension benefits than otherwise available in that country's general pension scheme.

2. This paper discusses the incidence, structure and justification of these special pension schemes in OECD countries. It provides a description of the type of workers who are covered in these pension schemes, and outlines various degrees of pension privileges that are on offer. It also offers a quantitative value of additional pension wealth that workers in special schemes are entitled to. The conclusions are given at the end, along with a description of recent reform actions that has taken place in some OECD countries.

3. By focusing on both practical and conceptual issues that such special pension schemes present, a general summary of major considerations on these issues are given in this paper. A number of broad conclusions can be drawn from the narrative included in this paper:

- These special schemes are justified only for narrowly defined groups who continue to face the risk of a premature mortality due to exposure to hazardous or arduous working conditions.
- That said, in general there is a weak case for either maintaining or introducing special pension schemes for workers in hazardous or arduous jobs. The continuance of these schemes owes more to institutional resistance to change than their usefulness as a supplementary public pension scheme.
- It is also argued in cases where such work related health risks are recognised, they can be better dealt with some well targeted conventional social policies, such as unemployment benefits (with job-search requirements) and disability pensions or work-related sickness benefits, on case-by-case bases.
- If privileges of early retirement are to be continued for some occupations or jobs, they should be financed based on contributions by employers and employees.

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Keywords : pensions ; working conditions ; hazardous jobs ; arduous jobs.

RESUME

4. Les régimes de retraite spéciaux pour les professions dangereuses ou pénibles existent de longue date. Depuis quelques temps, ils suscitent de multiples débats dans de nombreux pays de l'OCDE. Ces régimes ont pour origine l'idée selon laquelle les personnes qui exercent un métier dangereux ou pénible, l'exploitation minière souterraine par exemple, méritent un traitement particulier. Cette idée se justifie par le fait que ces métiers augmentent la mortalité et diminuent l'espérance de vie, réduisant ainsi la période pendant laquelle les personnes qui les exercent peuvent profiter de leurs prestations de retraite. C'est pourquoi elles ont le droit de partir à la retraite avant l'échéance fixée par le régime de retraite général national.

5. Le présent rapport analyse l'incidence, la structure et la justification de ces régimes de retraite spéciaux dans les pays de l'OCDE. Il énumère les professions couvertes par ces régimes, et décrit les différentes sortes de privilèges existants. Il présente également une évaluation quantitative du patrimoine retraite supplémentaire auquel ont droit les travailleurs relevant des régimes spéciaux. Les conclusions formulées en fin de document s'accompagnent d'une description des réformes récemment mises en place dans certains pays de l'OCDE.

6. Le rapport examine à la fois les problèmes pratiques et conceptuels que présentent ces régimes spéciaux, et fournit ainsi une synthèse générale des principales considérations concernant ces questions. Plusieurs conclusions d'ordre général peuvent être dégagées de l'exposé qu'il contient.

- Ces régimes spéciaux ne se justifient que pour des groupes étroitement définis qui restent confrontés au risque de mortalité prématurée en raison de la dangerosité ou de la pénibilité de leurs conditions de travail.
- Il n'en demeure pas moins que les arguments à l'appui du maintien ou de l'instauration de régimes de retraite spéciaux pour les personnes exerçant des métiers dangereux ou pénibles sont faibles. Leur maintien tient davantage à la résistance institutionnelle à leur réforme qu'à leur utilité en tant que régime public de retraite complémentaire.
- Par ailleurs, quand les risques pour la santé des personnes exerçant ses métiers sont avérés, des politiques sociales classiques bien ciblées, telles que les prestations chômage (avec obligation de recherche d'emploi), les pensions d'invalidité ou les prestations de maladie professionnelle permettent de traiter plus efficacement chaque cas sur une base individuelle.
- Si la retraite anticipée doit être maintenue pour certains métiers ou professions, elle devrait être financée par les cotisations patronales et salariales.

JEL classifications : H55 ; J81

Mots clé : retraites, conditions de travail, emplois à risque, pénibilité du travail

I. INTRODUCTION: PENSION COMPENSATIONS FOR WORK-RELATED RISKS

7. The phenomenon of “hazardous” or “arduous” work is commonly referred to by its French equivalent “*pénibilité*”. In this paper, the special pensions provisions granted to workers because of the hazardous or arduous nature of their work will also be referred to as risk-related early retirement (RER) schemes.

8. What qualifies as hazardous or arduous work? This simple question does not admit a straightforward answer. In the review of examples of jobs or occupations commonly referred to as hazardous or arduous in a selection of OECD countries, the list obtained is quite varied and does not lend itself to an easy definition. It is not easy to pin down the definition at a country level, let alone seek a definition that can be applicable across OECD countries.

9. Clearly, however, the hardships experienced in a hazardous or arduous work environment can be physical or mental, or some combination. These hardships can result in a deterioration of health of workers in question, which may not become apparent at the time of exposure. It can make it difficult for workers to continue to carry out the same job or remain in the same occupation. It can lead to a loss of productivity due to sickness and/or result in a work-related disability. Or, its impact can be realised in the form of a premature mortality.

10. This paper reviews the salient issues linked with the issues of special pension schemes for workers in hazardous or arduous jobs, and is organised as follows. **Section II** considers the current use of these pension schemes in the OECD member countries, and outlines the various justifications for their continuance, along with the structural objections that they raise. **Section III** presents the salient features of such pension schemes adopted in selected OECD countries. It sets out the broad categories of work to which such pension privileges are commonly awarded. Next, it discusses how countries take into account the phenomenon of hazardous or arduous work in their pension policy. This is followed by a discussion on the financing methods of these early retirement pension provisions. **Section IV** quantifies the value of additional pensions that are on offer in typical early retirement schemes in selected OECD countries. Lastly, in **Section V**, the paper concludes, including a brief description of policy reforms undertaken in some selected OECD countries.

11. Country-by-country descriptions of special pension schemes for hazardous or arduous work are contained in the annexes at the end of the paper.

II. JUSTIFICATION FOR SPECIAL PENSION SCHEMES

2.1 Public policy response to work-related risks

12. The conventional justification for RER pension schemes can be summed as the award of a pension benefit as an exchange for work-related risks that impinge on the length of one's working life, and which also may impact negatively on the worker's life expectancy. Public pension policy can address the issue of differential mortality by adjusting the pension eligibility age for those who have a higher risk of a premature mortality.¹ The other obvious public policy is one that guarantees as a right all essential regulations towards prevention of injury, ill-health or stress arising out of work.

13. Most countries' Health & Safety regulatory systems already deal with the prevention and control of health risks at work, and in most instances, this is done without a specific reference to "pénibilité". Despite stringent Health & Safety regulation, working conditions in some very specific jobs will nonetheless remain hazardous or arduous. For example, all possible health risks associated with the jobs of fire-fighters cannot possibly be ironed out by enforcing stringent Health & Safety regulations alone. In which case, public policy needs to ensure that these workers are compensated for the risks they take on to carry out their jobs.

14. The simplest form of compensation for the risk of hazardous or arduous work would be the award of a wage premium to those workers affected, and this is indeed the case in many jobs that are identified as hazardous or arduous.² However, where one aspect of the risk is a shortening in these workers' life expectancy, or poorer health during later stages of their working lives, it would be understandable if workers are offered some of the compensations in the form of early retirement. The take up of early retirement options might actually be preferred by some workers even in situations where the immediate wage premiums are on offer for their work.³

15. Thus, many OECD countries have legislative set-ups in their pension policy dealing specifically with dangerous working conditions and considered them a factor in determining the pension eligibility age of such workers. There are various special schemes in a number of OECD countries that currently allow workers in certain jobs, occupations or industries to enjoy a higher pension accrual rate for each year of contribution and thus they are able to take an earlier retirement from the labour market for retirement with a pension fuller than otherwise possible.

16. The RER schemes provide a mechanism to compensate workers in two types of situations. Firstly, working conditions in many specific jobs impact on the health of workers and the effect reduces their working careers due to disability or sickness and/or it leads to premature mortality. Secondly, there are also jobs of the nature which workers may not be able to perform as they get older. These workers are

1. See Whitehouse and Zaidi (2008) for a discussion on the issue of mortality differentials across socio-economic groups and their implications for pension policy.

2. The only reason why such wage premia would not exist is if there is an excess labour supply in the labour market. This excess labour supply problem is not expected to be the case in many OECD countries.

3. As discussed later in the paper, this substitutability between current wages and future early retirement rights becomes a particular issue in justifying the economic rationale behind the RER schemes.

also allowed to take on early retirement provisions. There are a number of issues in justifying the economic rationale underlying these schemes, for both types of workers, and the rest of this section discusses these issues in more detail.

17. The first observation is that no generic rigorous justification of special pension schemes for workers in hazardous or arduous occupations can easily be stated and applied across the countries under review. This is partly because their development is based in the history of each country's schemes – in most instances, they came into existence as a rough-and-ready response to what was considered to be a risk-bearing occupation at the time the pension system took shape. Some of these occupations were inherently dangerous (such as underground mining), some could not be performed in older age (e.g. airline pilots) and some were culturally protected as well (e.g. bullfighters, musicians).

18. There have also been political reasons underlying introduction of some of these schemes, where a specific sector was granted pension privileges to win political favours. At times, these measures were also introduced to give boost to employment within a specific sector (e.g. school teaching), but then the privileges remained in place. Thus, a case-by-case approach had been adopted in granting special pension treatment to these workers.

19. A similar feature has been the application of the pension policy in each country: so, in Poland, journalism and teaching are considered risk-bearing occupations that are the subject of special pension privileges, while in Portugal they are considered neither risk-bearing nor relevant to public pension policy. Likewise, an acrobat in one country might be in a risky occupation, whereas his counterpart in another may not be, partly due to more stringent Health & Safety provisions. These considerations serve as a backdrop to a more detailed discussion in this section on the justifiability of special pensions for workers in hazardous or arduous jobs.

2.2 Early retirement to compensate for shorter life expectancy

20. If shorter life expectancy is indeed an outcome of a hazardous or arduous working career, and it can be measured *ex-ante* with a good degree of accuracy, one can argue that these workers also deserve an equally long retirement period as other workers, and thus they should continue to retire sooner than others.

21. Early retirement for those with shorter-than-average life expectancy is justified as follows. The pension eligibility age of a general public pension scheme is determined, as a rule, by the average life expectancy. If such a scheme is applicable across-the-board, and it includes those workers who have a risk of premature mortality because of the nature of their work, the pension benefits available to those who have a shorter-than-average life expectancy are systematically smaller. One response to mitigate the pension effect of lower-than-average life expectancy is to allow an earlier access to pension benefits, and this is how special early retirement schemes for workers in hazardous or arduous jobs come into play.

22. However, the most common form of compensation for hazardous or arduous work is that these workers are rewarded with a wage premium. But, early retirement pension privileges can also be seen as another form of wages: workers forego today's wages for pension benefits of the future. Thus, in cases where wage premiums are received along with a right to retire early, this can arguably be construed as a double benefit to workers in these jobs. The distinction to be borne in mind is that benefits of extra pay for the risk arise out of the wage-setting mechanisms of the labour market, and the benefit of earlier retirement is subsidised out of the public pension purse.

23. What happens if the hazardous or arduous work is reflected in the pension system as well as in wages? Within the functioning of a competitive labour market, the double benefit phenomenon might disappear over time: the wage differentials eroding over time as the early retirement benefits make these

jobs relatively more attractive. The net impact is effectively a wage subsidy to employers of people working in these more favoured occupations, potentially preserving or expanding an area of employment that would have otherwise contracted in size.⁴

24. Another way to compensate workers in hazardous and/or arduous occupations is to implement stringent Health & Safety legislation. Preventive actions towards risk avoidance in working environments have taken place in many countries since special early retirement schemes have been put in place. A monitoring and evaluation system must be in place to re-assess on a case-by-case basis whether the job or occupation can still be identified as hazardous or arduous to its workers.

25. One pragmatic concern, however, is that a general definition of arduous or hazardous work which is fitting, executable and maintainable is very difficult to achieve, let alone applied consistently and fairly within a public pension system. This is true particularly in cases for workers whose earlier retirement is offered on the grounds that the preferred job or occupation cannot be continued by the worker because of his/her age.

- *Firstly*, it is difficult to determine objectively the list of jobs that cannot be done until the normal retirement age. Even within certain professions and taking into account restrictions of a physical or stressful nature of the job, there are no scientific grounds to determine objectively retirement dates essential for specific types of jobs.
- *Secondly*, if one cannot continue to perform a specific job at a certain time, this has no relevance to the possibilities to perform another, less arduous, job. The choice should be between different sorts of jobs and not between work and retirement.
- *Thirdly*, supposing a list of pénible jobs can be established objectively (based on legal criteria), there will be a certain possibility that such a list would expand continuously due to legal procedures. The job descriptions on such a list will have to be very detailed (as even comparable jobs can differ largely between industries) which would also lead to enormous administrative difficulties.

26. There is the additional issue that people will not necessarily hold the same job, pénible or not, during their entire working life. So, how to take into account the various periods spent in hazardous or arduous job is very complex. In actual practice, most schemes take into account not only the situations in which someone performed such a profession during his/her whole working career but also all sub-periods when someone was exposed to a pénible job. The RER schemes are mostly such that the reduction in retirement age is in proportion to time spent working in a hazardous or arduous job (see section III for more discussion on scheme-specific details in selected countries).

27. One other concern is towards the size of sectors with hazardous or arduous jobs. The RER pension privileges can inhibit genuine market driven reductions in the size of these sectors. In the natural decision making towards labour supply and take-up of jobs, workers tend to shy away from jobs which are of poor quality, meaning that factor costs in that sector are higher. Market forces, combined with well-enforced Health & Safety regulations, should in principle “squeeze” the profitability and hence the size of sectors which rely on hazardous or arduous work. If *public* funds are used to subsidise early retirement of workers in such sectors, the risk is that they work against market forces, and preserve poor quality jobs which should be phased out.

4. The exceptions are those schemes that are financed completely out of contributions by employers and employees.

28. Finally, in many countries, many of the categories of workers benefiting from early retirement on grounds of *pénibilité* are not working in jobs which are hazardous or arduous any more. This problem is inevitable in any system that defining *pénibilité* on the basis of occupation alone, and also in countries where there is a system of own-assessment of jobs or occupations. If, despite the risks of perpetuating bad jobs, *pénibilité* pensions are considered necessary, it is imperative to define them on the basis of transparent and objective criteria so that as Health & Safety improvements take place, and as the need for special pension measures declines, such pensions are automatically ended.

2.3 Role of other social policies

29. There are also other mechanisms in many OECD countries by which earlier retirement is possible on account of workers' ill health: disability benefits, old age pensions for inability to work, long-term sickness leave, pensions for workplace accidents and occupational illnesses, etc. The distinction between these and the RER schemes is that these other schemes are offered on individualised bases, and thus are likely to target better those who are in need of a special early retirement treatment. Thus, only those workers will have a case for an early retirement who are disabled or sick, have a reduced work capacity or cannot find a suitable job in later stages of their working lives.

30. Disability pensions and sickness benefits are in fact commonly used alternatives by which older workers with serious health problems are allowed to stop work before the normal retirement time. Thus, the argument would appear to be that many welfare systems in OECD countries already have systemic protection for those who are unable to perform their jobs due to health problems.⁵ A good policy practice in this respect would be to discourage a full withdrawal from work until the normal retirement age: workers are encouraged to work to the extent they can and get support to do so through social policies such as unemployment policies, and/or disability or sickness benefits policies.

31. The other polar position is demonstrated by those workers who cope well and have no health problems of the sort that limit their work productivity or reduce life expectancy. They get a special early pension under RER schemes which they do not need. Following these normative arguments, it seems out of proportion to assign early retirement provisions to all workers of a job, occupation or industry because some of them might suffer exposure to arduous or hazardous work environment. Yet, these special schemes appear to be able to exist under the slogan of "an injury to one is an injury to all".

32. All such pertinent issues – how to define and justify for RER schemes, how best to account for early mortality risk of workers in these schemes, and how to fund these pension privileges – have been addressed by countries that currently have the RER pension schemes or they are considering introducing it. The next section of the paper reviews these practices. Policy reform actions taken by various countries are discussed in the final part of the paper.

5. The underlying assumption here is that all those who have a risk of premature mortality due to hazardous or arduous nature of their work will show early signs of it in the form of morbidity or disability during late in one's working life.

III. SPECIAL PENSION SCHEMES IN OECD COUNTRIES

3.1 Specific examples

33. Spain provides a good starting example: ballet dancers and some categories of circus artists are allowed to retire at the age of 60 (instead of 65) with a full pension if they have a minimum period of activity of 8 years. Bullfighters may retire at the age of 55 or 60 if a minimum number of performances (i.e. bullfights) have been completed. Such early retirement provisions are mainly due to exposure of these workers to a stressful and to some degree physically dangerous work environment, which makes the job both physically and mentally demanding. Moreover, the nature of their profession is such that they cannot maintain a satisfactory performance level as they get older. Thus, instead of a change to another, less arduous, job, these workers are given the option under the RER schemes to take up pension benefits.

34. Airline pilots in Portugal and in some other countries also fall in a similar category, as in their case it is also to do with the presumption that they are not able to bear the professional rigours of their duties at older ages – a supposition that their reaction time to deal with emergencies would be slower as they reach beyond a certain age. But, again, there is no reason why older airline pilots could not undertake other forms of work within or outside their own industry. Can an appropriate on-the-job training, with suitably modified work tasks and work places, not allow these older workers to continue working? In fact, they are such qualified workers that many of them do find other jobs and go on to enjoy additional earnings as well as early pensions.

35. Underground mine workers in most countries also typically receive such pension privileges in many of the countries listed in Box 3.1. And, here the connection is more directly referable to the health and early mortality risks that the job they undertake entails. Hazardous working conditions reduce average life expectancy of these workers. Other such examples include marine workers who stay away from the family for long durations of their assignment on ships and vessels, often at harsh work environment in open seas.

36. Against these examples, there is a counter-example in France, where the earlier permitted exit from the labour market of the railway workers of the S.N.C.F. (the French national rail company) found its legitimacy in the deteriorating health of railway workers because of the danger of inhaling ashes. The legislation came into effect soon after the World War I, since which time trains have become electric, but the privileges of *pénibilité pensions* have remained. Here, the problem is that such advantages became part and parcel of terms of employment in the sector concerned, and thus was politically and administratively very difficult to remove them.

Box 3.1 Jobs referred to as hazardous or arduous in selected OECD member countries

Country	Types of occupations covered
Belgium	<p>Private sector workers</p> <ul style="list-style-type: none"> Miners Marine workers Flight crew of the civil association <p>Public sector workers</p> <ul style="list-style-type: none"> Armed forces Police force Teachers Other services (custom, water and drills, etc.)
Hungary	<p>Early retirement provision is applicable to over 800 jobs, the major groups of which includes:</p> <ul style="list-style-type: none"> • Work carried out underground, at drilling rigs, in compressed air, in thermal operations, in the electricity industry, in the textile industry, in the baking industry, in cold storage plants, under exposure to ionising radiation, in transportation, in civil aviation, in the explosives industry, as well as certain occupations of civilian employees in the Hungarian Armed Forces.
Poland	<ul style="list-style-type: none"> • Miners, and also persons working with lead, cadmium or asbestos
Portugal	<ul style="list-style-type: none"> • Miners who work in the interior of mines
New Zealand	<ul style="list-style-type: none"> • Police and Armed Forces • Firemen • Airline Pilots and Train Drivers
Slovakia	<ul style="list-style-type: none"> • Employees working as performing artists (e.g. dancers)
Spain	<ul style="list-style-type: none"> • Coal miners and Seafaring workers; • Air crew, Railway workers, • Artists, Bullfighting industry workers

* for details, see the country-specific details available in Annex A.

3.2 Special pension schemes in OECD countries

37. Table 3.1 lists that as many as 18 OECD member countries have special pension schemes that cater for those in hazardous or arduous work conditions.⁶ The most common form is that of a collective concession, where a whole sector (such as underground mine workers, sailors, airline workers and artists) is granted a special treatment in the calculation of pensions and thus provisions towards earlier retirement.

38. For half of all OECD countries, there are no special provisions for any job, occupation or sector in their public pension schemes. However, as seen above, in some countries, public sector workers in

6. This information has been collected using a specific questionnaire, which was completed by the delegates to the OECD Working Party on Social Policy during Summer 2008.

hazardous or arduous jobs enjoy early retirement privileges within the public sector pension schemes (e.g. fire workers, police and armed forces). Likewise, private occupational pension schemes for workers in specific sectors offer more generous accrual rates for each year of work on account of pénible nature of the work. Such private pension privileges are common in the United Kingdom and the United States, where workers who have early retirement from a private occupational scheme often go on to work in other sectors, continuing to build public pension rights while combining a private pension receipt with earnings.

Table 3.1: Special pension schemes for hazardous or arduous work

Country	Whether special pension schemes are offered at all?	Early retirement concessions because of workers' jobs, occupations or industry?		
		Job	Occupation	Industry
Australia	×			
Austria	✓	✓		
Belgium	✓	✓	✓	
Canada	✓		✓	
Czech Republic	×			
Denmark	×			
Finland	✓		✓	✓
France	× ¹		✓	
Germany	×			
Greece	✓	- ³	-	-
Hungary	✓	✓		
Ireland	✓	✓	✓	
Italy	✓	✓	✓	
Japan	×			
Luxembourg	✓	✓		
Mexico	×			
Netherlands	×			
New Zealand	✓		✓	
Norway	✓	✓	✓	
Poland	✓	✓	✓	✓
Portugal	✓	✓	✓	
Slovak Republic	✓	✓		
Spain	✓	✓	✓	
Sweden	×			
Switzerland	×			
Turkey	✓		✓	✓
United Kingdom	✓ ¹		✓	
United States	✓ ¹		✓	

✓ Yes × No - Not applicable

¹ Although there are no special provisions for any job, occupation or sector in its public pension schemes, some public sector workers have pension privileges in their private occupational pension schemes (e.g. fire workers, police and armed forces).

² No detailed information is available for Greece.

³ No information is available for Korea and Iceland.

39. A special mention for France is warranted here, given that a transition process is currently underway. A number of special public-sector schemes provide supplementary benefits to certain categories

of workers recruited prior to 31st December 2008. As from 2009, the circumstances of such workers will be determined in negotiations by the social partners and on a case-by-case basis.⁷ There are also currently two early-retirement mechanisms by which private sector workers are compensated for exposures to arduous and/or hazardous jobs: early retirement for certain salaried workers (*cession anticipée de certains travailleurs salariés*, or CATS for *pénibilité*); and early retirement for asbestos workers. The population subgroup affected by these private sector schemes is rather small.

40. If pension systems are to be adjusted to take account of hazardous or arduous work, it is of central importance to determine objectively who are subject to ‘pénible’ jobs. Countries have adopted various different definitions in legislating provisions towards special pension schemes for workers in hazardous or arduous jobs. Below, these definitions are summarised for a number of OECD countries, but the most usual means of determining pénible jobs are:

- Classification by “job nature” as perceived and understood within country-specific legislative bodies; and
- Determination by definitions based on objective measurement methods.

41. There are numerous types of workers in OECD countries who have been identified as experiencing hardships by the legislative framework of the country in which they live, and they are rewarded by pension privileges either under a special pension scheme or by a special treatment within the general scheme. For illustration purposes, the following most notable groups are highlighted further:

- The *first* type are those who in their working life are subjected to difficult and hazardous work conditions – as exemplified by marine workers. However: work conditions in these occupations have generally improved a great deal in recent times, mainly due to technological innovations and increased levels of Health & Safety regulations. There are specific categories within this group who are subject to a greater health risk than others (e.g. underground miners) who receive a more preferential treatment. The size of these occupations is on the decline in many countries.
- The *second* type is broad, and the professions covered by it involve the undertaking of work which poses risks and challenges to the employee so much so that their working career may be shortened. They include fire-fighters, members of the police and other law enforcing authorities, and members of armed forces. Physical strength and unwavering alertness is often a pre-requirement for the type of work they undertake and they face serious challenges in continuing duties that are physically or mentally demanding, for a long time and as they get older. *Flight crew* personnel (particularly airline pilots) and flight controllers are another category of workers who fall within the type who cannot be expected to carry on working within their own specific jobs until normal retirement age. This is mainly for the fact their physical reaction time to deal with emergencies is deemed to become slower as they reach beyond a certain age.
- Similarly, performing artists, exemplified by ballet dancers, wind instrument players, etc., are not expected to continue carrying out their preferred profession beyond a certain young age. Bull-fighters can be cited in this category as well. They also run a higher risk of disability (even mortality) and they experience bodily wear and tear that could reduce their working careers considerably.
- The *third* type of workers consists of those who face low quality work conditions, typified by night workers, assembly line workers, outdoor manual workers, etc. These workers are often at a

7. These negotiations have gone on for more than three years but with no results so far.

greater risk of industrial accidents, stoppages in work, work-related disabilities, turnover due to work hardships, etc.

- Finally, the last group includes teachers and journalists and other such professions who are given early retirement concessions. Their work appears to be non-hazardous and not more arduous than most jobs, yet they are receiving pension compensations in some countries.

42. While workers' categories outlined above appear to be defined with a relatively good degree of clarity, there are many more smaller categories of workers who benefit from preferential treatment.⁸ Some countries use an objective definition based on energy consumption during labour activities of their workforce. For instance, in Hungary work performed under conditions which exceed the limits specified in the Hungarian standard, where the rate of energy expenditure is more than 5,200 kilojoules in a single shift, is deemed as arduous. Similar definitions exist in Poland and Austria (see Box 3.2 for specific details), although the qualification standard is different for each.

43. To define workers who require preferential treatment in the pension system is a complex issue, and the rationalisation process has become more difficult over time. The special schemes must be reviewed on a continuous basis to monitor whether they continue to serve the purpose for which they are brought into place.

44. Only few independent academic reviews are available but there is as yet no evidence whether they are used in the decisions towards amendments of current legislative practices. In France, the study "Exposure to work risk and pénibilité from 1994 to 2003" reports primary analysis of the SUMER survey. This is an employees' survey that first took place in 1994 and then was repeated again in 2003. It has a relatively large sample size of 50,000 workers and questions focus on four broad types of risk factors:

- **Organisational** (such as long working hours, night or weekend shifts or being in contact with members of the public),
- **Physical** (such as working in a noisy environment, working with machines, or line working),
- **Biological** (being exposed to biological agents) and
- **Chemical** (being exposed to chemical agents).

45. Results in terms of the frequency of exposure of the different risk factors are provided by industry and by occupation. Such surveys point to improvements that are necessary in the working conditions of these sectors, but, unfortunately, they do not provide information on whether compensatory wage differentials exist in these sectors and whether these workers suffer from early mortality.

46. The Survey of Health, Ageing and Retirement in Europe (SHARE) also offers data helpful towards defining a measure of pénibilité at work. The data is organised in three different dimensions of quality of work: **psychological**, **physical** and **pay**. Debrand and Lengagne (2008) use SHARE 2004 data for individuals 50-65 years old in employment to analyse how working conditions affect current health. They construct three synthetic indicators of pénibilité at work: work pressure at the job, latitude in decision

8. There are also early retirement options arising out of long careers. They are available to those who start their working career at an early age and have done well to fulfil the contributory period requirement before reaching the normal retirement period. These schemes are, in principle, not the same as the RER schemes that are the subject of this paper, for the fact that workers do not receive any preferential treatment in their pension entitlement rules.

making and reward (including salary, promotion prospects, and recognition). They also use two other indicators of working conditions: support at work and job-security. Most of this information is self-declared, so it is not that surprising that authors find a strong correlation between working under pénibilité and health.

Box 3.2: Definitions of hazardous or arduous jobs adopted in selected OECD countries

1. In Poland a job or profession qualifies as “pénible” if the daily energy expenditure consumption is above a certain threshold: 8374KJ (2,001 calories) for men and 4605KJ (1,101calories) for women. In comparison, the Austrian daily energy expenditure threshold is similar in the case of men (2000 calories) but higher in the case of women (1,400 calories).
2. In the Netherlands, the Interior Ministry has established a list of jobs qualifying as “pénible” in all public sector administration. The law VPL, which came into force on 1st January 2006, limits access to early retirement for all workers in the private sector, except to those in jobs qualified as “pénible”. Because of this reason the union FNV has been currently trying to negotiate a legal definition of “pénibilité” or painfulness.
3. In Italy, the Dini law 335 of 1996 defines the general criteria of painfulness at work and provides a list of jobs and professions that qualify as such. The inter-ministerial decree of 19 May 1999 set out a “technical scientific commission” to provide advice to an inter-ministerial group in order to set out the criteria used in the definition of “pénible” work, taking into account life expectancy, the socio-economic characteristics of the job and risks at work.
4. In Australia, an investigation determines on a case-by-case basis whether the physical and/or mental problems alleged by an employee are the result of a pénible “professional activity”.
5. In Belgium, the concept of “pénibilité” appears within the frame of the surveillance of workers’ health, and within the “Meribel Social” (which is a non-market sector system that provides fiscal incentives to employers in order to promote employment growth).

Other countries such as Sweden, the United States, Japan and the United Kingdom do not provide a specific definition of “pénible” work. In Sweden this matter is not regulated by law but it can be dealt with by social partners through regular collective agreements. In the United States, whereas there is no legal definition as such, other concepts such as “professional risk”, “unhealthy” or “dangerous” work are well defined. In Japan, a job is ‘pénible’ only for the fact that the individual does not have the capacity to undertake the job in question.

3.3 Features of RER pension schemes

47. In almost all countries, the most common benefit provided to those identified as having ‘pénible’ jobs is that of earlier retirement. A typical example is the use of a *coefficient of reduction in retirement age* for all those who have worked in arduous or hazardous jobs or occupations. The coefficient is multiplied by the number of working years in the respective job/occupation and the result is the reduction in the normal retirement age. For example, if an occupation has a coefficient of 0.5 and a worker has 10 years of service in that occupation, the reduction in the normal retirement age equals 5 years (10×0.5). In addition, there is often a limit to the earliest age of retirement, which varies by occupation/sector.

48. Again, Spain offers a useful starting example. For coal miners in Spain, the coefficients of reduction in retirement age vary from 0.5 for those individuals working underground directly extracting the coal to 0.05 for outdoor workers involved in directly mining activities. The coefficient for underground mining of other types varies from 0.2 to 0.5 (depending upon the hardship of the job), whereas the coefficient for those working in the open-air extraction mines ranges from 0.05 to 0.2.

49. Likewise, in Italy, workers receive a reduction of 2 months in the normal retirement age for each year of work considered as “particularly pénible” (with a maximum of 60 months for the public earnings related pension, 12 months for the “seniority pension”). Also, there is a reduction in the contribution of one year for each 10 years of work that is “pénible” (maximum early retirement concession of 2 years). For the NDC scheme (which is the post-reform “contribution based” public notional-account scheme), there is a reduction in the contribution of 1 year maximum for every 6 years of work considered “pénible”.

50. In Hungary, early retirement compensations are calculated differently for men and women. Men are granted an early retirement of two years after ten years in a pénible job and, then onwards, one year for each additional five years (altogether, this is equivalent to the coefficient of reduction in retirement age of 0.2). Women are granted two years of compensation for eight years and one year for each additional four years in the specified jobs (the coefficient is therefore somewhat higher for women: 0.25). All employees in jobs involving exposure to high atmospheric pressure are granted two years of compensation for six years and one year for each additional three years.

51. Another way to formulate the special pension treatment is by a *higher pension accrual rate for each year of contribution*. Thus, as in cases mentioned above, the workers concerned are able to accumulate full pension by contributing to the pension system for a reduced number of years than otherwise required.

52. In Belgium, the accrual rate is generally calculated at a rate of $1/44^{\text{th}}$ for a woman and $1/45^{\text{th}}$ for a man per calendar year of contribution; thus an entitlement to the full pension requires 44 and 45 years of career for men and women, respectively. In contrast, for miners, the full pension can be obtained at the end of 30 years of career. For sailors, the full pension could be obtained after 40 years of service - the complete pension could however be also obtained after 168 months or 14 years of service at sea. For the flight crew of the civil aviation, the rules are slightly more complicated: when at least 20 years of occupation as an operating staff are established, the retirement pension can be acquired at a rate of $1/30^{\text{th}}$ per calendar year of occupation (thus the full pension is available after 30 years of career after the initial vesting period is fulfilled). For cabin staff, the provisions are slightly less generous, with a longer period of occupation required to qualify for the special pension.

Table 3.2: Typical features of special pension schemes for workers in hazardous or arduous jobs

Country	Worker type	Age of early retirement for workers in hazardous or arduous jobs	Coefficient of reduction in retirement age	Accrual rate
BELGIUM	Miners	55 for underground miners 60 for surface miners (or at any age after 30 years of occupation as a miner)		1/30 th (per calendar year of contribution)
	Sailors	60 (or at any age after 14 years of service at sea)		1/40 th (per calendar year of contribution)
	Flight crew	55 (or at any age after 20 years of service as a flight operating staff or at any age after 23 years for others)		1/30 th for flight operating staff 1/34 th for other crew
FRANCE	S.N.C.F. (national railway workers)	55 for those who have made contributions for 25 years 50 for drivers who have been working for at least 15 years		The pension is equal to 2% of salary per year of work, with a maximum of 75% of total salary
FINLAND	Seamen	55 for crew 60 years for officers (and the pensionable age is lowered by as many months from the age of 63 that the service at sea exceeds 324 months)		The accrual rate is 0.1 percentage point higher than in the most general pension act before the age of 63
HUNGARY	Numerous types within the specified list of pénible jobs	55 (for men who are granted a compensation of two years after ten years and one year for each additional five years in the specified pénible job) 52 (for women who are granted two years of compensation for eight years and one year for each additional four years in the specified jobs)	0.20 (men) 0.25 (women)	
NORWAY	An employees working in the public sector, plus those in private firms having signed wage agreements with LO (Norway's largest trade union) to was covered by AFP - the Contractual Early retirement scheme (<i>avtalefestet</i>	In the corridor between 62 and 66		The AFP is calculated as the pension which would have been received if working until the normal retirement age of 67 and the pension may never exceed 70 percent of final

Table 3.2: Typical features of special pension schemes for workers in hazardous or arduous jobs

Country	Worker type	Age of early retirement for workers in hazardous or arduous jobs	Coefficient of reduction in retirement age	Accrual rate
	<i>pensjon</i>)			wage.
PORTUGAL	Miners working in the interior of mines (including those performing support and maintenance activities underground)	50	0.5	
	Maritime workers of the merchant navy	55		No pension reduction with 15 years of 'sea duty'
	Fishermen and seafarers	55 if they have at least 30 years of service as fishermen (150 days of service within the same calendar year is considered as one year) If service years less than 30, the retirement age is reduced by 1 year for each period of 3 years of service as fishermen (for example, a worker with 21 years of service as fishermen could retire 7 years earlier than the statutory age, i.e. at the age of 58 years)		1/30 th (per calendar year of contribution)
	Air traffic controllers	55		When 20 years of operational duty is completed
POLAND	Miners	55		Full pension to be received 10 years sooner than the normal retirement age
SPAIN	Miners (those working underground directly extracting the coal)	50	0.5	
	Seafaring workers (for a ship transporting petrol or gas)	52	0.4	
	Air transport workers (only flight crew, not stewards or stewardess)	52 (for pilots) 54 (for other flight assistants)	0.4 (for pilots) 0.3 (other flight assistants)	

53. An alternative method adopted in some countries is to grant retirement to these workers on the basis of the length of service, regardless of age at which service length requirement is fulfilled. Typical examples in many countries include fire-fighters, members of the police and other law enforcing authorities, and members of armed forces. Employees in certain artistic occupations (e.g. ballet dancers, wind instrument players, etc.) and performers (e.g. bullfighters) are also allowed to retire without regard to age but on the basis of service length.

54. For example, in Hungary, soldiers and employees in other armed forces as well as fire fighters are allowed to retire after 25 years of service, without regard to age. Employees in specific artistic occupations (e.g. ballet dancer etc.) and miners are also allowed to retire without regard to age. For these cases a minimum of 25 years (in certain cases 20) of service is required, while miners are eligible if they have completed the required number of shifts.

55. Table 3.2 summarises information on age of early retirement and various ways in which pensions are adjusted for those workers who had worked in hazardous or arduous jobs. A stylised case can be established from the information contained: a worker who had started his/her career at the age of 20 and has worked without interruption in the same job can retire about 10 years earlier than the normal retirement age if the job in question is identified as hazardous or arduous.

3.4 Funding sources

56. How countries finance such pension concessions is a central question of the issue of special concessions for hazardous and arduous work. If the cost of early retirement is entirely borne by the industry, then it is harder to get too concerned about the egregious effects of such schemes, at least if the industry is in the private sector. If, on the other hand, the industry receives net subsidies to help finance the hazardous and arduous pensions, or else the industry is in the public sector, the danger is that a risky profession is inefficiently subsidised.

57. In particular, are these schemes pre-funded or they come out of the overall social expenditure budget? This subsection provides information available on how some OECD countries, where these schemes exist, go about financing these schemes.

58. In **Belgium**, pénibilité pensions are financed by means of higher social security contributions, both by employees and their employers. The exception is the case of sailors: the social security contributions of sailors were higher in the past but they are now the same as other workers in the general scheme.

59. In **Hungary**, the costs associated with the lowered retirement age are a part of the social insurance pension system, which is financed from the Pension Insurance Fund against general pension contributions. Such expenditures amount for a few thousandths of the GDP. The mandatory private pillar does not entitle employees to any such compensation. As of 2007, extra contributions are payable for employees employed in pénible jobs, which will be levied on employers in the future. The budget will finance 100% of this extra expenditure in 2007, 75% in 2008, 50% in 2009 and 25% in 2010. From 2011, the full amount of the extra contribution (13%) will be payable by employers for employees employed in pénible jobs.

60. In **Poland**, the special early retirement provisions will be in force until the end of 2008, with the exception of miners who will retain their early retirement privileges as before. There is no special funding arrangement for pénibilité pensions – all pensions are financed from the old-age pension funds (Old-age pension fund in Social Insurance Fund, Pensions Fund in individual farmer's social insurance).

61. In **Slovakia**, performing artists are under obligation to sign up contracts for participation with a supplementary pension company (the so-called third pillar), and their employers are under similar obligation to sign up employers' contracts with the supplementary pension company. Employers must, on behalf of their employees who are performing artists, pay contributions to these supplementary pension savings. Other employees executing other types of work harmful for health also have supplementary pension saving scheme that provides additional pension benefits. The whole supplementary pension scheme is a fully funded scheme. The employees working in pénible jobs can pay as high a contribution as they prefer, but the employers with such employees must pay at least 2% of the basis of assessment of the employee.

62. In **France**, there are currently two early-retirement mechanisms in the private sector by which workers are compensated for exposure to arduous and/or dangerous jobs: early retirement for certain dependent workers (*cession anticipée de certains travailleurs salariés*, or CATS for *pénibilité*); and early retirement for asbestos workers. The CATS system of early retirement aims at encouraging employers to introduce changes at the work place and to working practices so that there is a long term improvement in working conditions. The CATS system aims at doing that by a one off agreement for a limited period of time to share the cost of pre-retirement of older workers that suffered the pénible working conditions, on conditions that changes in work conditions take place.

63. As a proposal for the reformed system in France, the employers could possibly accept a maximum of two years for early retirement (with a full pension) for workers who faced hazardous or arduous work conditions. But, workers must be willing to work part-time in that period, taking on tasks of professional teaching and training activity. The worker would be paid by the employer for the part-time and the rest would have to be financed by the public pension fund.

64. In **Finland**, for all Government sector employees who benefit from special schemes for pénible working conditions, the special pensions are financed like other general pensions, by contributions from both employers and employees. The employee contribution for the special scheme is the same as in any other scheme of public sector employees whereas the employer contribution is higher than that of any in the private sector. For the special scheme of Seamen, employers and employees have equal pension contributions and the government finances a third of the pension expenditure.

65. In **New Zealand**, Police and Armed Forces, Firemen and Airline pilots and train drivers have special occupation-based retirement schemes. They are DB schemes and DC lump sum schemes. For Police and Armed Forces, DB schemes are financed as part of the Government Superannuation Fund; this is partially pre-funded but has a large actuarial deficit. The DC arrangements are pre-funded, with contributions from both employers employees; but the employer contributions financing the insurance benefits for a medical withdrawal. and In general, the cost of both the DB and DC schemes requires around 15-17% of total salaries.

66. In **Norway**, the most relevant scheme intended to be a pension for workers in pénible jobs is the Contractual Early Retirement Scheme AFP (*avtalefestet pensjon*) – see Annex A.6 for more details. AFP is jointly funded by employers and the government. The government's contribution consists of costs of pension accrual in the National Insurance System as if the person was working until the age of 67, and roughly offering the same tax benefits to AFP pensioners as to old age pensioners. In the private sector, the government also covers 40 percent of the AFP pension costs (excluding the AFP supplement) in the period 64–66 years of age.

67. There are some variations between the AFP schemes regarding the financing of the employers' share of the AFP pension. In the private sector scheme of LO/NHO the pensioner's last employer is charged 25 per cent of pension costs, while the rest is financed by a fee per employee,

paid by all member employers in the scheme. In the two other AFP schemes in the private sector, the banking/finance scheme and the Spekter scheme, the last employer pays all costs not covered by the government. These models of financing may have led to improved working conditions for older employees, since late retirement means smaller costs for the employer, giving the employer an incentive to retain old employees. However, these rules also imply strong disincentives in hiring older workers.

IV. QUANTIFYING THE VALUE OF SPECIAL PENSIONS

68. The special rules applying to special RER schemes are country-specific, often complex, and it is therefore difficult to compare between countries. This section tries to model the value of entitlements of workers in hazardous or arduous jobs and compare them with general pension benefits. The analysis is carried out for a small selected group of five OECD countries for which we have detailed data on the special rules applicable to these workers.

Box 4.1 A brief guide to the OECD pension models

The parameters and rules of pension schemes are complex and retirement-income systems typically have multiple components. The OECD pension models aim to calculate prospective pension entitlements promised in the future to today's workers from all mandatory parts of the pension system.

Pension entitlements that are calculated and compared are based on the parameters and rules that are currently legislated. All value parameters are those for the calendar year 2006. Changes in rules that have already been legislated, but are being phased-in gradually, are assumed to be fully in place from the start. It is assumed that the pension rules remain unchanged thereafter.

The calculations show the pension entitlements of a worker who enters the system today and has a full career, defined as uninterrupted work from age 20 until the standard pension eligibility age. Although this is clearly unrepresentative of actual labour-market experience, it is the only assumption that can generate comparable results. Most pension systems provide credits for periods in education, military service, unemployment, child rearing *etc.* Simply assuming that people who are not in work are not covered during career gaps would produce misleadingly low pension entitlements for people with career gaps.

Entitlements are calculated for a single person. This is because the rules governing benefits for married couples can be very complicated and because the results depend on assumptions over both partners' career histories.

The results include all mandatory pension schemes for private-sector workers, regardless of whether plans are publicly or privately provided. Plans with near-universal coverage – more than 80% of employees – are treated as “quasi-mandatory” and so are included in the baseline results. Resource-tested benefits for which retirees may be eligible are also included and the comparisons assume that all pensioners who are entitled take up these benefits.

The comparisons are based upon a single set of economic assumptions for all countries to facilitate cross-national comparisons that reflect differences in pension systems and policies alone. The baseline economic assumptions are:

- Growth in average real earnings 2% per year
- Individual earnings in line with economy-wide average
- Price inflation 2.5% per year
- Discount rate 2% a year
- Mortality rates: country-specific projections for 2040

Source: OECD (2005, 2007).

69. The illustration is based on the parameters and rules set out in Table 3.2. The OECD pension models – described briefly in Box 4.1 – have been adapted to cover these different arrangements. The

same assumptions are used to value the entitlements of workers in hazardous or arduous jobs, notably that the individual enters the job at age 20 and retires when the qualifying conditions for early retirement (years of service and age) are met. The modelling is based on the values for parameters for 2006 and results are here presented only for average earners.

4.1 Replacement rates under special pension schemes

70. Table 4.1 sets out the results of the modelling exercise for the five countries. The top panel looks at pension eligibility ages. At the bottom of the panel, normal pension age for most workers is 65, except in Hungary, where it is 62. All five countries allow general workers to retire earlier than the normal age: at age 60 in three of them, 55 in Portugal and 61 in Spain. The top row shows the pension age for people in hazardous and arduous jobs. Some of these ages are calculated from the rules assuming that the career is spent in the job subject to special rules with entry at age 20. The pension age for hazardous and arduous schemes modelled is lower than the early retirement pension age under general rules in all countries, except in Portugal. In Italy, the difference between the two eligibility ages is just one year, whilst it is five years in Belgium and Hungary, and nine years in Spain.

71. The second panel of Table 4.1 shows net replacement rates; that is, the individual pension entitlement relative to earnings when working. The calculations are in net terms; that is, after taxes and contributions are deducted from both earnings and retirement incomes. The replacement rates are shown for the three different pension ages outlined in the top panel of the Table. They are also separated between general workers and those covered by the special rules for hazardous or arduous jobs.

72. Since it is not possible for general workers to claim the pension as early as workers in hazardous and arduous jobs, their immediate replacement rate at that age is zero, except in Portugal. The replacement rate at the normal pension age is higher than at the early pension age for general workers. Early retirement benefits are lower because of the longer duration over which their pensions are expected to be paid and, also, the shorter duration for which people have contributed. The differential varies between countries because of differences in the way pensions are adjusted for early retirement and because the early-retirement “window” varies from two years in Hungary, through five years in Belgium and Italy to 10 years in Portugal.

73. The second set of net replacement rates relate to the worker in a hazardous or arduous job. At the special early age of retirement, net replacement rates are already high for workers in hazardous or arduous jobs. Indeed, they exceed the replacement rates for general workers taking early retirement, which in all cases except Portugal is only available at a later age. In some cases, however, the replacement rate for workers with a hazardous or arduous job is below that for a general worker with a full career ending at the normal retirement age (although for Spain, the difference is small).

4.2 Pension wealth under special pension schemes

74. A comparison of replacement rates alone is insufficient, particularly when comparisons are being made between individuals retiring at different ages. Pension wealth, in contrast, measures the lifetime value of the flow of pension benefits during retirement and so takes account of these differences in expected retirement duration. The third panel of the Table 4.1 shows net pension wealth, which again takes account of taxes and contributions. Pension wealth is shown as a multiple of earnings: a result of 10 indicates that the flow of benefits during retirement is financially equivalent to a lump-sum payment of 10 times individual annual earnings.

Table 4.1. Replacement rates and pension wealth under general pension programmes and special rules for workers with hazardous or arduous jobs

		Belgium	Hungary	Italy	Portugal	Spain
Pension ages						
	H/A job	55	55	59	55	52
	Early retirement	60	60	60	55	61
	Normal	65	62	65	65	65
Net replacement rate (% of earnings)						
General worker	Early retirement age for H/A job	0.0	0.0	0.0	37.4	0.0
	Early retirement age	58.7	93.4	58.1	37.4	66.1
	Normal retirement age	67.8	99.7	74.8	67.9	84.5
H/A worker	Early retirement age for H/A job	62.9	79.8	65.6	90.0	83.0
Net pension wealth (multiple of earnings)						
General worker	Early retirement age for H/A job	5.69	9.88	6.73	6.17	7.96
	Early retirement age	6.17	11.43	6.96	6.17	9.04
	Normal retirement age	6.09	11.34	7.62	7.19	10.15
H/A worker	Early retirement age for H/A job	7.56	11.5	8.09	14.14	14.37
Differences in pension wealth						
	Both H/A age	32.9%	16.4%	20.2%	129.2%	80.5%
	“Respective” normal ages (H/A compared to general workers)	22.5%	1.4%	6.2%	96.7%	41.6%

Note: 1. H/A = hazardous or arduous. Based on parameters and rules for workers in H/A jobs set out in Table 3.2.

2. In three countries, the rules vary between different occupations and industries. For Belgium, the calculations are for flight crew or underground miners. For Portugal, the rules used are those for the fishing industry and merchant navy. For Spain, the modelling covers seafarers and flight crew.

3. In Hungary and Italy, these general rules apply to a range of occupations and industries.

Source: OECD pension models.

75. Using OECD pension models, it is possible to calculate pension wealth estimates for a worker in the general scheme who leaves the labour market at the same age as someone with a hazardous or arduous job, at an early retirement age or at the normal retirement age. It is then possible to compare pension wealth estimates of general scheme workers with the pension wealth estimates of workers in hazardous or arduous jobs.

76. For general scheme worker, leaving the labour market at the age for hazardous and arduous jobs naturally reduces the lifetime pension benefit compared with retiring at the normal or early retirement pension age because of the missing years of contributions and the longer duration of pension benefits receipt. In all countries, a retirement for a general scheme worker at the retirement age of workers in hazardous or arduous job lead to the lowest pension wealth entitlement. The pension wealth for these workers ranges from 5.69 in Belgium to 9.88 in Hungary.

77. In Italy, Portugal and Spain, penalties for early retirement schemes imply that pension wealth is higher for general workers who retire at the normal age than for those who retire earlier. But this is not true of Belgium and Hungary, where penalties for early retirement are low or even zero once certain qualifying conditions have been met.

78. The bottom panel of Table 4.1 compares the value of entitlements for general workers with those in hazardous or arduous jobs. The first of the comparisons assume that both types of worker leave the labour market at the age for early retirement from a hazardous or arduous job. In Belgium, Hungary and Italy, the pension entitlements of workers in hazardous or arduous jobs is worth between 16% and 33% more than for general workers. In Spain and Portugal, the differential is much larger: around 80% in Spain and 130% in Portugal (the latter implying that the special rules deliver benefits worth more than double those of general workers).

79. The second comparison assumes that both workers retire at their respective pension eligibility ages (e.g. in Belgium, the worker in a hazardous or arduous job retires at 55 and the general worker retires at 65). This significantly reduces the differential in all cases, although it is still fairly large in Belgium and substantial in Portugal and Spain. However, it is important to remember that the general workers at the time of retirement will have contributed for six years longer in Italy, seven in Hungary, 10 years in Belgium and Portugal and 13 years in Spain.

80. Nevertheless, a central reason for granting these additional pension rights to retirees in hazardous or arduous jobs is that their nature means that mortality rates are higher than for the general population. It is, unfortunately, very difficult to assemble the data needed to address this issue. However, actuarial calculations can show the difference in life expectancy *at pension age* that would equalise pensions between the two groups. The results of such an exercise are shown in Table 4.2.

Table 4.2. Differences in life expectancy to equalise pension benefits,

Pension ages	Belgium	Hungary	Italy	Portugal	Spain
Both H/A age	8.3	3.9	4.8	16.0	14.6
Respective normal ages	5.9	0.8	1.6	14.3	10.0

Note: see Notes to Table 4.1. H/A = hazardous or arduous.

Source: OECD pension models.

81. Table 4.2 makes two comparisons. In the first, both types of workers retire at the age for hazardous or arduous jobs. The result shown is the degree to which the life expectancy that a worker in a hazardous or arduous job would need to be lower than the general rate to equalise the lifetime value of pension benefits. For example, a worker under these special rules in Belgium would receive a higher lifetime pension than general workers unless life expectancy at the time of retirement was more than eight years lower. This figure is, of course, much higher in the Iberian countries, at 15 and 16 years, partly a reflection of the fact that the value of additional benefits on offer are considerably higher in these two countries. In contrast, the life expectancy effect is much lower in Hungary and Italy (3.9 and 4.8, respectively).

82. The second comparison looks at the case where both types of worker retire at their respective “normal” pension ages. The life-expectancy differential between the workers needed to equalise lifetime benefits is much smaller in this comparison, although it remains at 10 years in Spain and more than 14 years in Portugal.

83. Although there are no hard data, it is unlikely that such differences in life expectancy would occur. One reason is that these life-expectancy differentials are measured at the time of retirement.

The greater burden of additional mortality risk that arises from working in a hazardous or arduous occupation is when the individual is in the job (i.e., *before* retirement). Analysis of broader occupational grouping shows significantly smaller mortality differentials (Whitehouse and Zaidi, 2008).

84. Survivors' pensions issues, though relevant, have not been discussed in this paper. Even when there is an early death of someone with work history in hazardous or arduous jobs, it does not automatically shorten the applicable pension period, as in reality the early death gives way to a more prolonged survivor pension payment. The analysis of survivors' benefits and their impact on pension entitlements require further modelling and this work is undertaken elsewhere.⁹ In reality, in many cases, the payment of survivors' pension payments would possibly leave the total pension payment period unchanged (though noting that survivors' pensions are lower than pensions in one's own right). In Austria, for example, when the pension system was set up in 1956, the retirement age for women was set at five years lower than for men for the actuarial reasons that male pensions also cover survivors' benefits (which at that time had not existed for male survivors). Today, retirement ages have been equalised between men and women, but in practice, for the greatest part (in some cases 90%), all survivors' pensions are still paid to women.

9. The analysis of survivors' pension benefits and their impact on pension entitlements will be discussed in another report of the Working Party on Social Policy on the topic of "Women and Pensions", to appear in 2010. For more details, see "Women and pensions: an outline", DELSA/ELSA/WP1(2008)5.

V. CONCLUSIONS AND RECENT REFORM ACTIONS

5.1 Conclusions

85. To conclude this review of the special pensions for workers in hazardous or arduous jobs, it is useful to revisit some of the issues of importance discussed in the paper.

86. *Firstly*, whether these pension concessions are justified, especially in view of how they affect a fair and competitive functioning of the labour market. The arguments presented in the paper highlights that, with the exception of some narrowly defined jobs that would still qualify for a special treatment, in general there is a weak prima facie case for either maintaining or introducing these special pension schemes. This is principally due to distortions these schemes introduce in the wage setting functioning of the labour market. However, if the costs of such early retirement schemes are entirely borne by the industry in which these jobs are found, then these schemes are not perverse in promoting the work undertaken in these jobs, particularly if the industry is in the private sector. If the industry is in the public sector, the possibility is that a risk-bearing profession is inefficiently subsidised, or a dying industry might be saved for no good economic reason.

87. *Secondly*, whether such special pensions continue to provide a legitimate pension support to those who worked in supposedly hazardous or arduous professions, and if yes, is such special pension option the most appropriate and administratively most efficient way of recognising this? Discussions in the paper imply that, in cases where such work related health risks can still be recognised, they can be better dealt with some alternative, better targeted, social policies. Those who fail to find a job matching their skills during later parts of their life, because their skills required in their preferred profession diminish with age, unemployment benefits with job-search requirements would be a more suitable alternative. Those whose health is compromised due to work experiences of the past can continue to receive a special treatment, but on individualised bases, with the help of more conventional disability pensions policies, through work-related sickness benefits, or, preferably, some combination of work and benefits.

88. *Finally*, what is the value of additional pension benefit on offer in these schemes? Comparing the value of entitlements for general workers with those in hazardous or arduous jobs, and assuming that both types of workers leave the labour market at the age for early retirement for workers in a hazardous or arduous job, the pension advantage on offer is calculated for five countries. In Belgium, Hungary and Italy, the pension entitlements of workers in hazardous or arduous jobs is worth between 16% and 33% more than for general workers. The differential is much larger in the other two countries: around 80% in Spain and 130% in Portugal (the latter implying that the special rules deliver benefits worth more than double those of general workers). These results, generated using OECD pension models, assume a full career for both types of workers. The additional pension benefits on offer in special schemes, particularly in Spain and Portugal, are likely to outweigh any disadvantage these workers will have in terms of reductions in their life expectancy.

89. Thus, on the basis of normative arguments presented in this paper, it can be said that countries need to revisit the pension privileges assigned to 'special' sectors or professions, and bring about legislations to phase out the advantages that may no longer be considered fair.

5.2 Recent reform actions

90. Those advocating reforms will recognise the advantages that a structured programme of review of these schemes will bring, yet they are also well aware of the difficulties that such a review process entails in practice. For the legislator, the issue is to overturn an experience that suggests that now the grant of a special pension allowance is seen as a right. The view of the would-be pensioner is that the preferential pension treatment has been an instrumental part of their choice of the profession in the first place. The task of persuading all sides to this argument of the need for reform is itself an arduous one.

91. This paper's conclusions suggest the need for countries to instigate a review process, whose remit will be to look at each applicable special pension scheme on a case-by-case basis as well as examine their justification. Such a review process would look into whether these special pension schemes are indeed the best way to compensate for experiences in risk-bearing occupations. It will give an impartial analysis of how such schemes are affecting the competitive functioning of the labour market. The process will be inclusive in bringing together all social partners so as to seek a viable solution. The on-going process in France provides a good illustration of a process of change and the difficulties encountered. The remainder of this section summarises recent reform actions that has been happening in some of the countries.

FRANCE

91. The current situation is that the French confederations of trade unions could not reach an agreement with MEDEF (Mouvement des Entreprises de France), the largest union of employers in France, on the question of a scheme enabling workers with pénible work conditions to retire earlier. MEDEF recognizes that pénibilité has an impact on workers, but it refuses that employers finance a special pension regime with provisions for early retirement for these workers. Employers' position is demonstrated by the following statement by MEDEF "*Nous ne voulons pas recréer des régimes spéciaux*" ("we do not want to recreate special pension regimes"), (Le Figaro, 17/07/08) exemplified. This statement put an end to more than three years of negotiations on the issue of pénibilité pensions.

92. Employers consider this not only an additional tax on them, but that an acceptance of funding of these schemes is a way of self-acknowledgement that they did not do their best to avoid pénible working conditions in the first place. A general point of view is that employers do not want collective early retirement schemes anymore (for example, they oppose the latest one for asbestos cement workers), and they prefer more individualised measures.

93. At the moment, the government intervention is limited to providing good conditions for negotiations between social partners. The formal position is that Government will legislate a Bill at the end of the year if an agreement is not reached by then. In one of the Parliament reports, presented on 25 May 2008 by Deputy Jean-Frédéric Poisson, one of the proposals is to reduce the working time at the end of the professional career, and this on the basis of a medical commission decision. Another proposal is to focus more on measures of prevention and less on compensations.

94. In the report, JF Poisson made specific proposals about preventive measures, and some of them are:

- Organizing a national campaign on preventive measures, launched by a commission, specialized in the reduction of pénibilité, created for this occasion.
- Increasing the training of the managerial staff regarding pénible working conditions

- Encouraging the employers to adapt the places where people are working to reduce pénibilité. The expenditures incurred on such structural improvements would be tax-exempted.

95. The employers could possibly accept a maximum of two years for early retirement (with a full pension) for workers who faced hazardous or arduous work conditions. But, workers must be willing to work part-time in that period, taking on tasks of professional teaching and training activity. The worker would be paid by the employer for the part-time and the rest would have to be financed by the public pension fund.

96. Another difficulty is an agreement on the definition of pénible work conditions. Employers identified three types of pénible work conditions:

- Physically demanding,
- ‘Aggressive’ (one with a risk of exposures to harmful products) and
- Hard work timing (night shifts, etc).

97. The conditions required seem to be quite restrictive. To enter the pénible work category, the worker should have been exposed to one of these three types of hard work and to have been exposed for at least ten years.

98. The trade unions want the implementation of early retirement schemes with increased contributions corresponding to the duration people have been exposed to some risks. Some of the trade unions also want stress to be considered as a professional disease.

99. Some of the public sector schemes (for example French national railway company, C.N.E.F.) have also made some proposals. But nothing has been decided yet. One of the directions is to take pénible work conditions into account through a salary supplement (a ‘wage bonus’), the rethinking of the second part of the career, or flexible work conditions, and no more through reduced contribution length (as it is for workers recruited before 31 December 2008).

PORTUGAL

100. Portugal has undergone quite comprehensive reforms in its pension system in the recent years, but these reforms have left the special schemes of pénibilité pensions unchanged and pretty much untouched by the political discussions that led to the reforms. In fact, the new law regulating old-age pension for the general regime clearly recognizes the possibility for early retirement due to hazardous working conditions, to be regulated by specific legislation.

101. These special pensions are offered to a very small number of workers, and this may be the reason of a lack of urgency in changing their rules. Moreover, if the only episode of changing rules regarding pénibilité pensions, which is described below, can serve as an example, it is unlikely that any changes will be proposed in the near future.

102. The upper age limit for commercial aircraft pilots has been set at 65, to be gradually achieved until 2011. This has triggered a change in the scheme that allowed pilots to retire at the age of 60. This provoked a strong reaction by the commercial pilots’ union against the proposed changes, which would also submit pilots to the much less favourable early retirement rules applied to the general scheme. Following a period of high visibility strikes that affected the national transport airline, a principle of agreement was eventually reached between the government and the pilots’ union to

increase the retirement age to 65 years, under unspecified and yet to be agreed conditions. This principle of agreement also specified that the government would foster negotiations between the unions and employers associations to find complementary solutions within the framework of collective agreements for the aviation sector, presumably to partially compensate for the increase in pension age.

HUNGARY

103. Prior to 2007, no additional contributions were charged for early retirement from jobs done under hazardous conditions. Effective from January 1, 2007 employers are mandated to pay 13 percent of gross wages for such purposes.

104. The burden is gradually shifted from government to employers: in 2007 government compensated 100 percent of related expenses, which was reduced to 75 percent in 2008 and will be further cut to 50 percent in 2009 and 25 percent in 2010 until it will be fully charged to the employers from 2011 (Law CXXI/2006 §30).

105. Experts put the number of affected people to 150 thousand, 3.8 percent of the 3.9 million employees. As a further step, exemptions were regulated by Law CXXVI/2007 §354-357. Accordingly, trade unions, employees and employers can request reclassification of jobs as non-hazardous at the level of firms. Reclassification can be justified by technical developments since 1973, when the list of hazardous jobs came to effect and has been left nearly unchanged with the exception of two minor modifications. Employers can also get exemptions if they invest in further measures to improve the Health & Safety at their work environments. Exemptions do not affect retirement age reductions accrued in the past.

FINLAND

106. Although there are still special pension schemes in the Government sector and for Seamen, two other schemes have been eliminated altogether or replaced by disability pensions. These changes are summarized below:

- According to the Local Government Pensions Act, employees' occupational title and workplace defined the pensionable age (from 53 to 62 years when general pensionable age was 63 or 65 years). The final pensionable age of an employee was calculated as a weighted average of all periods of service in different occupations. From the beginning of 1995 until the end of 2004 early disability pension replaced this occupational system in the public sector, but each employee in the occupational system could choose to stay in the old system (but, from 1995, working conditions have no effect on the pension benefits). From the beginning of 2005, early disability pension was replaced by an extension of disability pension in all pension acts – for employees over 60 but less than 63 years, also long career, hazardous or arduous work, the nature and responsibility of the work are also taken into account.
- In the private sector there have been voluntary arrangements of special pension benefits of employers to their employees that have been arranged in the same pension institution as the earnings-related pension. These arrangements followed sometimes closely the rules of these earnings-relates pensions. These arrangements have now been closed. These arrangements previously existed because of the either pénible nature of work or for some other reasons.

NORWAY

107. The most relevant early retirement scheme for workers in hazardous or arduous jobs is the Contractual Early Retirement Scheme (referred to as AFP – avtalefestet pensjon). Initially, AFP was intended to be a typical pénibilité pension scheme, but mainly for industrial workers lacking the health needed for their job, and thus meant to provide them a decent closure of their careers.

108. The case for this special scheme was built around the argument that the existing possibility of retirement, disability pension, was associated with stigma, as there was a need for doctor consultations. However, the scheme was never limited to this group, and there are no objective criteria defining who are in need of AFP anymore. It is estimated that approximately 80% of 61 year-old employees now are covered by an AFP scheme, i.e. at age immediately before they reach the AFP retirement age.

109. The Norwegian pension system is currently being reformed, and as part of this process the Government aims at reforming AFP so that the scheme is in accordance with the general aims of the reform. An identified problem with the current scheme is small economic incentives of working longer, because the choice of retirement age (beyond 62) has no effect on the level of the pension.

110. From June 2007 to February 2008, a commission consisting of representatives from all social partners discussed how AFP in the private sector can be reformed. Three alternatives were described in the commission's report. In two of these (Models 1-2), the new AFP pension was modelled as a life-long supplement on top of the National Insurance Scheme (NIS) old age pension. The reformed NIS old age pension will from 2010 have a flexible retirement age of 62–75 years and be actuarially neutral.

- **Model 1:** An actuarially neutral AFP supplement, roughly following the same principles as the new NIS. AFP may be combined with wage income without having the pension reduced.
- **Model 2:** If retiring early, the person may choose between an actuarially neutral AFP supplement (as in model 1) with the possibility to have wage income without reduced pension, or a higher AFP supplement which is reduced if the pensioner has wage income. At higher ages (e.g. from 64), the only choice is the actuarial neutral AFP.
- **Model 3:** AFP is still paid out in the period 62–66 years, and the pensioners are transferred to the NIS at the age of 67. Some adjustments are made to improve the economic incentives to working longer. Persons wanting to combine pension and wage income will not receive AFP, but has to choose the actuarially neutral NIS pension.

111. Model 1 was suggested as the new AFP model by the government in 2006 and was part of the pension reform agreement in the parliament in 2007. The adaptation of private sector AFP to the pension reform is expected to be agreed on during the private sector wage negotiations in 2008.

112. An expert group consisting of the government, trade unions and employer unions is currently discussing AFP in the public sector and public service pensions. The group will give its report during 2008. It is expected that the group will describe how subsequent process may be organised and point out main issues needed to be discussed. A final agreement on how public sector AFP may be adapted to the pension reform may be reached in 2008 or 2009.

POLAND

113. Workers in 'special' working conditions or in jobs of 'special character' are able to retire earlier than the statutory retirement age. The reduction in retirement age varied by occupation (see

Annex A.7 for more details). These special early retirement privileges will be in force until the end of 2008, with the exception of miners who will retain their early retirement privileges as before. The right to early retirement does not exist in the reformed pension system although bridging pensions constitute certain equivalence for people who were born before January 1969. Bridging pensions, according to the government proposal, will be paid to people working in conditions that are verified by medical experts and these conditions cannot be removed by any technical, legal, medical or organisational measures or in case of requirement of certain psychophysical condition required to safeguard life of the worker and other people (i.e. pilots, train drivers etc.).

SPAIN

114. Law 40 of December 2007 of Social Security measures came into effect on January 1st, 2008 and it applies to occupation/sectors within the General Regime whose right to early retirement for reason of pénibilité will be granted after 1st January, 2008, provided they satisfy certain conditions.

115. This latest law standardises the requirements for any occupation or sectors that wish to claim the right to early retirement on the grounds of pénibilité. The main features introduced by the law are as follows:

- *Firstly*, the law explicitly stipulates that the application of coefficients of reduction in the age of retirement will only apply when changes in working conditions are no longer possible;
- *Secondly*, it explicitly states that the application of coefficients of reduction in the retirement age will necessarily be accompanied by increases in the contribution rate in order to achieve the “financial balance”. The increase in contributions shall be split equally between employers and employees; and
- *Thirdly*, it sets out 52 as the earliest retirement age.

116. Fire fighters are the first occupation to have been granted the right to early retirement (for reason of pénibilité) under this law. The coefficient of reduction in retirement age will be 0.2, and the age of 60 is the earliest age of retirement (59 in case of more than 35 years of contributory years). An additional contribution will be required to finance to scheme. This additional contribution will be paid in equal proportions between employees and employers. The contribution rate will be increased gradually over the course of a transition period of eleven years.

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ANNEX A: COUNTRY-BY-COUNTRY DESCRIPTIONS OF SPECIAL PENSIONS SCHEMES

A.1 Belgium

Who are entitled?

117. Amongst the salaried workers in the private sector, special pension rules apply to the following groups: miners, the marine workers and the flight crew of the civil aviation. Special pension rules are also applicable to the following three groups of public sector workers: armed forces and police force; teachers; and particular services that expose workers to physical or mental stress (e.g. customs, water and drills, etc)

What entitlements?

116. Normal pensionable age is 65 for men. For women, the normal pension eligibility age in 2006 was 64, and it will increase to 65 in 2009. The pension can be claimed at 60 if the worker has contributed for at least 35 years. However, the pensionable age is different in the occupations mentioned above because of the special nature of their work activity.

117. For the miners, pension can be claimed at:

- 55 years: for the underground miners;
- 60 years: for the surface miners;
- any age as from 30 years of occupation as basic miner or as an underground miner.

118. The sailors, on the other hand, will be able to draw their pensions at 60. As for the flight crew of the civil aviation, the pension can be granted at:

- 55 years;
- Any age, as soon as 30 years of occupation as member of the operating staff or 34 years of occupation as member of the cabin personnel (or alternating as cabin and operating staff) are completed.

119. In the general scheme, the retirement pension is calculated at a rate of 1/44th for a woman and 1/45th for a man per calendar year of contribution; thus the full pension requires 44 and 45 years of career for men and women, respectively. For miners, the full pension can be obtained at the end of 30 years of career. For sailors, the full pension could be obtained after 40 years of service - the complete pension could however be also obtained after 168 months or 14 years of service at sea.

120. In the mode of the flight crew of the civil aviation, the rules are slightly more complicated:

- When at least 20 years of occupation as an operating staff are established, the retirement pension can be acquired at a rate of 1/30th per calendar year of occupation (thus the full pension is available after 30 years of career);
- When at least 23 years of occupation as a cabin personnel, or in membership of the cabin personnel and control, are established, the retirement pension is acquired at a rate of a 1/34th per calendar year of occupation (the full pension is available after 34 years of career).

121. For the public sector workers, the normal pensionable age is 65. The full pension requires 45 years of contributions. In the case of the pénible occupation, the career length necessary for full pension are less.

122. The pension eligibility age of members of armed forces vary according to two criteria: the forces to which they belong (e.g. whether in the terrestrial force, in air force or they are a sailing personnel) and their ranks (general officer, superior officer or subordinate officer). For example, an officer subordinate who has been an instructor at a sea vessel and who has been a sailing personnel can retire as early as at the age of 45. Highest ranked officers (admiral, vice-admiral) can retire at the age of 61.

123. The new pension scheme of the police force stipulates that the members of the operational supervisory staff can, at their request, be granted pension at the age of 58. They may also be granted pensions on the first day of the month which follows the date of suspension of their functions if it is posterior in the condition of counting at least 20 years of service acceptable for contribution purposes.

124. The pénible nature of work also gives rise to the use of a preferential accrual rate for the calculation of the pensions for certain occupations.

- The granting of the preferential percentage can be related to the performance of a specific duty. Thus, because of the tiring nature of the job, the basic percentage for the teachers is 1/55 per year of service. Formerly, the percentage was 1/50 for the teachers.
- The percentage 1/50th is also applied to services of particular nature (e.g. for those who work outdoors, those who are exposed to bad weather).

How is it financed?

125. In theory, pénibilité pensions are pre-financed by means of higher social security contributions. The exception is the case of sailors: the social security contributions of sailors were higher in the past but they are now the same as other workers in the general scheme.

What other aspects?

126. Recent trends show a decline in the workforce of miners and sailors. There are no studies that provide empirical evidence on life expectancy differentials between those who receive pénibilité pensions and others. It seems that through collective bargaining process the pénible occupations already received higher compensating wages for the arduous or hazardous nature of their work.

A.2 France

127. While there exists no special pension schemes in France that compensate workers in their pension entitlements for hazardous or arduous work conditions, the compulsory French pension system, by virtue of its fundamental principles, as reinforced by the Act of 21 August 2003 and proposed measures to be discussed with the social partners during 2008, comprises provisions whereby the circumstances of workers whose jobs have been hazardous or arduous can be factored in either directly or indirectly.

128. First of all, entitlement to a pension from age 60, combined since 2003 with an early retirement option for workers with long years of service, do in fact confer an advantage on categories of the population (and especially workers in agriculture and industry) whose careers may have been arduous, by allowing them to stop working at an earlier date. Moreover, the fact that a full pension is payable at age 60 in the event of disability factors *pénibilité* in indirectly when it is time for a worker to start drawing a pension.

129. Second, there are currently two early-retirement mechanisms in the private sector by which workers are compensated for exposure to arduous and/or dangerous jobs: early retirement for certain dependent workers (*cession anticipée de certains travailleurs salariés*, or CATS for *pénibilité*); and early retirement for asbestos workers.

130. In addition, a number of special public-sector schemes provide supplementary pension benefits for certain categories of workers recruited prior to 31 December 2008. As from 2009, the circumstances of such workers will be addressed in other ways, to be determined in the ongoing negotiations by industry or by firm, including working conditions, arrangements for the latter part of a worker's career and additional items of remuneration, on a case-by-case basis.

131. Above all, however, and more generally, as the Pensions Advisory Council (*Conseil d'orientation des retraites*) reiterated in its published report of 21 November 2007, mechanisms such as disability benefits, old age pensions for inability to work, long-term sick leave, pensions for workplace accidents and occupational illnesses, special early retirement benefits from the National Employment Fund, early retirement for long careers and dispensations from job search requirements are very commonly used alternatives by which older French workers with health problems manage to stop working before time.

132. The Pension Reform Act of 2003 made *pénibilité* a subject of negotiations, stipulating (in Section 12) that in three years' time the social partners would undertake multi-industry negotiations on the definition and repercussions of *pénibilité*.

133. Emphasis is placed on the need to address the issue of dangerous or arduous work at an earlier point in time, by implementing a policy to prevent such situations. In particular this should be achieved by improving conditions and by arranging, if that seems the most appropriate response, for workers to be compensated immediately, as soon as dangerous or arduous situations arise. Government and social partners can act before jobs become dangerous or arduous by redesigning workstations and retraining workers (especially in connection with industry-wide collective agreements), drawing upon good practice and innovative experience in this area, both in France and elsewhere in Europe, thanks to the open co-ordination method.

134. Lastly, in 2008, part-time work at the end of a career (and gradual retirement in particular) has become the focus of new communication and incentive campaigns, in connection with the meetings scheduled under the Pension Reform Act of 2003 and the Seniors Plan of 2006, consistent with the objective of raising the employment rate of seniors. Thus, options considered are that flexible retirement via part-time work rather than a full withdrawal at an early age.

A.3 Hungary

135. Social insurance pensions are regulated by the Act passed in 1997. Under this Act, any person who is engaged in any work of extreme intensity or works under extreme exposure to the risk of an occupational disease shall be entitled to compensation in the form of lower retirement age. The implementation of the Act is regulated by a government decree, the schedule of which contains an itemised list of specific occupations, including job descriptions, in which a lowered retirement age may be allowed. This early retirement provision is applicable to over 800 jobs, the major groups of which include the following:

- work carried out underground,
- at drilling rigs,
- in compressed air,
- in thermal operations,
- in the electricity industry,
- in the textile industry,
- in the baking industry,
- in cold storage plants,
- under exposure to ionising radiation,
- in transportation,
- in civil aviation,
- in the explosives industry, as well as
- certain occupations of civilian employees in the Hungarian Armed Forces.

136. Employees in certain jobs are eligible to a lowered age of retirement in all sectors of the economy, while eligibility in others is limited to specific sectors (for example, the production of moulds entitles an employee to a lower age of retirement in any sector of the economy, while those working as foundry operators are eligible in metallurgy, engineering and heavy industries only).

137. Additionally, in certain jobs of an increased intensity, early retirement is allowed through *professional* pension schemes. Such schemes include pensions for soldiers, members of various armed forces and law enforcement authorities, fire fighters and certain artistic occupations (e.g. dancers, wind instrument players, etc.). Miners eligible to an age preference (in the group of “work carried out underground”) are subject to special regulations, but due to mine closures, they may receive a professional pension (miners’ pension) under certain conditions, partly for employment policy reasons.

How are early retirement compensations calculated?

138. Compensations are calculated differently for men and women.

- Men are granted a compensation of two years after ten years in a pénible job and one year for each additional five years.
- Women are granted two years of compensation for eight years and one year for each additional four years in the specified jobs.
- All employees in jobs involving exposure to high atmospheric pressure are granted two years of compensation for six years and one year for each additional three years.

139. Soldiers and employees in other armed forces as well as fire fighters are allowed to retire after 25 years of service, without regard to age. Employees in certain artistic occupations (e.g. ballet dancer etc.) and miners are also allowed to retire without regard to age. For these cases a minimum of 25 years (in certain cases 20) of service is required, while miners are eligible if they have completed the required number of shifts.

How are pénibilité pensions financed?

140. The costs associated with the lowered retirement age are a part of the social insurance pension system, which is financed from the Pension Insurance Fund against general pension contributions. Such expenditures amount for a few thousandths of the GDP. The mandatory private pillar does not entitle employees to any such compensation. The budget provides reimbursement to finance *professional* pensions. Approximately, 3,000 pensioners receive miners' pensions, 1,000 receive artists' pensions and 47,000 receive service pensions (armed forces, fire fighters).

141. As of 2007, extra contributions are payable for employees employed in pénible jobs, which will be levied on employers in the future. The budget will finance 100% of this extra expenditure in 2007, 75% in 2008, 50% in 2009 and 25% in 2010. From 2011, the full amount of the extra contribution (13%) will be payable by employers for employees employed in pénible jobs. No extra contributions are levied on professional pensions; the extra contribution is financed by the budget.

Critical points?

142. The system developed several decades ago has never been reviewed and no objective investigation has been carried out into the harmful factors occurring in specific jobs. The list of jobs fails to reflect the technical development that has taken place over this period; however, its mere existence gives rise to an increasing number of claims. The need for reform emerged over 10 years ago. The review of the system is a longer process, the first step of which was to introduce a compensation contribution payable by employers to replace the compensation previously financed from the central budget and the general pension contribution. At the same time, any employer may be exempt from the payment of the extra contribution if they prove that employees are not exposed to any harm in the course of performing work. The rules of leaving the pénibilité system are regulated by law, the implementation of which is regulated by a government decree, procedural costs by a ministerial decree. By 2011, the rules for entering the system will have to be established; as of that year, compensation for certain jobs in certain workplaces will be subject to the initiative of employees. The general list of jobs will be replaced by independent occupational health experts' decisions on eligibility, carried out in response to each employee's application, based on objective assessment and measurement of the specific harms and groups of harmful conditions which exist in a specific workplace. Employers will be required to pay the extra contribution in such a case.

What evidence on life expectancy differential and compensatory wages?

143. Rather than pertaining to pénible jobs, data in the Hungarian statistical system differentiate between employees working under *normal* and *unfavourable* conditions.

- Normal working conditions: Work performed under conditions which do not exceed the limits specified in the Hungarian standard, where the rate of energy expenditure is not more than 5,200 kilojoules in a single shift.
- Unfavourable working conditions: Any physical work that cannot be classified under the normal category.

144. The following table illustrates how much more physical workers in the private sector performing work under unfavourable conditions received in basic wages and earnings than employees working under normal conditions in 2007. The table also indicates the relative proportion of employees working under unfavourable conditions:

	Relative Proportion (%)	Extra Basic Wages (%)	Extra earnings (%)
Unskilled workers	9.2	2.5	9.9
Semi-skilled workers	14.9	12.0	27.9
Skilled workers	12.5	20.0	44.6
Highly skilled workers (masters)	48.0	11.6	22.3

145. The table shows that the difference in earnings is definitely more than that in basic wage. This suggests that physical strain and unfavourable conditions of work are mostly recognised in elements of earnings other than basic wage (e.g. in the form of supplements).

146. In the **private sector**, earnings are regulated by the Labour Code, collective agreements and contracts of employment. The Labour Code prescribes mandatory minimum supplements for work performed in several shifts, in a continuous scheme and at night, as factors creating more unfavourable working conditions. Any other rules such as payment in consideration of the difficulty and dangerousness of work are regulated in collective agreements and/or contracts of employment rather than by law.

147. In the **public sector**, regulations are based on law. Effective legislation provides for the payment of **mandatory supplements** with regard to employees performing hard and dangerous work in the following cases:

- **Civil servants** (employees in public administration): Supplement for health risks and the use of personal protective equipment if the majority of working time is spent performing work exposed to health hazards or the protection of health is only possible through the permanent or regular use of personal protective equipment which puts increased stress on the worker.
- **Public employee:** (employees in the education, health, social and cultural sectors): The same supplement for health risks and the use of personal protective equipment as indicated for civil servants. In health and social care institutions, premium for employees working under unfavourable conditions depend on the nature of their jobs.
- Professional staff of law enforcement agencies:
 - Allowance for hazardous disaster relief and fire control assignments
 - Hazard bonus for customs guard staff
 - Criminal investigation bonus for customs guard staff

- Allowance for police service in public areas
- Criminal investigation bonus for police
- Guards' premium in penal authorities

148. In addition to the above types of regular supplement, occasional premium is paid for action, diving, special drivers' assignments and to explosives experts.

- **Professional and contracted staff of the Armed Forces:** Several types of premium are paid depending on the unique features of each area in jobs involving an increased workload.

A.4 Finland

149. In the Government sector and for Seamen, there still are special schemes for pénible working conditions. In the past, there were two other schemes, which have been eliminated altogether or replaced by disability pensions. These changes are described in Box 5.2.

Government sector pension schemes

150. There are three types:

1. Those who are in military jobs;
2. In certain occupations there is a lower pensionable age than the general age, when a person must resign. When a person attains the age for resigning, the old age pension is granted in this lower age. This kind of occupations exists in the police force.
3. In certain professions, workers have a right to a special occupational pensionable age (55, 58 or 60 years of age). These professions are listed in certain Government Acts which were revoked in 1989 (government pension decree, act and decree of comprehensive schools). This means that these arrangements are closed as in the Local Government Pensions Act, although there are still persons who benefit from these arrangements.

151. These pensions are financed like other pensions, by pension contributions of employers and employees. In the government pension system the employee contribution is the same as in the most general system whereas the employer contribution is higher than that in the private sector.

152. In 2007, the pension contribution of the military personnel was 35.28 percent of wages and in the groups 2 and 3 mentioned above the contribution was 31.41 percent whereas for the other groups of government officials the contribution was 23.64 percent.

153. At the end of 2006, there were 182 300 employees in the Government sector of which 11,100 belonged to the military pension system, 10,100 to the second group and 20,000 to the third group mentioned above. The rest (about 141 100 persons) were in jobs, where there were no special pension arrangements.

The Seamen's pensions

154. The Seamen's Pension Act provided the reasons underlying pension privileges for seamen: they were principally physical – long shifts at sea, working on deck, working with the machines or at the restaurant. The lowest pensionable age is 55 for crew and 60 years for officers.

155. Both, higher accrual rate and the right to a lower pensionable age exist for seafaring workers. The accrual rate is 0.1 percentage point higher than in the most general pension act before the age of 63 and the pensionable age is lowered by as many months from the age of 63 that the service at sea exceeds 324 months.

156. They are financed like in the other private sector pension acts, but in the seamen's system employer and employee have equal pension contributions and the government finances a third of the pension expenditure. The expenditure of seamen's pensions was €104.8 million in 2007. A good fourth of this sum comes from the better benefits of seamen.

157. About 9,200 employees are in this sector, and all those working until retirement in the seamen's pension system have right to the special arrangements. There are about 8,500 pensioners at the end of 2006.

What other aspects?

158. There are no further reforms in sight. In the government sector the third group mentioned above is diminishing gradually as there are no new entrants to the special arrangements.

159. There are no studies or empirical evidence about differentials life expectancy differentials between those who receive pénibilité pensions and others. There is information, though, of the life expectancy in different pension benefit forms, such as those retiring on disability pension compared to those on other pensions, but no study that according to pénibilité.

160. There are also no studies on compensatory wage differentials. The Seamen's pension institution has statistics of the average monthly wages, which show a difference of monthly pay. The employees at sea receive higher wages. But there is no research on the subject as to the reason for these differences, whether they reflect the longer working time or the nature of the work. In addition, seamen receive a special allowance in taxation for work at sea.

A.5 New Zealand

Who are entitled?

161. The following occupations are entitled to a special pension treatment:

- Police
- Armed Forces
- Firemen
- Airline Pilots
- Train drivers

162. The first four above have occupation-based retirement schemes – DB pension schemes and DC lump sum accumulation schemes for Police, Armed Forces and Airline Pilots, DC lump sum for Firemen. Train Drivers have a Sickness and Disability (SAD) fund. The common characteristic of these schemes other than the Armed Forces is ability to obtain normal retirement benefits as of right at earlier ages than usual in NZ, and the additional benefits payable should a member fail a fitness test for their occupation. In the case of the Train Drivers SAD fund, this includes payments for temporary disability.

163. Membership of the schemes comes with employment – if employed as a sworn member of the Police or Armed Forces, employed as a Fireman under the Fire Services, employed as a Pilot by Air NZ, or employed as a Train Driver and a member of the appropriate union.

164. There have been no recent changes in terms of eligibility – civilian employees of the Police or Armed Forces have never been eligible. There used to be a compulsory scheme for Prison Officers, but this was made voluntary in 1992, at which point most left taking their accumulated own contributions – the cost of continuing own contributions of 8.5% of salaries was understood to be a major consideration, at a time when many were also losing the advantage of subsidised housing.

What entitlements?

165. Police can retire from age 55 from the DB scheme with a pension broadly equivalent to 1.25 times that a public servant in the Government scheme would obtain at 60. The DC scheme has a Government subsidy of 15% of salary, much higher than for other public service schemes. Medical disengagement is available up to age 50, with a lump sum of around three times the members contributions and interest (members contribute 7.5% of salary).

166. In the case of the Armed Forces, the retirement benefit payable at the end of 20 years service is broadly equivalent to what might be earned over 40 years in normal work. Armed Forces members usually serve for a 20 year contract period, extendable at the option of the employer.

167. Airline Pilots have the opportunity to accrue a full benefit by age 55, recognising that medical tests are likely to put them out of work as they age past that point.

168. Firemen and Train Drivers do not accrue higher retirement benefits per se, but do have enhanced benefits available should they fail mandatory medical tests.

How is it financed?

169. Police and Armed Forces DB scheme is financed as part of the Government Superannuation Fund; this is partially pre-funded but has a large actuarial deficit. The actual liability in respect of Police and Armed Forces is \$NZ500 million and \$NZ300 million respectively, but this does not include former Police and Armed Forces members now in receipt of pensions. In general, the cost of both the DB and DC schemes requires around 15-17% of total salaries.

170. The cost of the other arrangements has not been ascertained. For the Firemen and Train Drivers the pénibilité benefits are more in the nature of assured benefits.

171. The DC arrangements are pre-funded, with contributions from both employers and employees; but the employer contribution finances the insurance benefits for medical withdrawal. The basis of the operation of the Train Drivers SAD fund is not known. (It should perhaps be noted here that NZ does not have an extensive rail network, and that ownership was privatised in the early 1990s.)

What other aspects?

172. Police have 868 DB members, 8418 DC. Armed Forces have 921 DB members and 6703 DC. There are 137 Aircrew members of their DB scheme. The fire service has 1760 DC members. There is no information on Train Driver SAD membership.

173. There are no reform options being considered in respect of the above. As noted, Firemen and Train Drivers effectively get enhanced disability insurance benefits, and the other categories reflect employment issues. Note also that the Accident Compensation Corporation provides mandatory workplace accident cover, with employers paying risk-related premiums, so that workers in more hazardous or arduous occupations do receive benefits for accidents (but not for illnesses that may arise out of work conditions unless a direct causal connection can be demonstrated).

174. There are no studies of notice on pénibilité pensions in New Zealand, possibly because the country has declining levels of DB pensions even in the public sector.

175. No studies are known to exist on relative wages as between Police etc and other occupations. Generally both the Police and the Armed Forces have some difficulty in attracting entrants of adequate standards, so wage pressures relate more to supply and demand. Lack of supply could reflect the pénibilité nature of the work, for which incomes need to rise, but it does not seem that the retirement savings are a dominant factor in career choices, and indeed the compulsory member contribution is sometimes cited as a disincentive. Firemen and Train Drivers would in NZ be considered semi-skilled jobs, and do not pay particularly well.

176. There is no legislation requiring employers to pay more for dangerous jobs; this is left to market forces, underpinned as noted above for accident cover – for example, a person subject to an accident will receive 80% of their pay until they are able to return to work.

A.6 Norway

177. The occupational pension system in Norway has job-specific retirement ages (*særaldersgrenser*), where specific groups are allowed to retire earlier than the general retirement age. The most relevant early retirement scheme here is a different scheme: the Contractual Early Retirement Scheme AFP (*avtalefestet pensjon*).

178. The first set of AFP schemes was introduced in 1989 as a result of wage negotiations that started in 1988. The general retirement age of the National Insurance Scheme (NIS) was – and still is – 67 years. In 1989, the retirement age in AFP was set at 66 years. Through subsequent wage negotiations, it was gradually lowered: 65 years in 1990, 64 years in 1993, and 63 years in 1997. From 1998 on, the AFP retirement age has been 62 years.

Are AFP akin to pénibilité pensions?

179. Initially, AFP was intended to be a pénibilité pension mainly for industrial workers lacking the health needed for their job, providing them a decent closure of their careers. The trade unions argued that the existing possibility of retirement, disability pension, was associated with stigma e.g. because of the need for doctor consultation. However, the scheme was never limited to this group, and there are no objective criteria defining who are in need of AFP – the retirement decision is completely taken by each worker on her own. Already in 1989, all employees working in the public sector as well as in private firms having signed wage agreements with LO (Norway's largest trade union) was covered by AFP. The scheme was extended to the banking and finance sector in 1995, and member firms of the employer union NAVO (currently *Spekter*) in 1997. It is assumed that approximately 80% of 61 year-old employees now are covered by an AFP scheme, i.e. immediately before they reach the AFP retirement age.

180. For average levels of income, the AFP pension is approximately 60 per cent of the person's wage income. In short, the AFP is calculated as the pension which would be received from the NIS if working until the NIS's regular retirement age of 67 years. This is equivalent to the NIS's disability pension. Two exceptions to the main rule are that AFP pensioners receive an AFP supplement of ca. €1500 a year after tax, and that the AFP pension in the public sector may be calculated as the public service pension from the age of 65, if beneficial for the recipient. Furthermore, the pension may never exceed 70 percent of the person's wage income. AFP pension is paid out in the period of 62–66 years. At the age of 67, the pensioners are transferred to the old age pension of NIS.

How are AFP financed?

181. AFP is jointly funded by employers and the government. The government's contribution consists of costs of pension accrual in the NIS as if the person was working until the age of 67, and roughly offering the same tax benefits to AFP pensioners as to old age pensioners. In the private sector, the government also covers 40 percent of the AFP pension costs (excluding the AFP supplement) in the period 64–66 years of age.

182. There are some variations between the AFP schemes regarding the financing of the employers' share of the AFP pension. In the private sector scheme of LO/NHO the pensioner's last employer is charged 25 per cent of pension costs, while the rest is financed by a fee per employee, paid by all member employers in the scheme. In the two other AFP schemes in the private sector, the banking/finance scheme and the *Spekter* scheme, the last employer pays all costs not covered by the government. These models of financing may have led to improved working conditions for older employees, since late retirement means smaller costs for the employer, giving the employer an incentive to retain old employees. However, this may also mean strong disincentives in hiring older workers.

A.7 Portugal

183. There are currently four categories of professions that are entitled to public *pénibilité* pensions in Portugal: miners who work in the interior of mines, maritime workers of the merchant navy, fishermen and commercial aircraft pilots. There are also other professions or activities that are subject to special pension rules because of the nature of work in their occupation. Although they are not specifically labelled as “hazardous or arduous”, for some of these occupations the case could be made that they are indeed hazardous or arduous: air traffic controllers, classic or modern ballet dancers and house workers of the Madeira embroidering industry. Finally, there are also special benefits to which workers of the mining and steel industry can apply under the Convention signed between Portugal and the European Coal and Steel Community (ECSC).

Mineworkers

184. Miners working in the interior of mines (including those performing support and maintenance activities underground) are entitled to an early access to old-age pension and to a higher accrual rate. The rule is such that miners can anticipate a reduction in retirement age of 1 year for each 2 years spent working in the interior of mines (note that this is equivalent to the coefficient of reduction in retirement age equal to 0.5, as observed for miners in Spain). The earliest age to draw these early retirement pension benefits is 50. Under exceptional circumstances the retirement age may be 45 years within the scope of special protocols signed between the employer and the Ministry of Social Security, in which the employer bears all the additional financial expenses (only two of these protocols have been signed to the present date).

185. The accrual rate for old-age or invalidity pensions is increased by 2.2% for each period of 2 years spent labouring in the interior of the mine. The increased pension cannot be higher than 80% of reference earnings.

186. Exceptionally these rules were extended to workers of the National Uranium Company, in part due to the hazardous conditions faced by those workers (namely exposure to radiation). The employer is responsible for financing the extra expenses arising from this scheme.

Maritime workers of the merchant navy

187. These workers are entitled to early retirement without pension reduction at the age of 55, if they have 15 years of “sea duty” – each period of 273 days on board a ship is considered 1 year of “sea duty”. In case these workers have at least 40 years of service in the merchant navy and 15 years of “sea duty” they are allowed to retire at any age without pension reduction.

Fishermen and seafarers

188. Embarked fishermen are entitled to retire at the age of 55 years without pension reduction if they have at least 30 years of service as fishermen – each period of 150 days of service, even if not consecutive, within the same calendar year is considered as one year of service. If the number of years of service is lower than 30, the retirement age is reduced by one year for each period of three years of service as fishermen. For example, a worker with 21 years of service as fishermen could retire 7 years earlier than the statutory age, i.e. at the age of 58 years. Embarked fishermen may also apply for a special pension due to consuming physical activity, if they are prematurely unable to continue their activity.

Commercial aircraft pilots

189. The age of retirement for pilots has been set at 60, without reduction or any other eligibility conditions. This is mainly for the fact that 60 has been the upper age limit to work as a commercial aircraft pilot. The limit has recently been raised to 65, to be gradually accomplished after 2011. Thus, changes are expected to follow suite since the only justification for the previous early retirement age was the legal upper age limit imposed to commercial aircraft pilots.

Air traffic controllers

190. Air traffic controllers that have 20 years of operational duty at the age of 55, are entitled to retire without pension reduction at that age (as the above mentioned pilots, air traffic controllers are subject to maximum age limits to work – 52, 55 or 57 years old depending on the date of entry to work). The financial burden associated with early retirement are to be financed by the employer and the Social Security.

191. Note here that both commercial aircraft pilots and air traffic controllers may be entitled to other financial benefits upon retirement, such as supplementary pensions or continued wage payments between the maximum age limit to work and the statutory retirement age. However, these are part of collective agreements signed between their employers and union representatives and they do not concern the State.

Classic or modern ballet dancers

192. All ballet dancers who have fulfilled the minimum contributory period of 15 years and they have at least 10 years of paid contributions as full-time ballet dancers are entitled to an early old-age pension at 55, without pension reduction. Those with a contributory career of at least 20 years, 10 of which as full-time ballet dancers, may retire at the age of 45 years old with a reduced pension (pension reduction is calculated in the same way as for early pension of the general contributory scheme, but by using the reference to 55 years as the normal age of retirement).

Firemen

193. The time spent as a fireman is increased by 15% for pension purposes if there is at least a 5 year period of service. The pension is increased by the same percentage. This legislation came into effect recently (on 1st September 2007). This early retirement provision is funded by additional contributions by the beneficiary (the amounts are still to be set). Previously the contributory career was increased by 25% during the time when the individual served as a fireman and it was also subject to an additional contribution by the beneficiary (4% over the National Minimum Wage *times* number of months of service as a fireman that were increased for pension purposes).

Embroiderers from Madeira Islands

194. House workers from the Madeira embroidering industry are entitled to an old-age pension from the age of 60, if they have at least 15 years of paid contributions as workers of the embroidering industry and if they are employed as such at the time of requiring the pension.

Workers under ECSC Convention

195. Workers under ECSC Convention (restructuring companies of the steel and coal industries) are entitled to retire at the age of 60, without pension reduction, after exhausting the unemployment benefit they were entitled to. Workers receiving “pre-retirement” benefit (available to those aged 55 years and older whose working contract have ceased) are entitled to retirement after the exhaustion of this benefit (the maximum duration of pre-retirement benefit is 18 months).

A.8 Poland

196. The statutory pensionable age in Poland is 60 for women and 65 for men. Workers in 'special' working conditions or in jobs of 'special character' are able to retire earlier than the statutory retirement age.¹⁰ The reduction in retirement age vary by occupation: 5 years early for journalists, glass workers, rail workers, etc.; 10 years early for miners, persons working with lead, cadmium or asbestos, steel workers, pilots, divers; 15 years early for wind instrument musicians. These workers undertake a specified category of job in the power industry, in the steel industry, in the chemical industry, but they can also be teachers, medical service providers, rail workers, pilots, journalists, artists, etc.

197. These early retirement provisions will be in force until the end of 2008, with the exception of miners who will retain their early retirement privileges as before. The right to early retirement does not exist in the reformed pension system although bridging pensions constitute certain equivalence for people who were born before January 1969. Bridging pensions, according to the government proposal, will be paid to people working in conditions that are verified by medical experts and these conditions cannot be removed by any technical, legal, medical or organisational measures or in case of requirement of certain psycho-physical condition required to safeguard life of the worker and other people (i.e. pilots, train drivers etc.)

The pension system for selected professions

198. In the case of the armed forces and uniform services (functionaries of Police, Office of State Protection, Internal Security Agency, Intelligence Agency, Border Guards, Government Security Bureau, State Fire Protection Services, and Prison Guards), there is a possibility to retire after 15 years of a duty, without any age limit. The target level of pension after 15 years is 40% of the last wage paid. For each additional year, it increases by 2.6 per cent of wage (this can be increased for selected years of specific duty – i.e. working with explosives), with the cap of 75% or 80% if the retiree has a disability.

The pension system for farmers

199. Moreover, there are some possibilities for farmers for earlier retirement. There is 'structural pension' financed from structural funds that provides benefits to farmers up to 5 years prior to retirement age.

Who benefits most from pénibilité pensions in Poland?

200. The group with the highest number of beneficiaries are teachers. In 2006, the number of teachers receiving old age pensions amounted to nearly 263 thousand persons. About 6% of all old age pensions paid out from the Social Insurance Fund (FUS) have constituted these pensions.

10. Workers in 'special conditions' are those whose work environment brings considerable harm to their health, whose work requires a considerable degree of arduousness or the work requires high proficiency so as to risk personal safety. Workers in jobs of 'special character' are in particular those employed in state administrations, workers insured by virtue of creative or artistic activity, or soldiers, teachers, journalists, etc. The detailed list of the pénible work categories are identified by a decree of the Cabinet (dated 7 February 1983, regarding pensionable age of employee in special conditions or in special character). The definitions have not been changed recently.

201. The second group is miners. In 2006, the number of miners receiving pensions amounted to nearly 187 thousand persons. Number of miner's old age pensions was at the level of over 4% of old age pensions paid out from the Social Insurance Fund (FUS).

202. The third group is constituted by rail workers. In 2006, the number of rail workers receiving old age pensions reached nearly 150 thousand persons. The number of these old age pensions amounted to over 3.4% of old age pensions paid out from the Social Insurance Fund (FUS).

203. As there is also a general provision that allows women to retire at age 55 if they have worked for 30 years, and from 2008 similar regulation has been added for men aged 60 with 35 years of work experience (this applies to men born before 1949), it is difficult to assess the scale of pénibilité pensions. In general around 70 per cent of workers in Poland retire before statutory retirement age.

204. In Poland, the amount of pension depends on the level of wages and insurance years. Generally, wages are independent of the extent of demanding employment. Sea transport, inland navigation and aviation workers (about 5 thousand employed persons in 2006) are groups with the highest average wage (in 2006 average wage was 7 634 PLN; whereas aviation instructors received on average 20 651 PLN, air-traffic controllers on average 9 703 PLN, and pilots on average 8 620 PLN). Next group is constituted by employed persons in mining and quarrying (in 2006, almost 50 thousand employed persons with an average wage of 4 292 PLN).

How are pénibilité pensions financed?

205. In Poland, there is no special funding arrangement for pénibilité pensions – all pensions are financed from the old-age pension funds (Old-age pension fund in Social Insurance Fund, Pensions Fund in individual farmer's social insurance). Annual expenditures on early retirement schemes (old-age pensions below the statutory retirement age from occupational insurance schemes - ZUS) were around 1.5% of GDP during the period 2000-2006.¹¹

What evidence on life expectancy differential and compensatory wages?

206. The Social Insurance Institution (ZUS) has in the past estimated life expectancy for miners. ZUS compared pension receipt duration of miners with others. According to these analyses, there is no evidence that miners live shorter than others. This illustration for miners implied that people who worked in hazardous or arduous jobs are not significantly endangered by shorter duration of life in Poland.

207. There are no identified studies on the existence of compensatory wages for workers in hazardous or arduous jobs in Poland. Generally speaking, the level of wages is independent of the extent of demanding employment. In addition, there are no legislations that force employers to pay higher wages to those working in hazardous or arduous jobs. Employers pay contributions to accident insurance from 0.90% to 3.60% of the gross wage. The level of contribution depends on the extent of the accident risk.

11. Expenditures cover only the occupational insurance scheme, excluding military services and also the individual scheme for farmers.

A.9 Slovakia

208. The pension system in the Slovak Republic is based on three pillars:

- **1st pillar** – mandatory pension insurance, defined-benefit type, pay-as-you-go financed, executed by the Social Insurance Agency;
- **2nd pillar** – mandatory old-age pension saving, defined-contribution type, funded schemes executed by pension management companies; and
- **3rd pillar** – voluntary supplementary pension saving, defined-contribution type, funded schemes executed by supplementary pension companies, with tax advantages.

209. The Act on the supplementary pension saving regulates obligatory participation, in the supplementary pension saving scheme of employees working as performing artists (e.g. dancers). In the course of performing this work the artists' health, in their approximate age of 40 years, will be damaged to the degree disabling their continuing performance of dancing work. For this reason performing dancers are under obligation to sign up contracts for participation with a supplementary pension company, and their employers are under similar obligation to sign up employers' contracts with the supplementary pension company. It follows from the above that employers must, on behalf of their employees who are performing artists pay contributions to their supplementary pension savings, and thus these employees acquire additional pension income, based on supplementary pension benefits. Other employees executing other types of work harmful for health also have supplementary pension saving scheme that provides additional pension benefits.

210. The contributions for supplementary pension savings are paid by both the employer and the employee working in arduous or hazardous jobs. The whole supplementary pension scheme is a fully funded scheme. The employees working in pénible jobs can pay as high a contribution as they prefer, but the employers with such employees must pay at least 2% of the basis of assessment of the employee.

A.10 Spain

211. The legal basis to get early retirement for reasons of pénibilité at work recognised differs by occupations/sectors:

- Social Security Special Regimes: Coal miners and Seafaring workers;
- Social Security General Regime: Air crew, Railway workers, Artists, Bullfighting industry workers;
- Law 40 of December 2007 of Social Security measures: This law came into effect on January 1st, 2008 and it applies to occupation/sectors within the General Regime whose right to early retirement for reason of pénibilité will be granted after January 1st, 2008, provided they satisfy certain conditions.

Special Regimes for coal miners and Seafaring workers

212. For coal miners in Spain, the coefficients of reduction in retirement age vary from 0.5 for those individuals working underground directly extracting the coal to 0.05 to outdoors workers involved in directly mining activities.¹² The coefficient for underground mining vary from 0.2 to 0.5 (depending upon the hardship of the job), whereas the coefficient for those working in the open-air extraction mines range from 0.05 to 0.2.

213. After changes introduced to legislation in October 2007, coefficients of reduction in retirement age for Seafaring workers are based on the type of ship individuals work and the commercial use of the ship. The commercial use distinction is made on the basis of whether it is a fishing ship or it also has other use (such as transporting passengers, commodities, petrol, etc). The coefficient vary across these different types of ships: ranging from a maximum 0.4 for a ship transporting petrol or gas to a minimum 0.15 for fishing boats. Notably, the same coefficient applies to all workers in the ship, without any distinctions by job or occupations. In addition to the above, coefficients of reduction in retirement age apply to cockle pickers and other similar occupations and it equals 0.1. The age of 55 is the earliest age of retirement in the special regime for Seafaring workers. The coefficient for harbour dock workers is 0.3.

Pénibilité pensions within the General Regime

214. The coefficient for railway workers varies from 0.1 to 0.15 depending upon the occupation. The right to early retirement for an air transport workers is granted not directly on the grounds of pénibilité but on the grounds that these professionals are more likely to have their activity terminated before normal retirement age due to the higher physical and psychological fitness standards they are subject to. The coefficients of reduction in retirement age apply only to the flight crew (not to stewards or stewardess). The coefficients are 0.4 for pilots and 0.3 for other flight assistants.

12. The coefficient is multiplied by the number of working years in the respective occupation/sector and the result is the reduction in the normal retirement age. For example if an occupation has a coefficient of 0.5 and a worker has 10 years of service in that occupation, the reduction in the normal retirement age equals 5 years (10×0.5), so the worker has the right to early retirement at age 60. There is a limit to the earliest age of retirement, which varies by occupation/sector but in no case it will be less than 52.

215. Workers included in the Mineworkers Statute, except those that are included in the Special Scheme for Coal miners, have a reduction coefficient of 0.5 for more hazardous categories and 0.05 for less hazardous categories. Artists, of which some categories (namely ballet dancers and some circus artists) are allowed to retire at the age of 60 with a full pension if they have a minimum period of activity of 8 years. Bullfighters, of which some professional categories may retire at the age of 55 or 60 if a minimum number of performances have been done (150, 200 or 250 depending on categories).

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