Kela – The Social Insurance Institution, Finland
Social security and health research: working papers
38/2004

Ministry of Labour

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Monitoring the employment strategy and the duration of active working life

Originally published by the Ministry of Labour in Finnish
in *Työpoliittinen Aikakauskirja* 2004/1

Research Department

Helsinki 2004

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SUMMARY

This article was prompted by the constantly intensifying debate in Finland and throughout Europe about how to encourage people to stay on at work for longer. There is widespread agreement on the fact that it will be necessary to find a way of doing this as the population ages. Discussion of this subject has, however, often failed to define a method for measuring people's active working life and set tangible employment policy aims in this area, or in some cases, measuring methods have been defined in a way that precludes comparison. This has happened despite the fact that the EU's open method of coordination has elevated employment and pension policy indicators in general and statistical indicators describing this key aim in particular to an entirely new position as policy tools. In this article, we will present the key statistical indicators for the employment rate and for monitoring people's active working careers, analyse past trends and evaluate the target for raising the employment rate using these indicators. Our main point is that monitoring will have to comprise the entire lifespan if we are to achieve better optimal use of our labour resources. This will also require a new indicator which describes how long people stay at work.

In recent years, the position of ageing workers on the Finnish labour market has improved considerably. It is worth noting that the post-war baby boom generation has managed to stay on at work in much greater numbers than the preceding generation did at the same age, something which inspires faith that employment rates can be raised toward the Scandinavian average. Meanwhile, a comparison between EU Member States showed that the employment rate among the ageing had risen clearly fastest in Finland, both since 1997 and during the last few years since March 2001, when the Stockholm European Council set the target of raising the employment rate for ageing people to at least 50% by 2010.

This improvement in the employment situation of ageing people in Finland is in contradiction with the indicator used by the EU to illustrate the average exit age from the labour market, as that indicator shows that the exit age in Finland has fallen during the past few years. In fact, one of the key results of our study is that the calculation formula used by the EU for the calculation of the average exit age from the labour market is unsuited for comparison of changes over time or differences between different countries and between men and women. Instead, we propose a new indicator based on the calculation technique of the life table, where life expectancy is divided into time spent on the labour market and outside it.

The life-expectancy based measure we propose gave the expected period for belonging to the labour force for 15-year-old Finns as 35.3 years and their expected period of employment as 32.0 years. The corresponding figures for 50-year-olds was 9.3 and 8.7. The lifetime expected period of employment for 15-year-olds had grown by 4.3 years since the deepest point of the recession, while that of 50-year-olds had grown by 1.7 years. The aim set by the Government of 75% employment at the beginning of the next decade will require more effort to be put into helping older people stay on at work longer. Almost half the increase in working time of about 4.5 years that is needed by 2010 must be achieved by helping ageing people stay on at work. We also compared the period of employment calculated for the full lifespan needed to attain the Government's employment aim with Sweden's corresponding figures in 2002. Calculations show that the average lifetime employment (the expected total employment for 15-year-olds) would have to be almost a year longer in Finland in 2010 than it is in Sweden at present for Finland to attain Sweden's present employment rate of 75% with the ageing population structure that it will have. This is unlikely to succeed unless the structures of the labour market and unemployment security are also changed to resemble the other Nordic countries, in becoming more favourable towards part-time work and temporary absences from work.

Monitoring the employment strategy and the duration of active working life

This article was prompted by the constantly intensifying debate in Finland and throughout Europe about how to encourage people to stay on at work for longer. There is widespread agreement on the fact that it will be necessary to find a way of doing this as the population ages. Discussion of this subject has, however, often failed to define a method for measuring people's active working life and set tangible employment policy aims in this area, or in some cases, measuring methods have been defined in a way that precludes comparison. This has happened despite the fact that the EU's open method of coordination has elevated employment and pension policy indicators in general and statistical indicators describing this key aim in particular to an entirely new position as policy tools. In this article, we will present the key statistical indicators for the employment rate and for monitoring people's active working careers, analyse past trends and evaluate the target for raising the employment rate using these indicators. One of the key results of our study is that the calculation formula used by the EU for the calculation of the average exit age from the labour market is unsuited for comparison of changes over time or differences between different countries and between men and women. Instead, we propose a new indicator based on a life cycle perspective, where such problems do not occur.

1 Introduction

A person's lifespan is typically divided into three consecutive stages of life and work: first people learn the skills needed on the labour market in their childhood and youth, then they work, and finally, at the third stage, they retire. New challenges on the labour market are causing this schematic model to become outdated, but it still features in labour market policy targets and strategies. As the labour market develops towards a more flexible working life, work is becoming – and will be to an increasing extent – redistributed across a person's entire lifespan. Added flexibility comes from people's improved health and longer life expectancy, while work and training are coordinated even when people are still students and later on during their whole careers in accordance with the principle of lifelong learning. Flexibility also derives from the improved quality of working life, as people are able to distribute their increased spare time as periods in between their active working years to help them cope with their work, improve equality or help coordinate work and family life. However, it is the rapid ageing of the population that poses particular challenges to the labour market in terms of flexibility.

The labour market problems caused by the ageing of the population are common to all EU Member States and preparation for these challenges has received growing attention in the European Employment Strategy. The Lisbon European Council in 2000 set a target of a 70% employment rate for the European Union in 2010, while the Stockholm European Council the following year then found that this would require that employment among the ageing was improved so that at least half the ageing population between the ages 55-64 would be employed by 2010. Then, in 2002, the Barcelona European Council defined the target further by saying that in order to reach the aim, the average exit age from the labour market must be put off by as much as five years by 2010 (European Commission 2003; COM (2004) 24).

The aims of Finland's national employment strategy are in line with this, but there are also some notable differences. For instance, the 75% employment rate set as a target in the Government Programme is more demanding than the EU target, by about 175,000 jobs in practice, and it will require a higher employment rate at the end of the decade than the entire present labour force. In 2003, the activity rate, i.e. the percentage of the employed and unemployed out of the entire population is 'just' 74%. Taking into account the rapid ageing of the population, it is clear that attaining the Government's goal will require very considerable changes, not just in the demand for labour, but also in people's ability to stay on at work. Despite the higher employment target, the Finnish Government Programme only strives for an additional 2-3 years on the labour market for the ageing, instead of 5 years, which is the EU target. On the other hand, the Government Programme's special intersectoral employment policy programme emphasizes the importance of raising the workforce participation rate in all age groups using various coordinated measures reaching across administrative boundaries. The difference in targets between Finland and the EU could also be conceptual and caused by different methods of measuring the average exit age from the labour market. In any case, promoting longer working careers is a key employment policy aim, and a clear and reliable indicator is needed in order to monitor it.

With the introduction of the EU's open method of coordination, indicators serving the monitoring of employment and social policy for the ageing population have taken on an important role as tools in guiding policy. Indicators must be applicable in comparing the progress of national strategies with other Member States and common targets (COM (2001) 362. final). Jointly chosen indicators can be assumed to have an impact on the direction of national policy, even if the distribution of responsibility between the Community and national decision-makers remains unchanged in the process. A holistic approach has been ensured by using common indicators for the various policy sectors wherever possible, which have been agreed between the European Commission and its various Committees.

In this article, we will consider the employment targets set for the ageing population both in the European Employment Strategy and in the national employment strategy: their background, implementation so far, and the indicators used in monitoring them. We will start by examining trends in the employment rate and activity rate among the ageing in the EU Member States. In section 3, we will examine the main indicator of employment strategy, the average exit age from the labour market, which can be measured using different calculation methods. We estimate the average exit age using different methods and study how operational they are. The main conclusion we draw from our analysis is that the indicators in use are not the best possible in view of the challenges posed by an ageing population. To estimate the adequacy of labour resources, an approach is needed that can transpose the prevailing labour market behaviour of the working-age population to the entire lifespan. We present such an indicator in section 4 and on this basis, we assess the long-term employment target in section 5.

The analyses concerning Finland are based on tables for birth-year cohorts drawn from Statistics Finland's Labour Force Survey for 1990-2003, life tables for the same years and a population forecast from 2001. In addition to reports from the EU Commission and Eurostat, the international comparisons draw on data from the labour force surveys and life tables of Statistics Sweden from 2002.
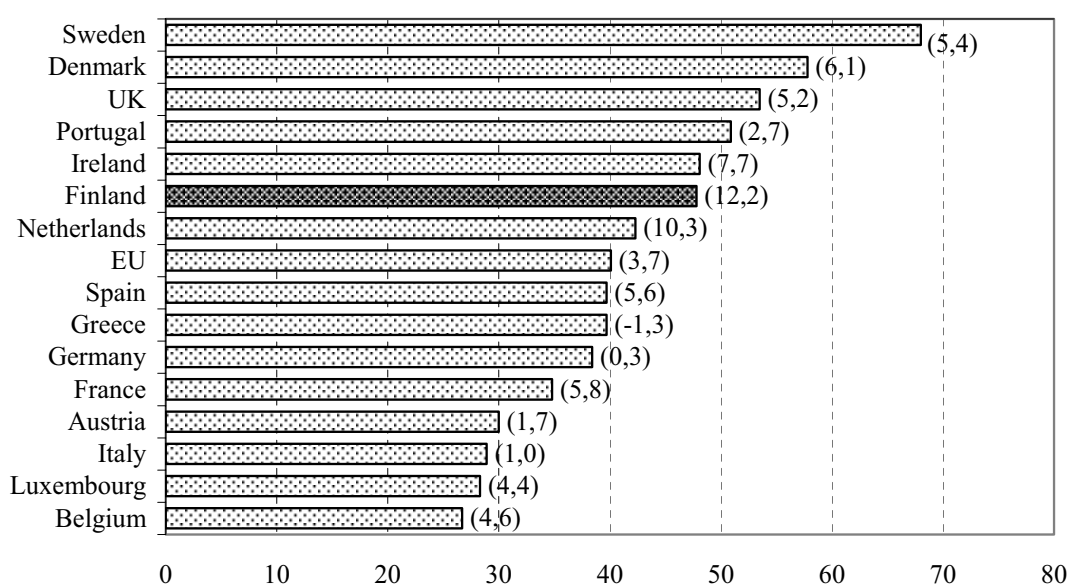
2 Employment trends among the ageing in the EU and Finland

2.1 Development in Finland the fastest in the EU

Due to falling birth rates, longer life expectancy and the ageing of the large post-war generations, the European labour market is changing rapidly. In the next few years, the numbers of ageing workers and people leaving the labour market to retire will begin to grow and the situation will grow worse towards the end of the decade. By then, the number of employed people will also begin to fall, unless a way can be found to increase the supply of labour. This ageing of the population is faster in Finland than perhaps anywhere else in the EU. There was a culmination last year, which was the first year when the number of ageing people (ages 55-64) in Finland exceeded the number of young people (15-24). According to the Commission's *Employment in Europe* report, 55-64-year-olds accounted for about 17% of the working age population in the EU in 2002, but will have reached 19% in 2010 (European Commission 2003). The corresponding figures for Finland are 19% and 22% according to Statistics Finland's population forecast.

In 2002, the employment rate of ageing people was 40.1% in the EU, i.e. 10 percentage points short of the 50% aim set by the Stockholm European Council. The target level has, however, already been exceeded by four Member States, while four other Member States have a figure below 30%. The employment rate among ageing people has traditionally been high in the Nordic countries, and it is in a league of its own in Sweden (68%), where it is more than 10 percentage points higher than Denmark (57.8%), which has the second highest figure of all Member States. The UK (53.5%) and Portugal (50%) have also attained the target level and Finland is about to reach fifth place after these successful Member States. In 2003, the employment rate among the ageing reached 49.6% in Finland (Figure 1).

Figure 1. Employment rates (%) of 55-64-year-olds in the EU in 2002 and changes 1997–2002 (figures in brackets, percentage points).
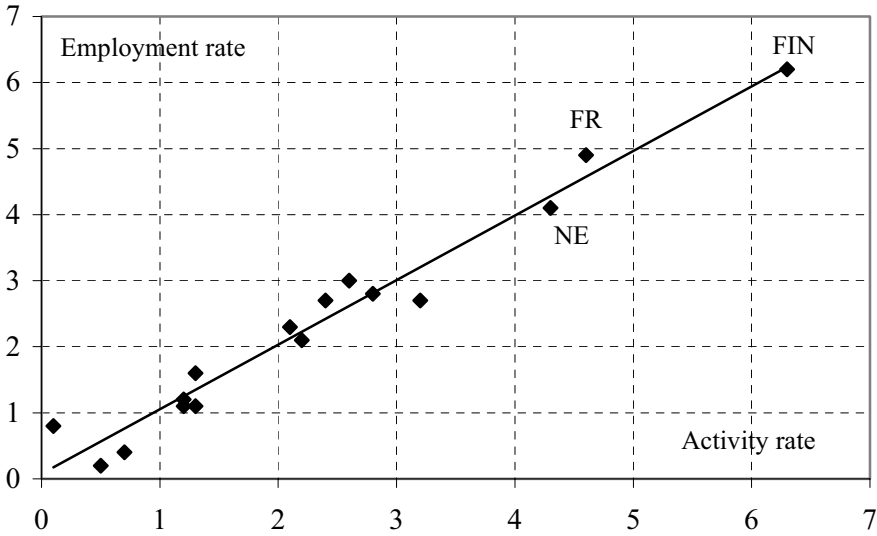

Data: European Commission, Employment in Europe 2003, Statistical annex

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The European Employment Strategy clearly supports employment among the ageing. The employment rate among the ageing began to edge up in the EU already halfway through the decade, but more noticeable results emerged after the Stockholm and Barcelona European Councils set their targets. In 2001 and 2002, the relative position of ageing people on the labour market improved almost without exception in all Member States. It was characteristic of this trend that the activity rate and employment rate improved at the same pace. The fundamental assumption of the European Employment Strategy, i.e. that the employment rate of the ageing can be improved by boosting the supply of labour, thus seems to have worked in the demand situation of the past few years. Presumably, people only enter the labour market from outside when they are ageing in very rare cases, so the positive trend in the EU, as in Finland, must have been the consequence of job retention above all. On the other hand, it is also a valid assumption that, as the working-age population grows older, the demand for labour and the recruitment of new employees will automatically begin to focus on ever older age groups, when young labour is no longer as readily available. It is the task of employment and social policy to support this transition and to ensure that the qualifications of the labour force and people's willingness to continue to work correspond to the changed needs.

In Finland, the rise in the employment rate for the ageing has been more rapid than in any other Member State. From 1997 to 2002, the employment rate for the ageing rose by a total of over 12 percentage points, while the rise in the EU was an average 3.7 percentage points. The trend in Finland has also been the best in the EU after the target was set at the Stockholm European Council. In 2001 and 2002, the activity rate for the ageing rose by a total of 6.3 percentage points while the employment rate rose by 6.2 percentage points. The corresponding figures for the entire EU were 2.1 and 2.3 percentage points, respectively (Figure 2).

Figure 2. Changes in the activity rate and employment rate of the ageing, 2000–2002, percentage points.

Data: European commission, Employment in Europe 2003, Statistical annex.

The improved employment rate for the ageing has considerably improved the overall employment rate in Finland in recent years. From 1997 to 2002, the number of employed people rose by a total of 200,000, of which over half or 107,000 people were aged 55-64. The percentage of ageing people in the entire workforce naturally grows as the population ages, but most of the growth — about 65,000 people or close to 2 percentage points of the entire employment rate — can be estimated to have been the consequence of a fall in unemployment among the ageing and deferred exits from the labour market. If the employment rate for the ageing had remained on the 1997 level for each birth cohort, employment would only have grown by 42,000 people as a direct consequence of the ageing of the population. The promising trend we are seeing now seems to continue despite an economic slowdown and the cessation of employment growth. In 2002, the number of ageing employed people grew by 30,000; it grew by another 26,000 in 2003, of which about half derived from improvement in the employment rate. The employment rate of 55-64-year-olds went up by 2.1 percentage points in 2002, and 1.8 percentage points in 2003.

2.2 The big post-war generations have stayed on the labour market

The rise in activity rates and employment rates does not tell us about the factors behind this phenomenon, nor do they tell us whether we can expect the trend to continue. The dynamics of people's presence on the labour market can be studied using a concept called cohort effects. This is a phenomenon which has been observed on the labour market, according to which the employment rate and activity rate of younger cohorts tend to rise to a higher level than that of the preceding cohort at the same age. Figures 3 and 4 examine the cohort effect based on four 5-year cohorts drawn from the Labour Force Survey data for 1990-2003. Here the labour market presence of the post-war 'baby boom' generation, born 1945-1949, which is so crucial for attaining the employment targets is compared with the two five-year cohorts preceding it — the people born during the war (1940-44) and before the war (1935-39) — as well as the five-year cohort following it, consisting of people born in the early 1950s.

In examining the employment rates for the different cohorts, the first observation is that the recession which coincided with the period of observation struck these Finnish people at different ages, which has had a clear effect on their subsequent employment and ability to stay on the labour market. Aside from the impact of economic cycles, however, there is also a clear cohort effect in evidence, with the younger cohorts working for longer than the preceding ones, at least in adulthood. Comparison also shows that the baby-boomers in particular have stayed on the labour market for longer than the generations preceding them. For a decade or so, the employment rate of the post-war baby boom generation remained at about 75%, and it is only recently that it has begun to fall as this generation grows older. Exit from the labour market still takes place much more slowly in the post-war generation than in the two cohorts preceding it, who received the early retirement pensions planned especially for them. In 2003, now aged 54-58, the employment rate for the baby-boomers is about 10 percentage points higher than it was for the preceding 5-year cohort when they were the same age in 1998.

The growing welfare, which the post-war generations began to benefit from at different ages, has created the foundation for improved employment rates. The factors which influence people's ability to stay on at work, e.g. higher education levels, better health and

Figure 3. Comparison of the employment rate for the big post-war generation (born 1945–1949), the two preceding five-year cohorts (1940–1944 and 1935–1939) and the following co-hort (1950–1954) at the same age.
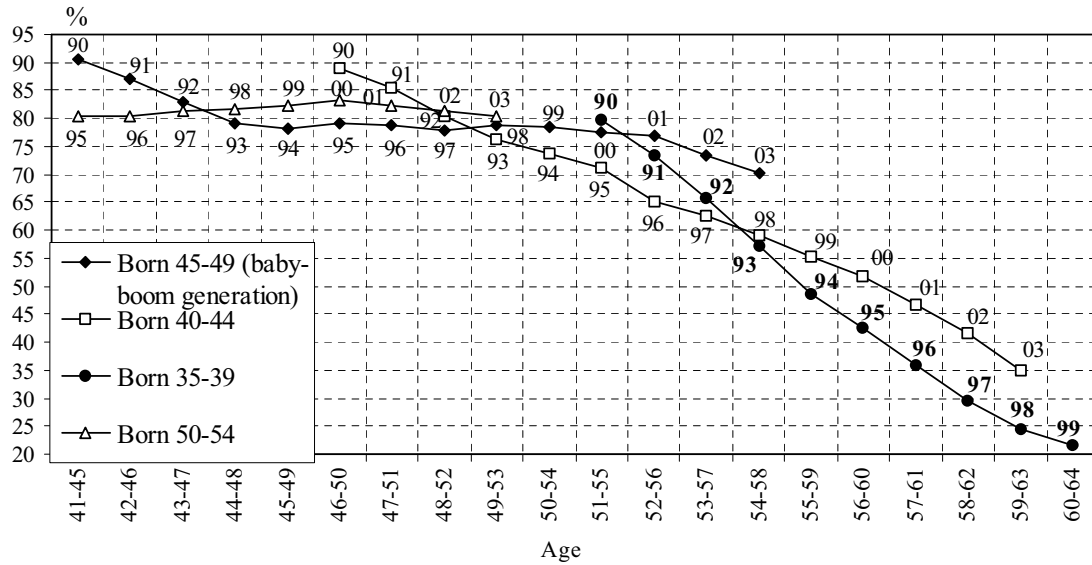
Source: Statistics Finland, Labour Force Survey.

Figure 4. Comparison of the activity rate for the big post-war generation (born 1945 - 1949), the two preceding five-year cohorts (1940–1944 and 1935–1939) and the following cohort (1950 - 1954) at the same age.

Source: Statistics Finland, Labour Force Survey.

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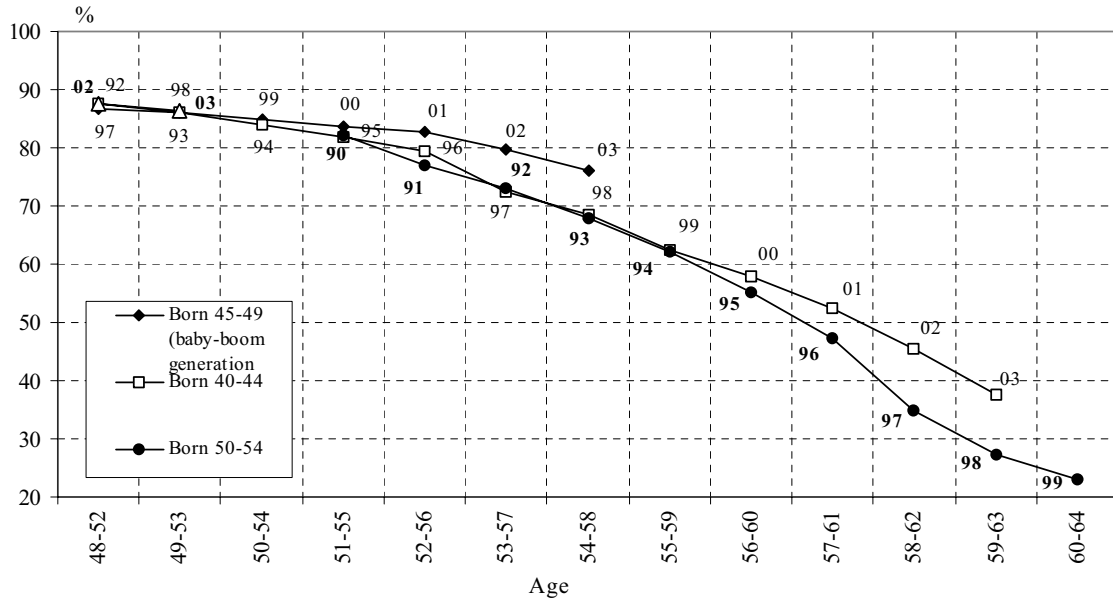
flexibility in working life, have all boosted the employment of the post-war generations. A comparison of the baby boomers and the cohorts born in the early 1950s reveals that the difference in employment rates between cohorts is no longer that big. Last year, the employment rate for the cohorts born in the early 1950s was only about one percentage point higher than the corresponding figure for the baby-boomers at the same age in 1998. Where the supply of labour is concerned (Figure 4), the corresponding cohort effect cannot be observed at all. As people approach early retirement age, the activity rate for all the three last cohorts has been the same, and differences have not emerged until people are 55-64. Even at the age of 50-54, activity rates in Finland are high, as high as in Sweden.

Examination of the different cohorts shows that we can expect higher activity rates and employment rates than preceding cohorts from the baby-boomers in the future, too, something which will compensate for the negative employment effects of an ageing population. The cohort effect can be predicted to continue for the baby boomers at least until the end of the decade, and even beyond, after the fixed retirement age is abolished. How much the cohort effect can raise the overall supply of labour and encourage job retention depends on employment trends, changes in working life and measures which help an ageing population adjust to these changes. It should also be noted that although our greatest potential extra labour supply is in the ageing population, measures to help people stay on at work for longer should focus on everyone of working age.

2.3 The national strategy for active ageing produces results

One of the explanations for the promising trends in Finland is that functioning tripartite cooperation which takes the needs of all the parties involved into account has made it possible to develop the legislation according to the economic and social situation at any given time. Finland has also responded to the challenge of ageing with extensive national action programmes, which were even started before the European Employment Strategy existed. It should also be taken into account that in Finland, the employment of ageing people fell exceptionally steeply during the recession in the early 1990s. Just before the recession, the employment rate for the 55-64 age group had begun to improve, and now we have clearly exceeded the level where the figures started plummeting in the 1990s (see Hytti 2002).

Finland's rapid response in starting action programmes and flexibly adapting legislation to changing situations may explain why Finland was able to achieve a breakthrough in helping ageing people stay on at work some years earlier than the other Member States. As early as 1990, the labour market organizations issued a recommendation on promotion of work ability at workplaces. A decision was made on the National Programme on Ageing Workers in 1997, with the aim of improving ageing employees' ability to continue to work productively with good work ability The Programme was implemented in 1998-2002 and a new programme, called VETO, has been set up as a continuation of it for the period 2003-2007. The conditions for early retirement pensions and special security measures for ageing unemployed people, which were expanded during the recession, have been made stricter several times as the labour market situation has improved. A considerable change in terms of the attitudes of those involved was carried out in 2000, when a decision was made to focus labour policy measures on ageing unemployed people on the unemployment path to retirement. The activation rate for the ageing unemployed, which was less

than three per cent for the 55-59 age group, has been rising steadily since then and was 10% in 2003.

The exceptionally rapid rise of the employment rate for the ageing in Finland since 1997 is the consequence of the combined effect of a number of different factors. However, its most essential aspect is that, as the population ages and the structure of the potential work-force changes, it has proved possible to find new solutions in coordinating the labour market and the social protection system which support the employment of the ageing, in particular. In this sense, Finland can also be regarded as an example that proves that the European social model works, with the basic idea that economic development and social security are not opposites, but in fact support each other. These were also the principles applied in deciding on the 2005 pension reform, which will involve measures such as the removal of a fixed retirement age, improved incentives to continue working, and transfer-ring income protection for the ageing unemployed in full to the unemployment security system.

The improved employment of the ageing over the past few years is also evident in a falling utilization rate for social protection. Above all, the number of ageing people on pensions has fallen. In 1997, 51.8% of 55-64-year-olds were receiving an individual early retire-ment pension. In 2002, this figure had fallen to 41.1%, excluding recipients of part-time pensions who were still working part-time, too (Finnish Centre for Pensions and Social Security Institution 1998; 2003.). Use of the fast track to an unemployment pension has also fallen dramatically. The downside of this positive trend is that a growing percentage of the ageing long-term unemployed are in the 'hard core' of unemployment, i.e. very difficult to find work for and now receiving labour market support (Hytti 2003a). Thanks to the programmes for screening the actual work ability of the long-term unemployed, the situation of the most difficult cases of exclusion among the ageing unemployed is improv-ing and will improve further as more effective employment services in line with the Gov-ernment Programme are started up.

The potential of an ageing employee to continue to work is also closely tied to the practi-cal nature of that person's work and the demands it places on the person performing the work. The part-time pension system and the part-time work options it has brought with it have been instrumental in helping people stay on at work. About half the increased em-ployment among ageing workers in recent years is explained by part-time work. In 2002, an average of 58,000 ageing employees did part-time work while close to 40,000 ageing employees received part-time pensions. EU statistics also indicate that the opportunity of doing part-time work raises the employment rate of the ageing, because high percentages of part-time work among the ageing are seen both in Member States with high employ-ment rates (Sweden, Denmark) and the countries where the employment rate for the age-ing has risen fastest in recent years (Finland, the Netherlands). It seems likely that part-time work can be increased even further in Finland, where it is still below the EU average despite the rapid growth in recent years. One positive feature in Finland is that part-time work is more evenly distributed among men and women than it is elsewhere. In 2002, the percentage of ageing men doing part-time work was second highest in Finland, after the Netherlands (European Commission 2003).

The noticeable increase in the activity rate and employment rate for the ageing in Finland is a consequence of the fact that people are staying on at work for longer than they used to.

Figure 5 shows that the activity rate for the 55-64 age group in particular has grown in the past few years. In 1997, as much as half the population had left the labour force just after the age of 58, but in 2003, the corresponding median age for making an exit from working life was about 59.5. This means that the average exit age from the labour force would have gone up by over a year in the past six years. This type of assessment of the transition of the labour supply curve appears to be the simplest method for assessing the change in average exit age. However, the aim of increasing the duration of careers which is set down in the Government's employment programme will become clearer if we talk about how long people work for against their entire lifespan. Before going into that, however, we will examine how the average exit age from the labour force is measured both on the national level and in the European Employment Strategy in the following section.

Figure 5. The activity rate for 50–64-year-olds with median values for 1997, 2000 and 2002.
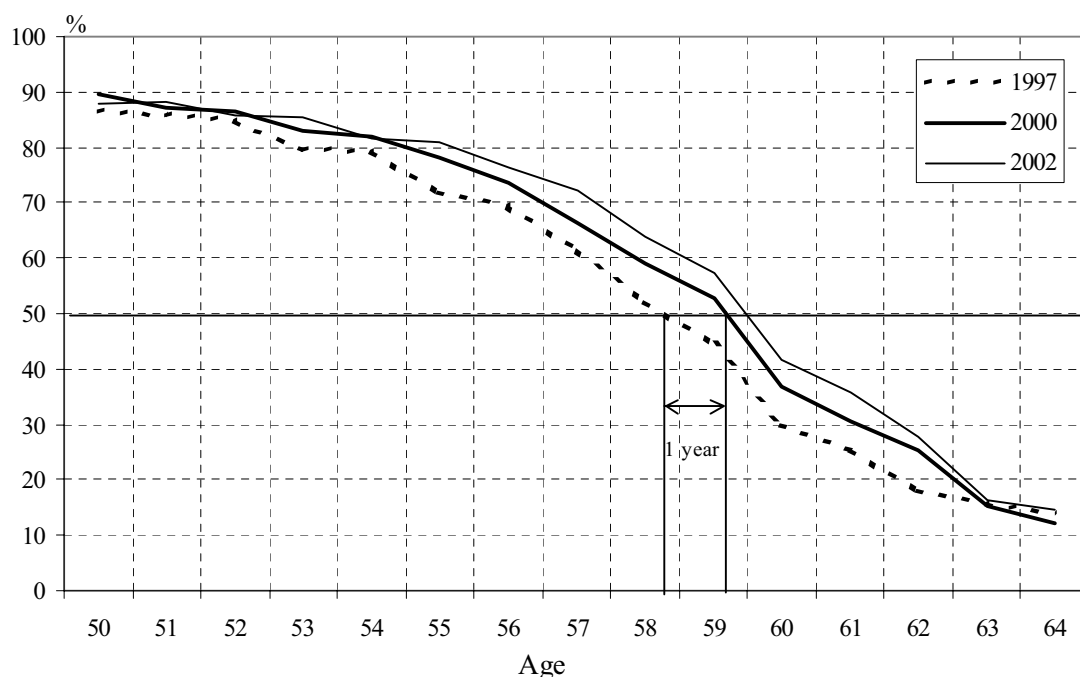
Source: Statistics Finland, Labour Force Survey.

3 Measuring the average exit age from the labour force

3.1 Background to indicators: taking retirement and leaving the labour force

It is one of the common aims of pension policy and employment policy to try to increase the average exit age from the labour market. The key aspect of monitoring this is to measure the length of people's working careers. The fundamental principle is that as the population ages, people will have to participate in gainful employment for a longer period of their lives in order to ensure a high employment rate and, as a consequence, the services and funding needed for the welfare state. The demand for longer careers follows directly from two mutually reinforcing factors of the ageing of the population: the ageing of the

big post-war generations and the general increase in life expectancy. The only way of preventing unfavourable trends in the employment rate or the economic dependency ratio in the short term is to increase the employment/population ratio in each one-year cohort or age group. This is easiest to do in the cohorts approaching old age, where labour participation is lowest. As the employment rate for each age group grows, this also means people's average working career grows. This idea is also included in the employment strategies applied by Finland and the EU, where target employment rates are defined together with the increase in average exit age needed to achieve them.

It has proved much more difficult to reach any agreement on the statistical indicators to be used to monitor the impact of implemented policies on the average labour market exit age, than to make projections for the future. Various statistical indicators showing the length of 'active' life expectancy have been developed since the 1980s (OECD 1988). Until very recently, the discussion has focused primarily on the viewpoint of pension systems, and consequently the key concept has been 'effective retirement age', as distinct from the statutory retirement age of public pension systems. However, in practice, international comparisons have been made using labour force surveys rather than social protection statistics. This has been largely due to the fact that no comparable statistics have been available on early retirement systems and other similar long-term benefits. International comparisons have generally used two concepts, 'effective retirement age' and '(effective) average exit age', as synonyms. In practice, these indicators have been calculated in a number of different, though in principal similar, ways, all of them based on the activity rate of the ageing population and describing how steep the fall in the activity rate is after a specific age (45/50) (see Besseling and Zeeuw 1993; Latulippe 1996; Scherer 2003).

In Finland, the 'effective retirement age' has mainly been examined from the point of view of the pensions system, and the statistical indicators have consequently also been calculated on the basis of pension statistics (Hytti 1998, 75-94, 199-203; monitoring report for the National Programme for Ageing Workers 2002; Kannisto et al. 2003). Where the Government employment policy programme is concerned, it has since been agreed that the Central Pension Security Institute's figures for expected transition age to an employment pension should be used as a general indicator of 'effective retirement age'. This indicator describes the average retirement age on condition that the incidences for new pensions and mortality for each one-year age cohort remains on the level of the year under review (Kannisto et al. 2003). It is calculated separately for people aged 25 and 50, since retirement can be influenced in different ways at different stages of a person's career. In practice, the expected retirement age of a 25-year-old describes the entire population covered by pension insurance, the length of whose career can be influenced before the age of 50 using methods such as training, health care, occupational health and safety and rehabilitation. Meanwhile, as the retirement rate begins to speed up after the age of 50, pension policy methods become an additional influence.

It has become increasingly clear that two supplementary perspectives are needed in order to examine the length of people's 'active-life expectancy': the pension system and the labour market. The effective withdrawal age from the labour market is different from the effective retirement age. In labour force surveys, pension recipients who worked during the survey week are included under the active population, for instance entrepreneurs and members of their families who continue to work when retired. Similarly, pension recipients may be unemployed and thus part of the active population, if they are actively looking

for work. The concepts of leaving the labour force for good and retiring have become more and more separated from each other as a consequence of the recession in the 1990s, too, with the emergence of the 'fast track to an unemployment pension' and long-term unemployment. The ageing long-term unemployed have often withdrawn from actively seeking work many years before they retire, and in the future we can assume that the number of pension recipients who work will increase noticeably thanks to the 2005 pension reform and the predicted labour shortage.

3.2 Average exit age in the European Employment Strategy

The target set by the Barcelona European Council of a progressive increase of about five years in the effective average exit age of EU citizens is based on an assessment of labour supply by the Commission. It indicates that a 50% employment rate target for the ageing would require that two thirds of the 46-55 age group in the EU in 2001 would still belong to the active workforce in 2010, when they will be aged 55-64. This would mean a major change to the present activity rates, which begin to fall rapidly after the age of about 50 in all Member States. On average, only some 10% of all EU citizens continue to work until they are 65. According to the Commission's estimate, the exit age would rise by five years if the activity rate of 65-year-olds could be brought up to that of 60-year-olds today, 36%, by 2010. The labour supply would then grow in the area of the present EU by 7-9 million people, which would be enough to raise the employment rate of the ageing to 50% (European Commission 2002 and 2003).

When the Barcelona target for 2010 was set, the starting situation was described using the indicator 'average exit age from the labour market', which has since been made an indicator in the European Employment Strategy. It is calculated on the relative change in activity rate between the ages of 50 and 70. The calculation formula for the indicator assumes that no one has left the labour market before the age of 50, i.e. the probability of belonging to the active population at age 49 is 100%. The upper age limit has been set at 70, by which age everyone will have left the labour force. This method was originally developed by the OECD (Scherer 2002) and it is an adaptation of a corresponding formula used by the ILO (Latulippe 1996). The ILO's calculation formula was static, based on one year's observations, and measured only the effects of ageing. The OECD model is dynamic, and compares the activity rate of the same cohort in two consecutive years. The ILO's and OECD's estimates have been based on the activity rates for 5-year cohorts. In EU monitoring, dynamic calculation formulas are applied to the activity rates for one-year age cohorts.

The estimate of the average exit age is based on the changes in the activity rate for each cohort. First, the probability that a person who is in the active labour force will remain or exit during the next year is calculated for each cohort.[1] Then, a curve for the probability of

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[1] In the static model, probability is calculated from one year's data by comparing the activity rate for two consecutive age groups. For instance, in 2002 the activity rate for 53-year-olds was 85.5% while that for 54-year-olds was 81.7%. The probability of a 53-year-old belonging to the labour force at age 54 was then 95.6% (81.7/85.5) while the probability of leaving the labour force was 4.4%. The dynamic analysis compares the activity rate of the same cohort in consecutive years. Those who were 54 in 2002 were 53-year-olds in 2001, at which time their activity rate was 83.6%. The probability of the cohort aged 53 still being in the labour force at 54 was then 97.7% (81.7/83.6) while the probability of leaving the labour force was 2.3%.

remaining in the active labour force which is analogous with the surveillance curve used in demography calculation is calculated, describing the probability of people who are in the labour force at 49 staying in the labour force until various specific ages up to 70. These probabilities and different cohorts' probabilities of exiting from the labour force produce a distribution of exit age, and based on that, the average exit age from the labour market is then calculated as a weighted average.

Activity rates are corrected to some extent in the estimate, in order to reduce randomness and improve the potential for comparison between countries. After the age of 64, activity rates are evened out by assuming that they fall in a linear fashion to 0 at the age of 70. It is also assumed in the estimate that activity rates do not rise as people grow older. Any occurrences of such rises are taken to be sampling errors, which are corrected so that the probability of remaining in the workforce is not greater than 100%. This calculation method is illustrated by Figures 6 and 7, which show a probability curve for remaining in the labour force and the distribution of exit age from the labour force, estimated by us on the basis of Finnish statistical data. The method has been explained in detail in, for instance, the *Employment in Europe* report and the summary reports of the open method of coordination for the EU's employment and pension strategies (Commission of the European Communities 2003; European Commission 2003; COM (2004) 24).

Figure 6. Probability curve for remaining in the labour force, dynamic estimation.
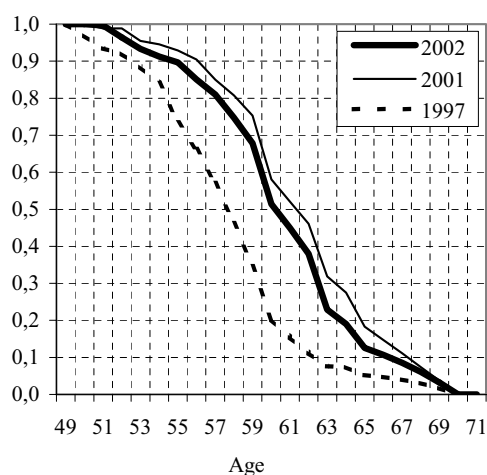
Figure 7. Distribution of exit age from the labour force, dynamic estimation, 2002.

Data: Statistics Finland, Labour Force Survey.
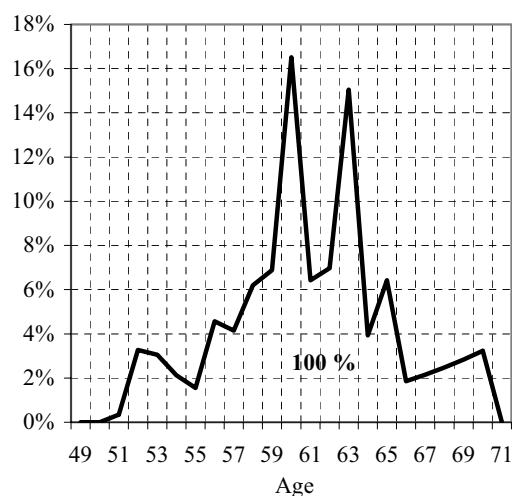
Data: Statistics Finland, Labour Force Survey.

3.3 Estimated average exit age in Finland, 1990–2003

When the Barcelona target was set in 2001, the indicator showed that the average exit age from the labour force in the entire EU area was 59.9. The Commission also produced corresponding starting levels for all Member States for the purpose of monitoring the European Employment Strategy. In Finland, the average exit age in 2001 was 61.3. No Member State had attained the target age of 65, even if the corresponding employment rate target had already been exceeded by five Member States.

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Comparison of countries and evaluation of developments are made more difficult by the fact that the indicators have not been calculated for the Member States retroactively, and that even for 2002, only advance information is available as yet. According to this, the average exit age in Finland seems to have begun to fall. This is a surprising turn of events in view of the rapid rise in employment rates and activity rates reported above. In fact, it begs the question of whether there could be something wrong with the indicators of the average exit age from the labour force.

In order to study this in more detail, we estimated the indicators for average exit age for 1990-2003 using both the dynamic calculation model used by the Commission and the corresponding static model. In addition, we used the material to approximate a median age for each year, at which half of the ageing would still belong to the workforce. The trend in the average exit age according to these three indicators is seen in Figure 8.

Figure 8. Estimates for the average exit age from the labour market, 1990–2003.
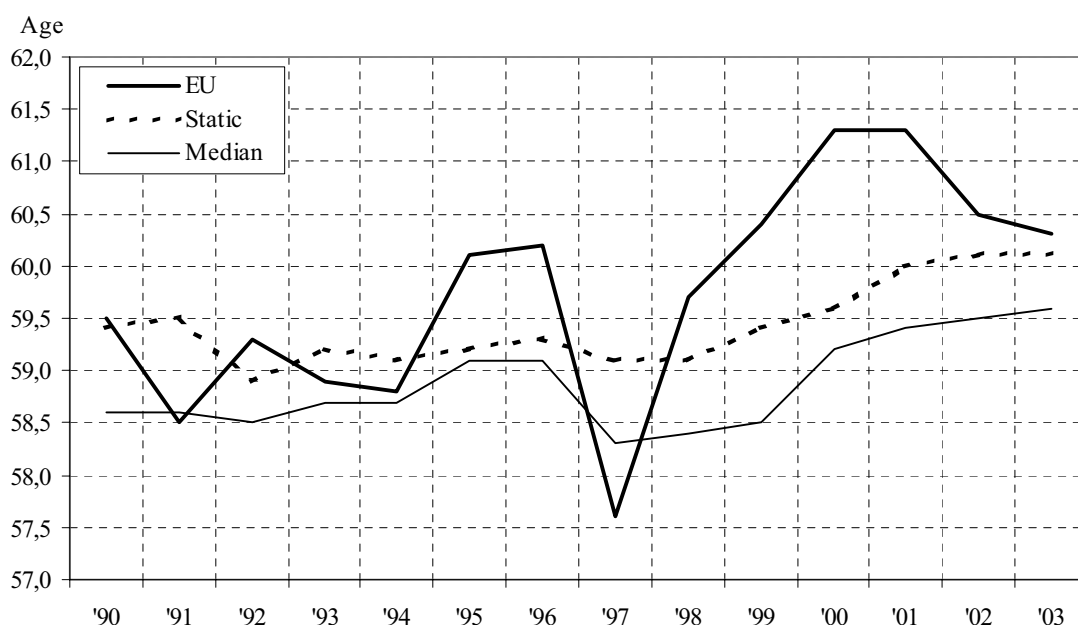
Data: Statistics Finland, Labour Force Survey.

According to our estimates, the average exit age would have begun to fall in 2002, calculated with the Commission's dynamic method, falling by a total of about a year in 2002-2003. In 2002, the average exit age was 60.5, compared with 60.3 in 2003. The level of the other two indicators we estimated are lower, but they give a different interpretation of the trend over the past two years. The static calculation model shows a slight rise in the average exit age still in 2002, and then the rise stops in 2003. The median age of ageing people's participation in the labour force has developed in a similar direction with the indicator produced by the static calculation method. As of 1997, the average exit age would have risen by about a year according to these two indicators. (In comparing indicators and the trends they show, the reform of labour force survey methods in 1997 must be taken into account; it lowered activity rates by setting stricter criteria for active job-seek-

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ing. This has particularly influenced the indicator produced by the dynamic calculation method. Figures after 1997 are comparable, however.)

The EU indicator creates an impression of a fairly high average exit age. However, the first critical observation about the indicator is its surprising instability. Intuitively, it would be natural to assume that individual cohorts do not differ from each other all that much on the labour market, which would mean that the average exit age would also change slowly. Where pensions were concerned, it was usually estimated that it would take about a decade to raise the average retirement age by one year (Commission of the European Communities 2003, 60). The Commission's indicator shows, however, that the average exit age has fallen by one year during the decline of the past few years, and all this while the employment rate and activity rate for the ageing, calculated from the same labour force survey data, has risen sharply.

The connection between the target of raising the average exit age and employment rates and activity rates is unclear due to the great variation of the indicator, and on the whole, the exit age target set by the Commission seems overdimensioned. Certain Member States (Finland, France, Portugal) have set more modest targets in their national strategies (COM (2004) 24). It could also be that they are measuring the labour force exit age in some other way. According to our assessment, the calculation method used by the EU has a number of both content-based and technical weaknesses, which makes it unsuitable for monitoring the average exit age from the labour force, at least in Finland.

– The calculation formula used by the Commission does not fulfil the requirements set for indicators, specifically the requirements that they are easy to understand and easy to use for comparisons between different countries or points in time. Interpretation is difficult on the whole and there is no basis for comparison, since the indicator does not take into account the difference in the level of the activity rates of ageing people in different Member States. When the basic level is set for all Member States as the activity rate of 49-year olds, this produces results whereby Sweden, for instance, has not yet attained the desired EU average, despite having a 68% employment rate for the ageing. It is also impossible to compare the figures for men and women because the basic level has been standardized.

– Our estimates for Finland show that the Commission's measuring method is also unsuited for predicting future trends. During the past few years, the employment rate and activity rate of the ageing have risen rapidly in Finland. However, a look at their changes in level indicates that working careers in Finland have actually grown longer. In annual monitoring, the Commission's dynamic calculation model cannot detect the change that has taken place.

– The indicator using the dynamic calculation model is prone to randomness and can easily lead to the wrong conclusions. It is capricious specially in cases where employment trends are not progressing smoothly or there are sampling errors involved in the measuring. The cyclical slowdown in the growth of activity rates over the past few years thus appears to have led to a fall in the average exit age, after the very rapid rise that preceded it. In the dynamic calculation model, instability is caused particularly by cohort effects being confused with random or cyclical variation. If

cyclical variation or random errors are interpreted in this model as cohort effects, that causes the indicator to 'fluctuate'. The results of static estimation are more stable, as there can be no cyclical variation in the material from a single year.

– Due to sampling errors, labour force surveys in Finland do not have the exactness needed to estimate average exit age from the material for a single year. In 5% of the individual cohort observations for 1990-2003, the probability of remaining in the labour force increased by one year as the cohort aged. In studies by gender, these cases, interpreted as random error, increased to 10%. In the estimation method, random error can have a decisive impact on the average exit age when errors occur at the start of the age profile. They then have an impact on the calculation of the probability of remaining on the labour market throughout the rest of the age profile. In 2002, for instance, the curve showing the probability of remaining in the labour force has dropped by an entire age profile due to this type of error at the start, even if activity rates were actually rising after the age of 55 (cf. Figures 3 and 6).

– It seems that the indicator used by the EU is more sensitive than average to errors where Finland is concerned, because exit from the labour force is more precipitated here than elsewhere. On the threshold of ageing, activity rates in Finland are still about 15 percentage points higher than the EU average, and at the age of 60, the difference is still about 5%, but the percentage of people in Finland who stay on at work until they are 65 is already slightly lower than the EU average. In Finland, employment rates and activity rates have gone up in recent years, especially for the 55-59 age group. These changes do not show up to their full extent in the Commission's indicator, where the estimation of the activity rate of the 50-54 age group has particular significance. In Finland, meanwhile, the activity rate of this age group is already reasonably high — on a level with Sweden — and there was no cohort effect at all to be observed in these age groups in Finland over the past few years.

It is essential for Finland's employment targets that people stay on at work for longer. The average exit age from the labour force as defined and used by the EU clearly does not fulfil the demands that must be placed on the indicator used to monitor this key target. What we need is an indicator for measuring the length of people's active working life, which has a clear connection with the employment rate and activity rate for the population, and which allows us to examine people's labour force participation in a life cycle perspective and at different stages of the life cycle.

4 Changes in labour force participation in a life cycle perspective

4.1 Method

In monitoring the length of people's working careers, the fundamental principle should be that whatever indicator is used describes the length of the period people spend as part of the labour force and in employment, and the change in this period of life in proportion to the change in life expectancy as a whole. What is needed is an indicator which is as generally applicable as possible, and which gives comparable results both between countries

and over periods of time. It is also important to be able to compare genders and age groups. There is a method which is widely used in public health studies, where the total life expectancy is divided into different stages of life in terms of health and work ability, and this fulfils the above requirements (see Sullivan 1971; Robine et al. 1999; World Health Organization 2001). The method combines the mortality rate information which determines life expectancy in the same indicator as structural and flow information describing the state of health for individual cohorts. It is similar with many other demographic indicators, where demographic phenomena during one year are collated to form an indicator for an artificial cohort (e.g. total fertility rate and total divorce rate).

There are two main types of methods based on dividing up life expectancy and describing the expected average duration of the various stages of life: those based on prevalence (cross-sectional data) and those based on incidence (flow data). In labour market studies, the prevalence-based method draws on the percentages of employed people and people belonging to the labour force, i.e. labour market resource information, at a given time. By contrast, the incidence-based method uses the probability of transition from one labour market status to another, e.g. transitions into the labour force or transitions out of the labour force.

Each of these life table based methods has an artificial starting point, i.e. a synthetic cohort, to which the prevalences or incidences of the year being studied are applied in each one-year age group. For instance, in calculating the expected period for belonging to the labour force, the prevalence-based method gives an expectancy figure which describes for each specific age x the expected average period of belonging to the labour force after attaining age x if the mortality and activity rates for the year being studied apply. Meanwhile, the incidence-based method describes the expected periods that the cohort will spend as part of the labour force and outside the labour force, assuming that the mortality and probability of transition in and out of the labour force for the year being studied apply. (See Hytti 1999.) Like life expectancy, the expected period for belonging to the labour force and for employment are also indicators applying to the year under review, rather than predictions.

In this study, we will use the prevalence-based life table method (also called the Sullivan method). This macro-level demographic method is well suited to monitoring an employment programme, because it allows us to clearly separate a life cycle perspective on labour force participation and the impact of changing population age structure, and to measure the independent impact of each of these two factors on changes in the employment rate. Another favourable characteristic of this method is that the active period spent on the labour market is examined with the same kind of indicator that the National Health 2015 programme uses for measuring health expectancy. By using similar indicators in the monitoring of both programmes, a bridge can be built between the two key policy programmes for population ageing.

Appendix table 1 explains the calculation method of the prevalence-base life table method. The example gives the total life expectancy broken down into labour force life expectancy and expectancy of life outside the labour force for 2002. The figures in the first column (1_x) denote the number of the original birth-year cohort of 100,000 that will attain age x, when the mortality rate of the cohort is the same as in 2002. Column L_x shows the total number of person years lived at age x. This is obtained by calculating the average of

those having attained age x and (x+1). Life expectancy is calculated by first adding up the person years lived at age x and upward, giving the sum of person years for the remaining life span of the cohort (T_x). When the total number of remaining person years of age x is divided with the number of people who attained this age (1_x), the result is the life expectancy at age x (e_x). The labour force expectancy is obtained by first multiplying the person years lived at each age (L_x) with the activity rate of the annual cohort in question (a_x). Then the labour force expectancy is calculated in the same way as life expectancy. The value for expected years outside the labour force is obtained by calculating the difference between life expectancy and labour force expectancy (^re_x).

4.2 Labour market expectancy 1990–2003

On the basis of the mortality and labour force statistics of 2003, a 15-year-old Finn who was finishing comprehensive school could expect to live for another 63.9 years, out of which he or she would belong to the labour force for a total of 35.3 years and be employed for 32.0 years. Boys had 6.7 years less life expectancy than girls, but they were expected to belong to the labour force for 1.2 years more and be employed for one year longer than girls the same age (Table 1).

Last year, the active-life expectancy, i.e. the expected years of life in the labour force, of 15-year-olds had almost reached the level it was at before the recession in the 1990s; the difference from 1990 was only six months. However, the expected years of employment were still 2.5 years less than at the beginning of the last decade. The active-life expectancy of 15-year-olds has increased by 1.9 years since the deepest recession in 1994, while the expected years in employment have gone up by 4.3 years. Growth only applies to 1994-2001, after which both the active-life expectancy and the expected employment of 15-year-olds has remained more or less unchanged due to the economic slowdown (Figure 9). Gender differences in expected employment for 15-year-olds were at a minimum during the recession in the 1990s, even favouring girls slightly. Since the recession, the expected employment of 15-year-old boys has been between a year and 18 months longer than that of girls (Table 1).

The active-life expectancy and expected employment of people over 50 have shown similar variation to those of 15-year-olds, which can be considered to represent expected employment during the entire life cycle. The difference is that the growth cycle in the active-life expectancy and expected employment of the ageing continued until 2003, although the growth rate abated clearly in the last two years. In 2003, people age 50 still had a life expectancy of 30.7 years, which 9.3 years were active-life expectancy and 8.7 years expected employment. In each, figure, the difference for men and women was only 0.2, although the difference in life expectancy was 5.3 years more for women.

Compared with 1994, the active-life expectancy of 50-year-olds has increased by one year. Similarly, expected employment has increased by 1.7 years. It should be noted that both active-life expectancy and expected employment for 50-year-olds has already exceeded the pre-recession level in the early 1990s. As with 15-year-olds, the gender differences for 50-year-olds grew narrower during the recession but have grown slightly since, favouring men.

Table 1. Total life expectancy, expected periods of belonging to the labour force and of being employed at the ages of 15 and 50 in 1990, 1994, 1997 and 2000–2003.

Age/year	Life expectancy			Expected time in labour force			Expected employment		
	Both	M	F	Both	M	F	Both	M	F
Age 15									
1990	60.6	56.6	64.5	35.7	36.4	35.1	34.5	35.0	34.1
1994	62.1	58.3	65.7	33.4	34.2	32.7	27.7	27.8	27.7
1997	62.6	59.0	66.0	33.6	34.4	32.8	29.2	30.0	28.4
2000	63.1	59.6	66.4	35.0	35.7	34.3	31.5	32.4	30.6
2001	63.5	60.0	66.8	35.3	36.0	34.6	32.0	32.8	31.1
2002	63.6	60.2	66.9	35.4	35.9	34.9	32.1	32.5	31.6
2003	63.9	60.5	67.2	35.3	35.9	34.7	32.0	32.5	31.5
Age 50									
1990	28.1	24.9	30.9	8.7	9.0	8.4	8.5	8.8	8.2
1994	29.3	26.3	31.9	8.3	8.4	8.1	7.0	7.1	7.0
1997	29.6	26.7	32.2	8.2	8.4	8.0	7.2	7.4	7.0
2000	30.2	27.3	32.7	8.8	9.0	8.7	8.1	8.3	8.0
2001	30.5	27.6	33.0	9.1	9.3	9.0	8.4	8.6	8.3
2002	30.5	27.7	33.0	9.2	9.4	9.1	8.5	8.6	8.4
2003	30.7	28.0	33.3	9.3	9.5	9.1	8.7	8.8	8.5

Data: Statistics Finland, life tables and Labour Force Survey.

Figure 9. Expected years of belonging to the labour force and of being employed at age 15 and 50 in 1990–2003.
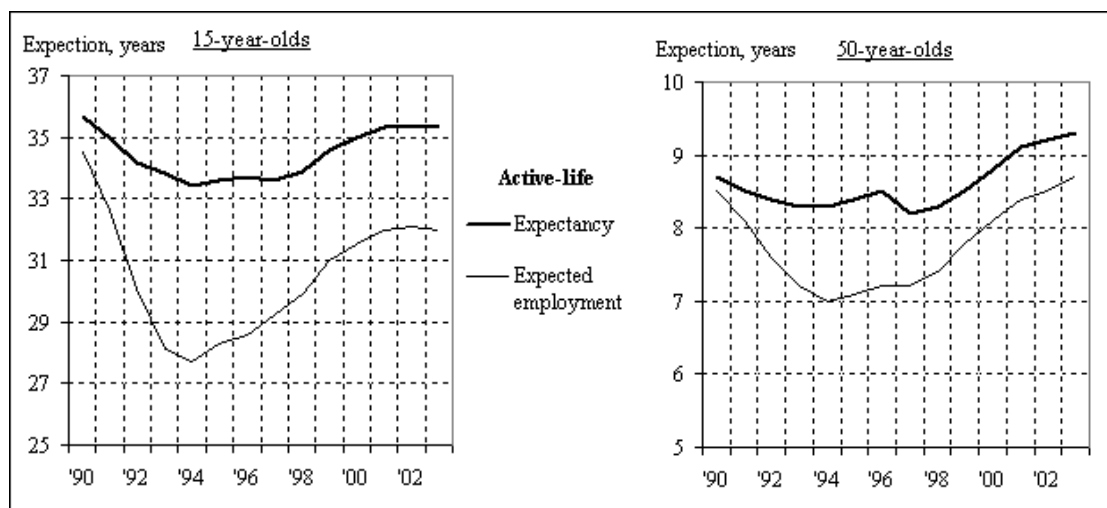
Data: Statistics Finland, life tables and Labour Force Survey.

5 The 2010 employment target assessed with different indicators and compared with Sweden

The Finnish Government Programme has set the target of raising the employment rate to 75% by the end of the next electoral period, i.e. by 2011. During this electoral period, the aim is 100,000 new jobs, which would bring the employment rate up to 70% in 2007. This employment target, originally proposed by the Sailas working group (VNK 2003a) is much higher than the target proposed in the Ministry of Labour's *Työvoima 2020* report (Ministry of Labour, 2003), i.e. that the employment rate should be 71% in 2010. The difference between these two targets is considerable and corresponds to about 140,000 employed in 2010. This difference is explained by the fact that the 75% employment rate set as the target by the Sailas working group is not an optimistic forecast, but a target which is considered essential in order to ensure continued economic growth and to safeguard the services of the welfare state. But is a 75% employment rate realistic as a target in a situation where the structure of the labour supply is changing rapidly, and what measures would have to be taken to attain such a target?

In this section we will present a target calculation which assesses the projected employment growth required for the various one year age groups in order to attain the extremely demanding target of a 75% employment rate (Figure 10). After that, we will examine how much the necessary increase in employment rate per cohort would lengthen people's expected employment, and what the impact of it would be, especially on the older age groups. Then we will compare these life cycle calculations for 2010 with the present situation in Finland and also with the corresponding data for Sweden in 2002. Based on our calculation of "Employment rate target 2010" and comparison with the present situation in Sweden, we will also assess the potential that Finland has of attaining Sweden's present employment rate, considering that in the future, considerably longer working careers will be required in order to attain a high employment rate than a similar target would require with the age structure we have at present.

Figure 10. Employment rates by birth-year cohort in 2002 and our calculation of "Employment rate improvement 2010".
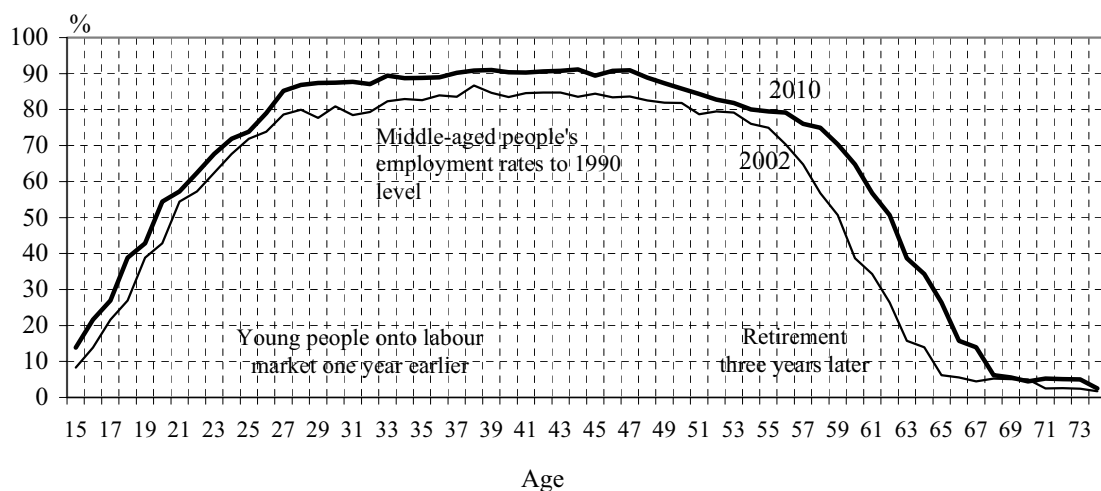
Assumptions for 2010: the employment rates in 2002 per one-year age group from age 50 onward have been transferred 3 years forward, while those for people under age 25 have been moved down the age scale. For the other cohorts, it has been assumed that the employment rate is the same as it was in 1990.

Figure 10 shows the employment rates for each cohort behind our calculation of "Employment rate improvement 2010", which would allow us to get within one percentage point of the 75% employment rate target set for 2011 in 2010. The overall employment rate attained is 73.8 per cent, and in addition, it should be taken into account that the calculation rests on the assumption that the employment rate of people age 65 would also go up from 4.1 per cent to 10.1 per cent. In the calculation, we are assuming first of all that the oldest cohorts will stay at work in 2010 for three years longer than at present. This means that in 2010, employment rates from the age of 50 onwards will be the same as they are now for people three years younger. Our second assumption is that the employment rate for the middle-aged will reach the 1990 level. This, too, is a very demanding target, compared with the corresponding unemployment rate for the relevant cohorts. In 1990, the unemployment rate for the middle-aged was about 1.5-2.5 per cent, i.e. in practice it consisted of frictional unemployment only. Our third assumption is that young people will enter employment one year earlier than they do at present. In the calculations, this is taken into account by moving the employment rates for the birth-year cohorts under the age of 25 down the age-scale by one year.

The employment impact of these assumptions can be divided into two components: the demographic impact and the impact of improved employment rates for individual cohorts. The demographic impact measures the impact of the change in age structure on employment, and is obtained by assuming that the employment rate for each one-year age group remains at the level of the beginning of the period under review, i.e. 2002. If this were the case, the number of the employed would fall due to the ageing of the population and the fall in the number of the middle-aged population by about 74,000 people by 2010. However, the negative employment impact of the increasingly unfavourable age structure can be offset by raising the employment rate. On the basis of the assumptions used for our calculation of "Employment rate improvement 2010", the number of employed would rise by about 230,000 people by 2010, of whom 195,000 would be ageing people in the 55-64 age group.

Most of the growth in the employment rate will come from ageing people and this means that careers must get longer if we are to attain the employment rate target. Translated into employment rate figures and life span perspectives, the assumptions described above would mean that, at 2002 employment rates for individual cohorts, the employment rate of the entire working-age population would fall by 2.5 percentage points by 2010, to 65.2%, while the expected employment at the age of 15 would remain more or less unchanged. (The fall in mortality would, however, extend the expected employment by 0.2 years.)

Table 2 examines the employment rate target converted into expected employment. How much should the time spent working out of total life expectancy, i.e. the expected employment of a 15-year-old, be extended in order to bring us close to the target rate of 75% employment in 2010, and how would the increased employment rate of individual cohorts change the expected employment at age 50. We compare expected employment with the corresponding life expectancy figures and the corresponding indicators for Sweden in 2002.

If the target for improving the employment rate can be reached, Finland would reach Sweden's present employment rate in 2010, if the employment rate is calculated for the population aged 16-64 as is the practice in Sweden. Finland would then have an employ-

Table 2. Employment rate and expected employment in Finland in 2002 compared with the employment rate target for 2010 and Sweden in 2002 (figures for comparison with Sweden are given in brackets)[1].

	Finland 2002	Finland 2010 (target)	Sweden 2002
Life expectancy			
Age 15	63.9	..	..
- men	60.5	61.4	63.1
- women	67.2	67.7	67.5
Age 50	30.7	..	..
- men	28.0	28.9	29.3
- women	33.3	34.0	33.3
Expected employment			
Age 15/16[2]	32.1	36.5[3]	..
- men	32.5	37.5	36.8
- women	31.6	36.0	35.2
Age 50	8.5	10.9	..
- men	8.6	11.5	11.9
- women	8.4	10.7	10.8
Employment rate			
Age 15/16-64	67.7 (68.7)	73.8 (75.0)	74.9
Age 50-64	60.7	68.8	74.3
Age 65-74	4.1	10.1	9.8
Hours worked per employed person during the year	1 686		1 557
Increase in employed in Finland, if hours worked were distributed across employed as in Sweden			
- increase in no. of employed	170 000		
- increase in employment rate, percentage points	5.0		

[1] In Sweden, the employment rate is calculated for the population between the ages 16-64, while Finland uses ages 15-64.

[2] Age 15 in Finland and 16 in Sweden. In practice, this is the same figure.

[3] The Statistics Finland population forecast does not give combined figures for the survival rates of both sexes, so figures up to age 74 have been estimated at KELA.

Data: Statistics Finland, Labour Force Survey and life table for 2002; Statistics Finland, population forecast 2001; Statistics Sweden (SCB).

ment rate of 75% exactly, which matches Sweden's employment rate of 74.9 in 2002. However, in order to do this, Finland would have to expand the lifetime expected employment, i.e. the expected employment of a 15-year-old, by 4.4 years, bringing the total expected employment of both men and women up to 36.5 years. Men's expected employment would grow by 5.0 years to 37.5, while women's would grow by 4.4. years to 36.8. Compared with Sweden, attainment of the employment rate target for 2010 would mean that a Finn would have to work for 0.7-0.8 years longer during his or her life than Swedish people in 2002. Here, too, we are seeing the effect of the ageing of the population. Since the working-age population in Finland will be older on average in 2010 than the Swedish working-age population is at present, people will have to stay on at work for longer than people do in Sweden now to attain the same employment rate as Sweden has at present.

On the basis of the assumptions needed to attain the employment rate target, the working careers of the ageing in Finland would increase nearly to the present level in Sweden. The expected employment of 50-year-old Finnish men would grow by 2.9 years while that of women would grow by 2.3 years. Thus when they reached 50, men would still be expected to work for an average of 11.5 years and women for 10.7 years. The remaining expected employment of both men and women in Finland would still remain slightly shorter than that of 50-year-old Swedish people in 2002.

Table 2 also compares expected employment and changes in it in Finland in 2002 and 2010 (target). The figures for 2010 are based on a Statistics Finland population forecast from 2001, which will be replaced by a new forecast in 2004. It is likely that the fall in mortality will be estimated to be more rapid in the new forecast, which means that estimated life expectancy will also grow. This change in the forecast would also cause the expected employment figures in our tables for the employment rate target for 2010 to increase somewhat, but this effect is considerably smaller than in life expectancy, because the increase in life expectancy at present is due above all to a rapid fall in mortality in the oldest age groups.

It is significant for the increase in working careers that the target situation for 2010 would have Finnish women working for 0.8 years longer than Swedish women do in 2002, even if the corresponding difference in life expectancy is only 0.2 years. This conflict is even more clearly evident in a comparison of Finnish and Swedish men. In 2010, 15-year-old Finnish men would have 1.7 years less life expectancy than their Swedish counterparts in 2002. Despite this, they would be expected to work for 0.7 years longer during their lifespan than Swedish men do at present.

In Table 3, we further examine how the expected employment of a 15-year-old should be increased on average at the different stages of life in order to attain the necessary increase in the number of years worked. Or, to put it another way, what should the various cohorts contribute to the lifelong increase in years worked? The reference year used in the table is 2003, when we need to work for 4.5 years longer to reach the employment target. The table shows that young Finns would need to account for 0.8 years of the lifelong increase in years worked, people age 50 should work 2.1 years longer and the rest of the increase (a total of 1.7 years) would rest on the assumption that people between the age of 25 and 49 can increase the number of years worked. The table also shows that according to our calculation of "Employment rate target 2010", the ageing will have to carry an increasing proportion of the number of years worked. In 1994-2003, years worked at the age of over 50 accounted for a total of 1.6 years of the 4.3 year increase in the total employment expectancy. All in all, the input of different age groups into the total employment expectancy is also a sign of considerable 'condensation' of employment during the lifespan of a person, which would at least in part represent an opposite of the trend of greater flexibility in different life stages and employment.

In fact, one of the key questions in assessing the employment rate target is whether it is possible to extend the years worked by Finnish people within the present model of full-time salaried employment and with a minimum of absenteeism. Here, too, Sweden offers a useful point of comparison. In Sweden, 21.5% of the employed were doing part-time work in 2002, compared with only 12.8% in Finland. Similarly, the proportion of employed people actually present at their working places in Sweden was 82.9%, compared

Table 3. Input of the various cohorts into the expected employment of 15-year-olds 1994–2010 and changes 1994–2003 and 2003–2010.

| | Cohort effect on expected employment of a 15-year-old, years | | | | Impact on expected growth | |
	1994	1997	2003	2010	1994-2003	2003-2010
15-24	2.8	3.4	3.8	4.6	1.0	0.8
25-34	6.9	7.2	7.7	8.4	0.8	0.7
35-49	11.4	11.8	12.2	13.2	0.8	1.0
50-64	6.4	6.6	7.9	9.6	1.5	1.7
65-74	0.3	0.3	0.4	0.8	0.1	0.4
Total	27.7	29.2	32.0	36.5	4.3	4.5

Data: Statistics Finland, life tables and Labour Force Survey.

with 85.4% in Finland. Together, these figures show that the lifetime employment of Swedish people contains a lot more 'space' than that of Finns. This is bound to help people cope better with their work and prevents early exits from the labour force. On the macro level, this is one of the cornerstones of the Swedish welfare state, the maximization of salaried employment. In Sweden, work is distributed more evenly across the population compared with Finland, which results in higher total employment. The structures of social protection support this basic model by favouring temporary absences and part-time benefits. This has been evident above all in fluctuation of sick leave according to economic cycles and a high proportion of part-time sickness and disability benefits (see Hytti 2003b).

The bottom section of Table 2 is an assessment of how much the difference described above between the 'employment models' of Sweden and Finland impacted on the differences in employment rates between the two countries in 2002. The purpose of this assessment is to gain some insight into whether the target for raising Finland's employment rate is realistic within the present model of full-time salaried employment and with a minimum of absenteeism. In the table, work input adjusted to eliminate the effects of part-time work and absences is illustrated by the number of hours worked per employed person during a year. In 2002, employed people in Finland did an average of 1,686 hours of salaried employment during the year, compared with 1,557 hours in Sweden. If the total of all hours worked in Finland were divided by the average number of hours worked by an employed person in Sweden, this would produce the number of employed people in Finland, assuming that the salaried employment were distributed in proportion to as extensive a group of employees as in Sweden. In 2002, this "redistribution of work" would have meant an increase of 170,000 employed people and a 5 percentage point increase in the employment rate, assuming that growth focused only on the 15-64-year-olds.

Our example calculation of the "redistribution of work" indicates that improving the employment rate and increasing the length of working careers in Finland would require a transition towards the Swedish model, at least to some extent. In this, a key feature would be to step up the volume of voluntary part-time work. Part-time work is still relatively rare in Finland. If, for instance, part-time work were increased by 2010 by 100,000 – which would represent more than a third of the increase in employment demanded by a 75% employment rate – the percentage of part-time work would still be lower in Finland than the EU average. In fact, more part-time work for the parents of small children would be essential and would also help coordinate family life and work.

It seems unlikely that part-time work could be boosted to any significant extent without also introducing combinations of temporary absences from work and part-time benefits. A part-time daily sickness allowance is being planned at present in Finland, and it could ideally explore solutions which help disabled people continue to work, in ways which would benefit both employees and employers compared with the alternative of people leaving the labour market for good. Similarly, the obstacles to introducing part-time parental leave and care leave and extending the use of coordinated unemployment allowances should be investigated from the point of view of both social protection and the labour market.

6 Conclusions

Over the past decades, the supply and demand of labour have been controlled in many different ways in Finland, depending on the current situation at the time. Employment policy and social policy incentives have been used in an effort to respond to the challenges of population ageing, economic structural change and economic fluctuation. This has also had an impact on total work input and how it is distributed across people's lifespan. When there was plenty of labour available due to a favourable population structure, it was possible to create ways for the ageing and least productive section of the labour force to retire on disability pensions, individual early retirement pensions and other forms of early retirement after 'completing their services' to society. This policy of minimizing the ageing labour force continued until the early 1990s.

Labour market inflow and outflow have also been flexible in Finland due to economic cycles, particularly for marginal groups on the labour market such as the ageing and the very young. During the recession, the number of students grew rapidly while large numbers of the ageing were excluded from the labour market, either into unemployment or early retirement. In the present economic slowdown, studies are again becoming more attractive, but over many years now, the rate at which the ageing leave the labour market has been slowing down.

Improved employment among the ageing is a positive signal at a time when the ramifications of labour market policy are once again changing as the population ages. Our cohort studies show that the big post-war generations may become a great divide on the labour market, which will significantly change the labour market position of the ageing. The post-war generations are clearly more likely to stay on the labour market than previous generations were at the same age, something which can be expected to improve employment rates throughout the decade towards a Nordic level. According to our estimates, nothing less than the Swedish level will do, if we are to reach the exceedingly demanding target of a 75% employment rate.

A comparison of employment trends among the ageing in the EU showed that the employment rates and activity rates for the ageing have risen faster in Finland than in any other Member State, both since 1997 and during the past few years after the targets of the Stockholm European Council were set. However, the indicator of average exit age from the labour force used by the Commission gives a conflicting representation of this trend, as it shows a considerable fall in the average exit age in Finland during the past few years. According to our analyses, the calculation method used by the Commission is unsuitable

for the Finnish labour market due to a number of content-related and technical measuring problems, nor is it suited to a comparison of EU Member States. In fact, one of the incentives for this article was to develop an indicator for monitoring the European Employment Strategy, too, which would allow monitoring of changes in working careers and active-life expectancy in the Member States and enable us to analyse the impact of these changes on trends in the labour supply. The indicator based on a lifespan approach that we propose would be practical and could also be applied for international comparisons[2].

Although the ageing are clearly the key group when it comes to improving the employment rate, there is a danger that we might succumb to an excessively narrow perspective if we monitor only the average exit age from the labour force. The Finnish Government's special intersectoral employment policy programme strives to optimize labour resources by focusing measures on the entire working-age population in terms of education and training systems, the quality of working life, work and leisure time and pension systems. This will focus monitoring on the entire life cycle, too. However, the foremost reason why we need a life cycle perspective in monitoring employment is that we must be able to distinguish between the impact of the ageing of the population and the impact of longer working careers.

The life table based indicator that we propose produced the result that the expected employment of a Finnish 15-year-old is 32.0 years at present, while that of a 50-year-old is 8.7 years. The expected employment of 15-year-olds had increased by 4.3 years since the deepest point of the recession, while that of a 50-year-old had increased by 1.7 years. The expected employment of a 15-year-old shows the number of years of employment during an entire lifespan, assuming conditions otherwise remain the same as in the year studied. Equal parts of the increase in this active-life expectancy in 1994-2003 derived from longer working careers among people aged 25-49 and people aged over 50. In order to attain the target employment rate, the emphasis needs to be moved more toward the ageing. Almost half (2.1 years) of the required increase of 4.5 years worked would derive from longer working careers among the ageing.

Our first comparisons using the new indicator between Finland and Sweden, the country with the best results in the EU in employment among the ageing, gave us some strong indications that we can hardly expect to achieve the longer working careers called for by the Government Programme with our present employment model. It would appear that in order to counterbalance longer employment during people's lifespans, we also need certain institutional reforms benefiting both employees and employers, which would make it possible to take temporary leave of absence, part-time work and sabbaticals, but which would also encourage people to stay on and work longer in the long run.

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[2] In international comparisons, it would also be important to analyse the impact of different mortality levels on the expected periods of belonging to the labour force and expected employment of people who have reached a certain age. Here, a comparison between Swedish and Finnish men gives a kind of upper limit to the differences between EU Member States, because in 2002, newborn boys in Sweden had the highest life expectancy in the EU while the corresponding figure for Finland was the third lowest in the EU. The difference between the two countries in the expected employment of a male aged 15 was a total of 4.3 years, of which 0.8 years was due to the difference in mortality. For women, the corresponding effect was 0.1 years of a total difference of 3.6 years. Taking mortality into account is an integral part of a life cycle perspective, but if necessary, indicators standardized to a certain mortality level (EU15) could be calculated for international comparisons alongside the original indicators for each country. The same applies to comparisons over time within individual countries.

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Appendix table 1. Calculated life expectancy as part of the labour force and outside the labour force according to the 2002 life table and labour force survey, for both men and women.

Age	Number alive at age x (l_x)	Years lived in the age interval x (L_x)	Years lived at age x and beyond (T_x)	Life expect-ancy (e_x)	Activity rate (a_x)	Years in labour force at age x (^aL_x)	Years in labour force at age x and beyond (^aT_x)	Expected period of belonging to labour force (^ae_x)	Expected period outside the labour force (^re_x)
0	100 000	99 607	7 826 316	78.3	0.000	0	3 525 581	35.3	43.0
15	99 513	99 505	6 332 328	63.6	0.151	15 002	3 525 581	35.4	28.2
16	99 496	99 484	6 232 823	62.6	0.231	22 934	3 510 579	35.3	27.4
17	99 471	99 449	6 133 339	61.7	0.314	31 215	3 487 645	35.1	26.6
18	99 426	99 388	6 033 890	60.7	0.395	39 263	3 456 430	34.8	25.9
19	99 349	99 317	5 934 502	59.7	0.520	51 633	3 417 167	34.4	25.3
20	99 285	99 252	5 835 185	58.8	0.560	55 545	3 365 535	33.9	24.9
21	99 219	99 183	5 735 953	57.8	0.653	64 757	3 309 990	33.4	24.5
22	99 147	99 104	5 636 750	56.9	0.680	67 344	3 245 233	32.7	24.1
23	99 060	99 023	5 537 646	55.9	0.719	71 168	3 177 889	32.1	23.8
24	98 986	98 951	5 438 623	54.9	0.767	75 899	3 106 721	31.4	23.6
25	98 916	98 880	5 339 672	54.0	0.815	80 614	3 030 822	30.6	23.3
26	98 843	98 811	5 240 792	53.0	0.822	81 235	2 950 208	29.8	23.2
27	98 779	98 755	5 141 981	52.1	0.863	85 186	2 868 974	29.0	23.0
28	98 731	98 698	5 043 226	51.1	0.886	87 450	2 783 788	28.2	22.9
29	98 664	98 625	4 944 528	50.1	0.870	85 761	2 696 338	27.3	22.8
30	98 586	98 542	4 845 903	49.2	0.878	86 509	2 610 577	26.5	22.7
31	98 498	98 447	4 747 361	48.2	0.862	84 857	2 524 069	25.6	22.6
32	98 396	98 352	4 648 914	47.2	0.869	85 428	2 439 211	24.8	22.5
33	98 308	98 260	4 550 562	46.3	0.881	86 546	2 353 784	23.9	22.3
34	98 212	98 160	4 452 302	45.3	0.886	86 953	2 267 238	23.1	22.2
35	98 108	98 051	4 354 142	44.4	0.891	87 359	2 180 284	22.2	22.2
36	97 994	97 927	4 256 091	43.4	0.892	87 361	2 092 925	21.4	22.1
37	97 859	97 795	4 158 164	42.5	0.895	87 543	2 005 564	20.5	22.0
38	97 731	97 667	4 060 369	41.5	0.914	89 314	1 918 021	19.6	21.9
39	97 602	97 530	3 962 702	40.6	0.899	87 712	1 828 707	18.7	21.9
40	97 458	97 382	3 865 172	39.7	0.898	87 485	1 740 994	17.9	21.8
41	97 305	97 216	3 767 790	38.7	0.904	87 897	1 653 509	17.0	21.7
42	97 127	97 023	3 670 574	37.8	0.914	88 688	1 565 612	16.1	21.7
43	96 918	96 816	3 573 551	36.9	0.903	87 389	1 476 923	15.2	21.6
44	96 713	96 596	3 476 735	35.9	0.896	86 555	1 389 534	14.4	21.6
45	96 479	96 354	3 380 139	35.0	0.898	86 561	1 302 979	13.5	21.5
46	96 228	96 092	3 283 785	34.1	0.897	86 151	1 216 418	12.6	21.5
47	95 955	95 812	3 187 693	33.2	0.892	85 427	1 130 266	11.8	21.4
48	95 669	95 513	3 091 881	32.3	0.880	84 051	1 044 839	10.9	21.4
49	95 357	95 179	2 996 368	31.4	0.889	84 604	960 788	10.1	21.3

Age	Number alive at age x (l_x)	Years lived in the age interval x (L_x)	Years lived at age x and beyond (T_x)	Life expect-ancy (e_x)	Activity rate (a_x)	Years in labour force at age x (^aL_x)	Years in labour force at age x and beyond (^aT_x)	Expected period of belonging to labour force (^ae_x)	Expected period outside the labour force (^re_x)
50	95 000	94 827	2 901 189	30.5	0.879	83 340	876 184	9.2	21.3
51	94 653	94 446	2 806 362	29.6	0.882	83 321	792 844	8.4	21.3
52	94 239	94 011	2 711 916	28.8	0.856	80 439	709 523	7.5	21.2
53	93 782	93 549	2 617 905	27.9	0.854	79 922	629 084	6.7	21.2
54	93 315	93 059	2 524 356	27.1	0.816	75 964	549 162	5.9	21.2
55	92 802	92 556	2 431 297	26.2	0.809	74 852	473 197	5.1	21.1
56	92 309	92 001	2 338 741	25.3	0.764	70 298	398 346	4.3	21.0
57	91 693	91 412	2 246 740	24.5	0.723	66 061	328 048	3.6	20.9
58	91 130	90 780	2 155 328	23.7	0.639	57 964	261 987	2.9	20.8
59	90 429	90 093	2 064 548	22.8	0.571	51 409	204 022	2.3	20.6
60	89 756	89 387	1 974 455	22.0	0.418	37 325	152 613	1.7	20.3
61	89 018	88 661	1 885 068	21.2	0.357	31 676	115 289	1.3	19.9
62	88 303	87 854	1 796 407	20.3	0.277	24 331	83 613	0.9	19.4
63	87 405	86 921	1 708 553	19.5	0.163	14 181	59 282	0.7	18.9
64	86 437	85 951	1 621 632	18.8	0.145	12 440	45 101	0.5	18.2
65	85 464	84 930	1 535 681	18.0	0.062	5 243	32 660	0.4	17.6
66	84 395	83 843	1 450 751	17.2	0.055	4 647	27 418	0.3	16.9
67	83 290	82 673	1 366 908	16.4	0.045	3 702	22 771	0.3	16.1
68	82 055	81 365	1 284 235	15.7	0.052	4 263	19 069	0.2	15.4
69	80 674	79 904	1 202 870	14.9	0.051	4 079	14 806	0.2	14.7
70	79 134	78 312	1 122 966	14.2	0.050	3 924	10 727	0.1	14.1
71	77 490	76 585	1 044 654	13.5	0.025	1 889	6 803	0.1	13.4
72	75 680	74 736	968 069	12.8	0.026	1 953	4 914	0.1	12.7
73	73 792	72 721	893 333	12.1	0.024	1 735	2 962	0.0	12.1
74	71 650	70 525	820 612	11.5	0.017	1 227	1 227	0.0	11.4
75	69 399	68 174	750 087	10.8	0.000	0	0	0.0	10.8

l_x = survival figures from 2002 life tables

a_x = activity rate

$L_x = (l_x + l_{x+1})/2$

$^aL_x = a_x * L_x$

$$T_x = \sum_{i=x}^{\infty} L_i$$

$$^aT_x = \sum_{i=x}^{74} {}^aL_i$$

$e_x = T_x/l_x$

$^ae_x = {}^aT_x/l_x$

$^re_x = ex - {}^ae_x$

Data: Statistics Finland, Labour Force Survey and life tables 2002.