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LABOUR FORCE PARTICIPATION SCENARIOS FOR 27 EUROPEAN COUNTRIES, 2002-2052

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Abstract: This paper presents a forecast of labour force participation developments in 27 selected European countries in the period 2002-2052, prepared to serve as an input for the population and labour force forecasts and simulations prepared for Europe. The study contains a theoretical overview of the main determinants of labour force participation, as well as the most important models of labour supply. Presentation of the historical labour force participation patters for the European countries under study allows subsequently for preparation of forecast assumptions and eventually for obtaining the results of the projections. The paper is accompanied by an Annex with tables and graphs illustrating labour force participation patterns and the overall rates from the past, as well as forecasted for the period 2002-2052.

Keywords: labour force, participation, forecasts, Europe

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1. Introduction

In the times of rapid change in demographic tendencies, an important question arises about the institutions that rely on the population structure. Can they still operate in the transformed setting? Two obvious examples of institutions for which this question remains unanswered are pension and social security systems. Longevity combined with a drastic fall of fertility resulted in population ageing – an increase in the share of older age groups in total population. This, in turn, changed the proportions of people supporting and supported by the systems.

Since it is the population of those who work that supports the social security systems, total labour force participation ratio can be a rough estimate of their share. This paper discuses past developments of labour force participation rates (since 1985) and, with moderate assumptions, presents their possible future patterns for 27 European countries (Norway, Switzerland, Romania, Bulgaria and EU25 without Malta and Cyprus). It deals with people at the age of 15 years or older (thus, in the working age[1]), regarded as potential labour force. Five-year age groups (15-19, 20-24, …) are analysed, the last one consisting of people aged 75 and more. Although it is obvious that at certain age people cease to be able to work, the common convention is to keep the last age group open. This paper conforms to it. The projection covers years 2002-2052.

It is important to note that the developments of the (potential) labour force can be directly determined by two kinds of factors only – demographic and economic. Demographic ones take effect trough the size and age/sex structures of the total population which form the size and structure of the potential labour force – group of people in the working age. Economic factors impact decisions of people concerning their participation in the labour force and, in consequence, the labour force participation rates. The other factors can only influence labour force indirectly, with two mentioned ones as intermediaries.

This paper analyses the dynamics of the labour force participation rates. In Section 2 basic definitions used in the paper are provided. In subsequent three sections (3, 4 and 5) selected concepts and theories governing the labour supply and past trends in the labour force participation are discussed. The figures presenting these trends are contained in part A.1 of the Annex. Sections 3, 4 and 5 are theoretical and descriptive; they form a departure point for formulation of assumptions for projection of the labour force participation (Section 6). The projection for years 2002-2052 is presented in Section 7, as well as in part A.2 of the Annex. Section 8 summarises the paper emphasising the projection results.

[1] The broad definition of the working age is used here, encompassing people at the age of 15 years and older, but not limited to those below the retirement age. This is done in order to be compatible with labour market statistics and to stress that people can work also after they have reached the retirement age.

2. Terminology

The terminology used throughout this paper is as follows.

Persons in the working age (15 years old or above) can be either *economically active* or *economically inactive.* Any person that is *economically active* can either be *employed* or *unemployed.* If a person is neither employed nor unemployed, they are *economically inactive.*

Person that is *employed* worked as employee or self-employed, at least one hour the in the reference week for wage or a salary, or for profit or family gain. Such person could in particular be temporarily absent because of sickness, accident, leave, vacation, maternity or paternity leave, be a retiree with a pension, full time student or paid or unpaid family worker. However, if the person who worked was engaged only in their own housework, did social work or was subject to compulsory schooling, they would be excluded from the group of employed.

A person is *unemployed* if (s)he did not work as an employee or a self employed more then one hour in the reference week, was actively looking for a job (that is registered in private of public employment agency, placed or answered newspaper advertisements, directly contacted with employers etc. in the four weeks preceding the survey) and was available for work. Such person might in particular be a full- or part-time student. The persons who did not actively look for a job, or were seasonal workers awaiting seasonal employment were excluded from the group of unemployed.

Labour force participation rate is the share that *economically active* people constitute in the relevant age group. Throughout this paper labour force participation will also be referred to as labour participation or participation.

It is important to realize that the above definitions are not internationally accepted and adapted in the research on the labour market. They are rather a common part of the definitions of the countries under study. In practice, definitions used by the countries differ in details, what makes the results incomparable and may bias conclusions of cross country comparisons. In this paper, the differences in definitions are going to be neglected and the data treated as comparable, bearing in mind the possible limitations of such approach.

3. Factors of labour force participation – theoretical and empirical considerations

There is a number of obvious factors, of both economic and non-economic nature, that can be associated with the growth or decline of the labour force participation rates. Some of them are listed below. They are not exhausting the list of aspects that play a part in the formation of the labour supply. However, they are the most important ones that will enable the analysis of the past trends of participation, and formulation of the projection assumptions.

3.1. Business cycle

The good condition of the economy is the most often quoted economic factor that facilitates participation. This is because the time of economic boom is also the time of high (and often further growing) wages and relatively low unemployment, which may attract inactive persons to the market. This effect is additionally strengthened by more elastic conditions of work offered. Employers, in the face of limited choice of potential workers (or even labour shortages in some sectors), are more willing to accept conditions more favourable to workers, e.g. the job on a part time basis. The level of wages, high probability of finding a job and elastic solutions concerning employment encourage inactive persons to labour participation, as the alternative cost of non-market activities (the loss of potential earnings) becomes too high. The group of persons attracted this way is comprised mainly of students, retirees, childrearing women as well as discouraged workers, who looked for the job but did not find it and gave up.

Analogically, in the times of economic crises, toughening conditions and often falling wages and salaries push a part of the group of active out of the labour market. This tendency is additionally strengthened by employers, who, in such a case, can choose from many candidates due to growing unemployment and need not accept flexibility in employment. Such unfavourable circumstances effectively discourage potential workers. Contrary to the market entrances, the market leaving may turn out to be permanent, especially for persons from the last working age groups. Older people (55+), in the face of difficulties with employment, find earlier retirement a convenient solution. This is particularly popular action in the countries with social security and pension systems which do not penalize too much leaving the market earlier with sudden drop in income or reduced level of benefits (detailed analysis can be found in Blondal, Scarpetta 1999).

3.2. Social security

Should it not be for social security, which provides non-market income, leaving the market permanently would be impossible. In general, conditions created by social security are very important factors influencing decisions concerning labour participation. By certain incentives and disincentives they can either encourage or discourage people to economic activity. Institutions of this kind exert the most effect on the decisions of people in the oldest productive age groups, workers with the lowest skills and women.

Social and disability benefits are the examples of such institutions. If they are high enough and accompanied by lenient eligibility rules they can be serious competition for employment related income. This applies especially to the people with little education and skills and from oldest age groups due to their low earnings and unstable employment situation. These people are likely to be hired only for the low paid jobs, and vulnerable to dismissals connected to the business cycle. Hence, system of benefits which is generous in comparison to potential individual earnings, can discourage people from work and make them claim, often groundlessly, eligibility. In general, protection in the cases of real health problems, disability or inability to earn any income is socially desirable. Practice shows, however, that the number of cases of "disability" and "health problems" proved to be over-responsive to changes of benefits from social security and pension system (see for example Coleman 2000: 18).

3.3. Pension systems

Pension systems are a kind of social security but with the target group narrowed by age. They are designed to provide income to the older people.

The elderly people (55+) are a special group as far as the need of social protection is concerned. It follows from their difficult situation on the labour market and/or inability to work in many cases. Unfortunately only inability to work can be neutralized by various forms of non-employment income provided by social security. Their difficulties in finding employment have only recently been recognised. Certain steps to improve the situation of the older workers have been undertaken so far. The discussion of current and desirable future developments of labour market institutions protecting older workers is discussed by Palomba and Kotowska (2003).

The relatively weak position of the older workers on the labour market stems from their age related declining mobility (both spatial and occupational), health problems, often obsolete skills and difficulty with keeping up with the requirements of technologically progressing labour market. This, being a cause of frequently negative employer's attitude towards older workers, results in relatively low employment and high unemployment (especially long-term)

in this group. Poor employment possibilities and high unemployment do not necessarily mean low activity rates. Empirical studies show, however, that these factors do have significant influence on decisions on labour market leave, especially into earlier retirement when possible (e.g. Blondal, Scarpetta 1999).

An earlier retirement is a common practice. According to Coleman's simple calculations based on the unweighted distributions at retirement age of members of 26 occupational pension schemes in 1998 (Coleman 2000: 24; after IDS 1999, Table 2) the mean real retirement age for man in the UK in 1998 was 56.7 years, with median age 54.4 (more then half of man in 1998 was retired over ten years before the 'official' retirement age). As the results of the calculation might have been biased due to characteristics of the sample, another calculation for total population of Great Britain was made. Based on the distribution of male participation rates for 1998, an estimate of mean age of retirement was about 57.8 years. The example of the UK is not exceptional. Social security and pension systems in many countries are generous enough to create two types of incentives which potential workers are exposed to. Firstly, they do not award workers for additional years of labour activity (in the extreme cases additional years of work can be penalized), and secondly they offer various benefits that are competitive with potential earnings from market work (for comprehensive study on this see Blondal and Scarpetta 1997; 1999).

The same incentives influence people's decisions on further work after they have achieved standard retirement age. In theory, older people having achieved retirement age might combine receiving pension with work (possibly special forms of work, i.e. part time). In practice, however, disincentives coming from rules or regulations effectively restrict such actions (e.g. means testing of pension benefits after the standard age of retirement, conditioning entitlements on complete withdrawal from work; Blondal and Scarpetta 1999: 16). As a result, labour participation rates for age groups above standard retirement age are very low (see part A.1 of the Annex).

In the times of rising life expectancy and ever smaller cohorts entering labour market social security systems, relying heavily on progressive population structure, turn out to be difficult or even impossible to support. Hence, both early retirement and system misuse become too expensive. At the moment there is a tendency among the governments to reduce both possibilities. In consequence, the systems are either modified or replaced so as to provide the incentives for longer rather then shorter years of labour activity. It can be achieved by penalizing early retirement with the low rate of substitution (the ratio of benefits after retirement to the last achievable wage) and by associating the level of benefits with the years of employment. In such a case earlier retirement becomes costly, as some potential part of the benefit is foregone due to reduced years of working life.

In some countries, especially transition countries, retirement benefits have been an important mean to alleviate negative consequences of structural changes of the labour market. In most

post communist countries labour markets were strongly regulated before the transition and certain phenomena and institutions did not explicitly exist. The unemployment provides a blatant example. Propaganda slogan proclaimed: “job for everyone”, and responsible authorities ensured it was theoretically true. In practice unemployment under such regimes existed, but took hidden forms; over-employment was the most common one. The beginning of the transformation process brought about a flow of structural changes which also involved the group lay offs. As a result, thousands of people found themselves in the new, frustrating position of being unemployed. The situation has been difficult for many reasons. Lack of experience of the governments in dealing with such phenomena, not sufficient pace of creation new jobs that might absorb freed labour force in the transforming economy and low mobility of dismissed workers have been most important. Years of being taken care of did not encourage people in productive age (potential workers) to constant training, upgrading skills or changing professions. It did not prepare them well to compete for jobs in the new setting either. The situation was difficult for older workers in particular, as with growing age, the chances that they could find their place in the new labour market went down. Therefore, a way to ease tense social situation was to let them join earlier the social pension system. This may, at least partially, explain relatively low participation rates in the oldest age groups in transition countries.

3.4. Other institutions

Apart from social security, there are many other institutions that strongly influence labour supply. Child care facilities can be an example. Their development and easy accessibility (also in terms of costs) makes combining motherhood and professional carrier simpler, and therefore facilitates participation. From their nature, such institutions influence economic activity of women to the greatest extent, especially the youngest and middle age groups. Good illustrations of their performance can be found among Scandinavian countries. Despite relatively high fertility rates in these countries, levels of female labour participation there are among the highest in Europe in all age groups. Potential dampening effect of these facilities can be observed in Central and Eastern Europe. Sudden liquidation of the institutions in post-socialist countries in the process of transformation may have been an important cause of a rapid drop in female participation rates of age groups 20-34 in these countries (Polish case is discussed by Kocot-Górecka 2004).

Social habits are another institution that should not be neglected (Vlasblom, Nekkers 2001, for extensive study see Vendrik 1993). The influence of habits and attitudes as well as institutional conditions that disable or enforce certain behaviours of individuals can even be stronger than other factors in certain societies. It may be a matter of a social custom that the young starting their careers on the labour market, do it before graduation. Such custom results in higher participation rates in the age groups 15-19 and 20-24. In the other countries the

young are more often supported by parents until they have completed their studies, and find a job (which produces low participation rates for youngest groups).

In some countries social systems have loopholes which enable acquiring social benefits, like earlier retirement or disability benefits, to people who are not eligible. In such a case social attitudes that encourage to do so can result in lower participation rates than in the countries where either the system is designed better or such behaviour would be socially disapproved.

3.5. Education

A factor that can severely depress participation is education. It is particularly effective in the youngest age groups (15-24), although after its significance has grown in the last decades, it applies to all age groups. Economic and technological developments and changes on the labour market made education and additional skills profitable, as additional years of schooling or other training could bring more income (net of costs) than an additional year of work without it.

As stated above in the times of hard economic conditions in the labour market, enrolment into educational institutions often precludes any employment so people extending their education are forced to be off the market.

3.6. Economic activity of women

For the last over thirty years there has been a fundamental change in labour participation of women (accompanied by change in life patterns of individuals). In this section, the widely understood background of the change will be drawn. The section should name the main factors of the change and explain the role they played or may play.

In the case of women, the decision to work or not is closely related with decision concerning motherhood. These two decisions influence each other and both fertility and labour activity are the results.

Many economic theories and models of fertility tries to provide arguments to support the thesis that it is the labour market situation that have been responsible for significant decline in fertility for the recent decades. Most of them considers the fact of having children in terms of related benefits and costs (with Becker being the pioneer of such approach – Becker 1960; 1981). Satisfaction and emotional gains as well as possibility of the future pecuniary profits were the main benefits. The direct expenses and time devoted to bearing and than rearing

children, including opportunity cost of time devoted to the latter, constituted the costs[2]. In such a framework fall in gains from having children or shift up in their costs resulted in decline in demand for children. Hence, the development of social institution that reduced the need of considering children as potential future source of income could have been the factor that substantially depressed fertility in the developed countries over the last thirty years (Kocot-Górecka 2004: 9-12; after Leibenstein 1957**;** Becker 1960). The rising cost of women's time, raising also cost of children, added up to this effect.

The cost of women's time has risen due to the alternative market opportunities that opened up to women relatively recently. These opportunities and improvement of women's market position relied upon the increase in number of jobs in traditional female-dominated occupations, opening up of wide range of the so far male-dominated occupations and changed legal settings. The new laws were supposed to protect women against discriminatory practices of employers and provide them with better social protection. Altogether, these improvements can attract women to the professional careers and therefore may be helpful in explaining both the decline in fertility and the rapid growth in participation rates in almost all age groups in all countries under study.

It is worth noting that both changes in fertility and economic activity of women were closely connected with change in social attitudes towards working woman, especially married or/and with children. According to Kaufman and Hotchkiss (2003) probably the greatest transition in social attitudes concerning married women and work took place during the 1970s. Attitudes continued to change in 1980s. They agree, however, that it is difficult to decide whether the change is social attitudes is a cause or a consequence of a movement of women into the work force, and quote studies that support both sides (Kaufman, Hotchkiss 2003: 147). The processes discussed above were simultaneous and, again, closely connected with the demographic changes that R. Lesthaeghe and D. J. van de Kaa (1986) called a 'second demographic transition', related mainly to the change of values and the family patterns. As before, however, it is difficult to establish the role of the second demographic transition in the above changes, or the other way round.

From the other perspective, women's economic activity can be considered as the result of their fertility decisions. The trace of such approach can be found in studies explaining the most frequent participation patterns[3] by the decisions concerning motherhood.

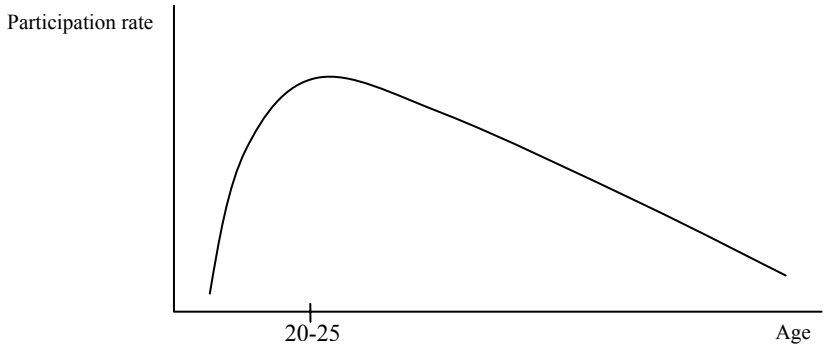
In the literature up till 1990s three country specific basic patterns of women's participation were described (Kocot-Górecka 2004: 58-59). The first pattern is characterized by relatively high participation in age group 20-25, and the systematic decline in the older age groups (a

[2] For biological and cultural reasons most of the opportunity cost of time is related to women.

[3] Pattern of participation is referred to as a distribution of participation rates by age groups. It is often used in reference to a group with specific characteristic(s), like sex, education, dwelling place, etc.

single-peaked curve; Figure 3.1). According to the theory explaining women's participation by fertility plans, it was typical for countries in which women back away from the labour market just after marriage or bearing a first child (e.g. Ireland, Spain and Luxembourg).

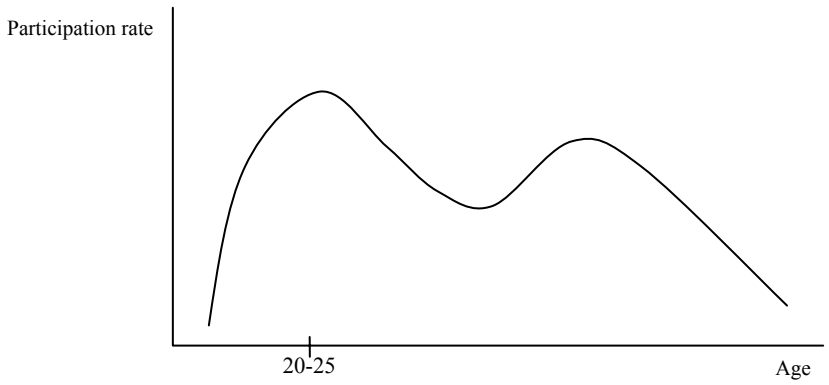
Figure 3.1 Single-peaked pattern of women's participation



Source: Kocot-Górecka (2004): 58

The characteristic settle within the second pattern (so called bimodal curve; Figure 3.2) is caused by women who take brake from market work in the age 25-40 to bear and rear children and come back to economic activity when the children reach the schooling age. Such a type of activity was for example typical of the Netherlands and the Great Britain.

Figure 3.2 Bimodal pattern of women's participation



Source: Kocot-Górecka (2004): 58

The last pattern was constituted by women, who combined their professional careers with motherhood with practically no break in the economic activity (inverted U-shaped pattern; see

Figure 3.3). It was typical to countries with high economic activity of women, like Denmark, Sweden or Poland. Such pattern is also typical for men, with a difference in levels (participation rates for men are higher in all or almost all age groups) and in the determinants (decisions concerning fertility that exert strong influence on the women's participation patterns do not directly apply to men).

Figure 3.3 Inverted U-shaped pattern of women's participation

Source: Kocot-Górecka (2004): 59

Recent years were marked with significant growth in economic activity of women. In most of countries under study, no matter realized pattern, the participation rates in all age groups went up. It resulted in lifting up and deformation of the countries' patterns (see below).

Fertility influences women's participation rates also trough their position on the labour market. Since there is a positive probability that a woman, especially young and married, will have a child (from the perspective of the employer, will disappear from work for a couple of months) and will be more likely to take a time off when back, the employers are less willing to employ such a female worker than, for example, a male one. Therefore, women statistically have lower chance to be employed, and if at all they get a job then for a lower wage then men. Such conditions on the demand side of the labour market negatively impact supply decisions of women discouraging them from the market. This especially concerns women with poor qualifications and no experience. On the market they can expect only earnings on the basic level in the not too stable jobs in the secondary labour market. The analogue effect of discouragement can be seen in the labour decisions of men with very poor skills, whose work is worth little for the employers. In such a case, apparently, it has nothing to do with fertility. In both cases it is due to poor skills; for women situation is additionally aggravated by the possibility of having children.

3.7. Unemployment

Similar effect (the discouragement) can be produced by unemployment. If a person looks for a job, and cannot find one for a couple of months, they may come to a conclusion that for some reason they are not capable for it or cease to believe it is possible to find one, and give up. Such discouraged persons withdraw from the labour market decreasing the overall labour supply. The effect can be significant in the countries with high unemployment, a big fraction of which is long lasting.

3.8. Poverty

It may also happen in a poor and less developed country that all the factors above can have little effect on labour supply decisions of individuals. If people have no non-market income, they may be forced to work (or look for a job) to support themselves and the families. This effect can be observed in some countries of Easter and Central Europe (e.g. Romania).

Some of the commonly known factors of labour supply decisions and mechanics of the described processes were closely examined and incorporated in the economic models that aim at explaining changes in participation rates due to shifts of different variables. In the following section selected models are discussed.

4. Models of labour supply

Each of the models presents and focuses on some isolated reasons of change in activity status. The reasons, however, are not independent and in many cases they are inseparable. Therefore, to get an overall view of the subject it is necessary to learn all major factors and processes that can influence labour supply and understand their interactions and interdependencies.

4.1. Labour-leisure approach

The simplest models treat the participation decision as a choice between labour and leisure (leisure is a term comprising all possible non-market activities – it does not matter whether it is schooling, housework or pure leisure; Killingsworth, 1983). With a given real wage rate, the level of non labour income, discretionary number of hours (say per week) to devote to work or leisure and some assumed preference between the two activities, they consider marginal/additional utility gains/losses if an additional hour is spent on work/leisure. In such an approach for given utility function (representing preference between leisure and work) there is the unique level of wage (called reservation wage) that states the minimum acceptable wage for the person with such preference. In the other words, if the wage is lower than this reservation wage for a person, every hour of leisure will be more profitable (in terms of utility) then an hour of work. Such person will be therefore economically inactive (not in the labour force). This will be the case at least until the level of wage reaches the reservation wage or the non-labour income declines. Raise in wage above this level should induce an individual to look for job, an hour of which is, in such a case, worth more than an hour of leisure. The same effect can be exerted by decline in non-labour income. With the sufficiently low level of the latter an individual may find leisure too expensive and decide to enter labour market, although, not necessarily full time (the discussion of the time referred to in the model can be found in Killingsworth 1983: 18, 43-45; the model is also used to model the number of hours that individual wants to offer on the labour market. The latter, however, are less interesting for the study, at least as far as we look from the micro perspective). Hence, according to the model, probability of labour force participation decreases with the amount of non-labour income, other things being equal, or, from the other end, probability of labour force participation raises with the wage raise, other things being equal.

The model also provides simple predictions for people who are already in the labour market. If a wage rate of such person goes up it exerts two kinds of effects on the person's labour supply. Firstly, raising value of a market hour lifts up the alternative cost of an hour of leisure. As leisure become more expensive the person substitutes for it with additional hours of work (substitution effect – expands labour supply after improvement in the real wage level). However, as the wage rate goes up, the hours of market work provide more income. It also means that the person can afford more leisure (income effect – depresses labour supply with

growing wage rate). The net effect cannot be predicted without explicit utility function. Many studies show however, that aggregate labour supply function generally slopes upward (Killingsworth 1983).

It is worth noting that the predictions of the model are consistent with the patterns observed on the labour market. If the wage was understood wider, as both the level of pay and work conditions, the model might help to explain why its improvement expands labour supply. According to the model, improvement in wage may make the reservation wages lower then possible market wage for more people than beforehand, and therefore attract some part of the hitherto inactive. It may also suggest the rationale of low participation rates in the older age groups. For such age groups the possibility of earlier retirement or other social benefits can produce non-market income high enough to keep them off the market. Discussion of this effect can be found in Blondal, Scarpetta (1999).

The very simplified setting presents only the influence of wage, non-market incomes on the labour supply decisions. The simple framework, however, allows modifications and extensions: e.g. endogenising wage rate (Barzel 1973, after Killingsworth 1983; Cohen and Stafford 1974; Pencavel 1977), incorporating costs of work (Cogan 1980, after Killingsworth 1983; Heckman 1974), etc. Some of the model's shortcomings have been accounted for in the independent models. Two of them are presented below.

4.2. Household supply model

The simple model above does not recognize that within the households with two or more persons taking decision on the labour participation, the decisions are not taken independently. They are rather taken jointly as they regard income and leisure, and therefore utility, of entire household rather then of individuals within it. This shortcoming is overcome in the household model of labour supply (Kosters 1966). It takes account of the fact that the labour participation decision of one member of a household influences the decision of the others. In this model a household tries to maximize household utility[4] considering the real wage rates of all adult members, household non-labour income and accessible time. In such a framework the raise of wage of a member who is already on the market, as in the labour – leisure model, has twofold effect on this member. Firstly, substitution effect encourages him/her to substitute less profitable (in terms of utility) hours of non-market work or leisure to more profitable hours of market work. Secondly, income effect makes him/her to decrease the number of market work hours, as, with higher wage rate, the previously chosen number of hours provides higher income, so the individual can afford more leisure or non-market work. Again, without some explicit utility function the model cannot predict which of the effects

[4] It is important to note that in this model it is the utility of the household, not the individuals in the household is maximised.

outweighs. This is, however, not the end of effects that initial wage raise has on the household. An increase in the income of one member lifts also the income of entire household. This, in turn, acting like a raise in non-labour income in the previous model, will wield a negative income effect on the other members of the household. Finally, there is also "cross-substitution effect", which is a change in labour supply (hours of work) of one household member as a result of raise in the wage of another. The "cross-substitution effect" can be either positive or negative, as its direction depends on whether the hours of market work of members are substitutes or complements.

Simplifying, if they are substitutes it means that from the perspective of the household there is a number of hours or the level of income to be provided and it does not matter who in the household actually does the job. Alternative explanation is that there is a particular amount of housework that has to be done so if a person who performed it so far decides to devote additional hours into market work, due to wage rate increase, other member of the household has to take on the duties (and possibly give up some hours of his/her market work). In the case the additional hours of market work are complements, they bring income or utility to the household only when performed together. This can be most clearly explained by the gain from hours of leisure. If the working members of the household can gain (in terms of utility) from hour of leisure only if this hour is spent together, one member's gain from additional hour of market work, as a result of wage raise, would be outweighed by the other's loss in utility from the last hour of leisure. In such a case, it is better for the household if either both (or more) take up additional hour of market wage or leave their supply of labour (market hours) unchanged.

For substitutes the effect is negative, while it is positive for complements. Kaufman and Hotchkiss (2003) quote studies which showed that for a couple of husband and wife with no children cross-substitution effect was positive or zero, while for couples with children it was negative or smaller if positive (Lundberg 1988; Hotchkiss et al. 1997; Lundberg, Rose 2000; Hamermesh 2000). If the household member, whose wage goes up, is inactive the situation is analogical, except for the income effect of this member. Since his/her labour supply is zero, it cannot further decline, so income effect in such a case is zero.

This model may be useful in explaining why the wives of the men with high incomes are often economically inactive or why men, whose wives decide to enter labour market, often decrease their labour supply (hours of work). It may also help explain the traditional division of labour (poor prospects for women on the market push them out as the value of their work for households (leisure) exceeded the value of their work outside the house due to market wage rates), as well as its change when the market opportunities for women became too luring to stay at home with leisure (or housework). The common women's labour participation, in turn, induced some men to depress the number of hours spend on the market activities. Some argue that the presence of working women in the household (second earner) allowed men to be more choosy and demanding concerning work and related conditions.

There is also a group of models that, after Mincer (1962, 1963) and Becker (1965) recognise that consumption of some of the consumer goods requires certain amount of time. The group is called time allocation models. In this approach utility depends on commodities (Z_i) which are produced rather than bought. Two kind of inputs are required: market goods and time, which entails two kind of costs: money and forgone earnings. The individuals maximise their utilities allocating time between market work and the commodities, which are the direct source of utility. The model can be particularly useful in the analysis and interpretation of substitution and income effects of the change in the income setting or allocation of leisure time between various activities. Primarily, it was developed for single individuals, but was further developed to model families (Becker 1974; 1975). However, Killingsworth (1983) notices that the distinction between labour and leisure versus time allocation can be a purely semantic problem. As long as leisure is treated as all non-market activities, nothing changes in the labour-leisure approach. And, although the time allocation model(s) often says some things more clearly or in a more striking manner, it usually does not say much that is new (Killingsworth 1983: 43).

4.3. Life cycle allocation of time

The life cycle allocation of time is the concept that tries to explain different levels of participation rates between age groups by optimal timing of possible desirable activities or events in their lives. In the other words, an optimizing individual considering taking up the event of activity (like leisure, education, work, etc) weighs its potential benefits and related losses. If the losses outweigh benefits at a given moment of time, the individual postpone the activity. The concept was developed in dynamic labour supply models to explain numerous "stylised empirical facts" observed in the life cycles of men and women with surprising regularity (e.g. Ghez, Becker 1975, Mincer 1974, Weiss 1972, MaCurdy 1981). They were created to account for the fact that individuals decisions between leisure and market work are not one period decisions (e.g. for one month or year). They depend also on decisions of labour supply in the other periods. For instance, savings from the past periods, or borrowings when raise in real wage rate in the future is expected, can determine the levels of non-labour income from the labour-leisure setting. "Intertemporal substitution effect" can provide another example. It says that it can be more profitable (from a lifetime perspective) to provide more work in the times (during the career) when the wage rate is relatively high, and take more leisure when the wage rate is relatively low. Dynamic labour supply models predict the amount of work supplied by individuals in their whole lifecycle rather than in the single period. The simplest framework is outlined above. Comprehensive study of dynamic models of labour supply is presented in Killingsworth (1983).

From such a perspective for prime working ages (24-54) the opportunity cost of leisure as opposed to work is very high, and most people making the decision chooses work and

postpones leisure to later in the working life. With age (say after 55) they become less effective and mobile (both geographically but first of all in terms of acquiring new skills), their skills often become obsolete. Unless they are experts with rare and valuable experience, their wages go down, often considerably. Together with wage opportunity cost of not working falls and leisure, in a form of earlier retirement for instance, becomes an interesting option. From the point of view of optimal allocation of time then, the optimal time to take leisure is late working age. Such timing may help explain a substantial decrease of participation rates over 55 for both sexes (specific levels of participation rates by age and sex will be presented in the section on past trends and supplemented by information in part A.1 of the Annex).

The same concept can explain why most of labour market participants choosing the timing of additional years of education place them at the very beginning of their careers. There are two explanations. Firstly, again, as the opportunity cost of not working is relatively low at the beginning of the working life (Killingsworth 1983 after Ghez, Becker 1975, Mincer 1974). Studies on the level of earnings in the life cycle suggest that the earnings are relatively low at the beginning of the person's career. They go up gradually and achieve maximum about the age 35. Then they remain high and start to go back down about 50-55, often rapidly. The absolute level of incomes, in comparison to other people, and the pace of growth at the beginning and the end of working life, depend on the person's characteristics, such as sex, education, profession, etc. And secondly, individuals decide to take additional years of schooling, although it is costly[5], because they expect the return that will be greater than the cost. If they took the additional education at the end of working life, even with the assumption that it provides the same return as to the young, they would have only few years left to benefit from the schooling. Having this in mind, it is more effective to complete additional years of schooling as early as possible, to gain from it possibly long. This reasoning can help understand the very low levels of participation rates in the youngest age groups. Recently, the rationale has even been strengthened by technological progress and related structural changes on the labour market which have rewarded education and skills even more.

When talking about the optimal timing of certain activities and events in the professional life there is no way not to mention that women's decisions concerning economic activity are strongly influenced by their decisions about motherhood and its timing. Considering their decisions in this framework one should remember, however, that this case due to biological reasons is different from the one concerning for example education, as the decision cannot be taken anytime in the working age.

[5] It is costly both directly and indirectly, e.g. by preventing them from market work at that time. Even if it does not make some of them give up market work completely at the time of schooling, statistically it forces them to reduce numbers of hours they would otherwise worked, which statistically decreased labour supply in the age groups concerned.

5. Historical trends in labour force participation in Europe

First step to the projection of the labour force participation rates will be the description and analysis of the past trends of these rates in all the countries under study.

Presented trends are based on the data from International Labour Organization[6]. The data generally come from Labour Force Survey (further referred to as LFS) for countries under study and apply to 5 year age groups. Due to possible substantial statistical errors the differences between regions within countries are not taken into account; sex and age are the only features of the individuals of interest for this study. Due to historical and other reasons, the data from LFS are incomplete for several countries. They are supplemented with census data and estimates if available, what is clearly marked in all cases. One has to keep in mind the incompatibility of the various data sets but on the other hand one has to be aware that without the additional, estimated data sets participation patterns by age groups for some countries would be unknown, as for example for the UK and Switzerland. In all cases, however, data other than from LFS has only auxiliary character.

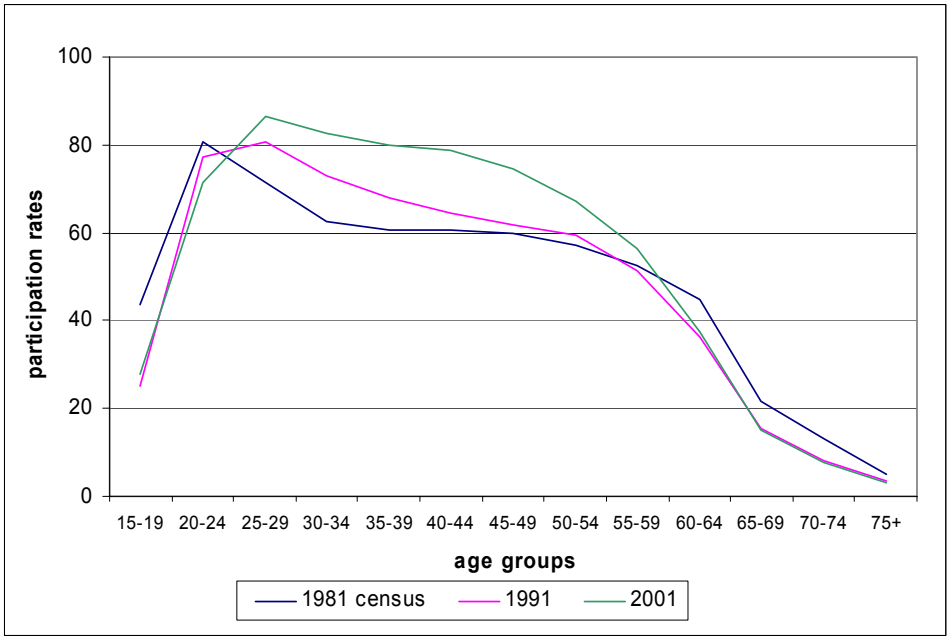
The data used in the analysis cover the period 1981-2002. The horizon of the historical data was chosen to show the most significant changes that took place on the labour market in recent decades on one hand, and to take into account the accessibility of the data on the other. To show all the changes in the levels of participation rates (especially of women) the data from the early sixties would be needed. However, as the data by age groups before 1981 are available only for 5 of 27 countries (Italy, the Netherlands, Norway, Spain and Sweden) the horizon for which the data was collected was shortened to start from the 1981, while most of the analysis in this section rely on the data from 1985-2002. For the period 1981-1984 data are available for 12 countries but for 7 of them, namely Austria, Denmark, Finland, France, Greece, Ireland and Portugal, data for more than one year are missing. In addition, the data are available in a variety of age groups for different countries and years within countries, which makes cross country comparisons or analysis of trends for specific age groups impossible. For 12 countries, Austria, Denmark, Finland, France, Greece, Ireland, Italy, the Netherlands, Norway, Portugal, Spain and Sweden, data are available from 1985, and they are generally in the desired 5 year age groups with minor variations in the youngest and the oldest age group. For the rest of the countries, especially for the post-socialist countries, the data are available as from the early or mid 1990s. In the case of Bulgaria the data for the last three years are available. For the post-socialist countries analysis will be therefore limited to the period for which the data are available.

For the last thirty years rapid change concerning economic activity has taken place on the labour markets both in terms of rates and stocks. This change, however, could not be noticed

[6] http://laborsta.ilo.org/ - status as of mid-March 2004.

if the economic activity was analysed in the aggregated measures. It can only be seen when data by age groups, and separately for each sex are presented. The changes in Ireland are a good example. When one looks at total participation rate between 1981 and 2001, it is clear that the fraction of economically active in the Irish population rose by 25%, from 37,2%[7] to 46,4%. The change of the fraction of the population aged 15 years or more is even smaller 12% (from 53,3% to 59,1%). However, there is no way to conclude from these numbers that the rise of fraction of active population by 25% happens due to the rise of fraction of active men by 5% and active women by 80% (the same numbers for population aged 15 years or more are -8% for men and 60% for women). The change is even more surprising, when one looks at the labour force participation rates by age groups for two sexes separately. It turns out that in the last twenty years in Ireland male labour force participation rates fell from 2%, in age groups 35-44[8], to 36%, in age groups 65-74. In the same time the change of female rates ranged from -59%, for age groups 70-74, to 187%, in age groups 35-39, and was over 100% for five 5 year age groups in the range 30-54. Participation patterns for both sexes together and separately are presented in Figures 5.1-5.3 below.

Figure 5.1. Total participation rates by age groups in Ireland, 1981-2001

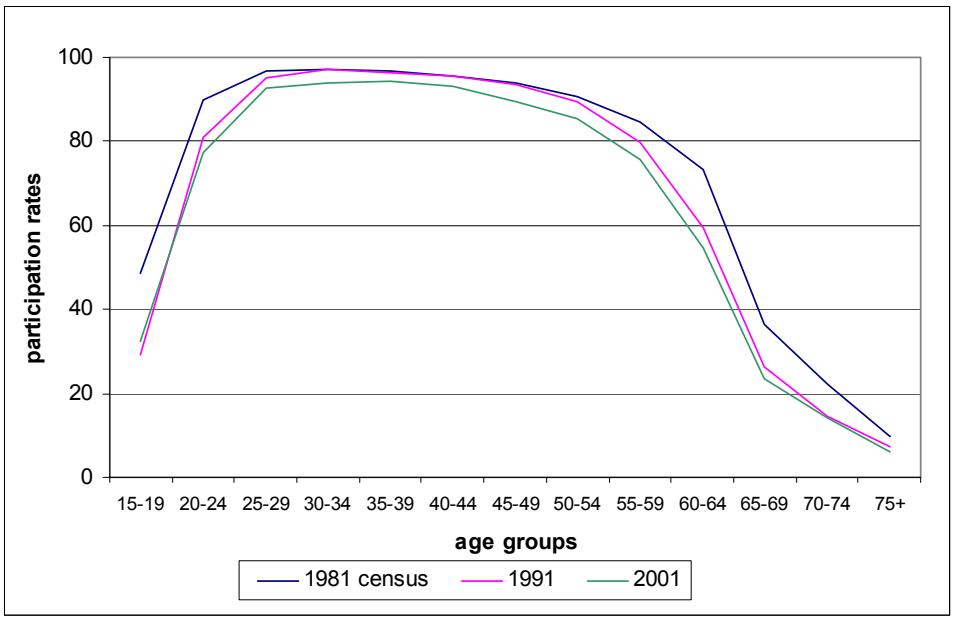


Source: ILO 2004

[7] Census data.

[8] It applies to both 5 year groups included in this range. In this paper labour force participation rates are analysed only for 5 year age groups. For simplicity wider age groups are used sometimes. They should be understood as 5 year age groups included in a given range.

Figure 5.2. Male participation rates by age groups in Ireland, 1981-2001



Source: ILO 2004

Figure 5.3. Female participation rates by age groups in Ireland, 1981-2001

Source: ILO 2004

Therefore, in the study below, measures of participation rates for two sexes are considered separately and mainly by age groups. As the level of participation rate of any of the age group is barely dependent on the levels of participation of the other, and there are no fixed ratios between the rates of the groups over the years (see for example female participation rates in Ireland in Figure 5.3), it is more convenient to look at the rates of distinct groups disjointedly, unless they show some similarity. It will allow for a better consideration of the factors that

play significant role in determining the levels of participation and more precise forecasting of their future course for certain age groups.

In the next section, the trends in male labour force participation rates are presented. The same trends for women are presented in the subsequent section.

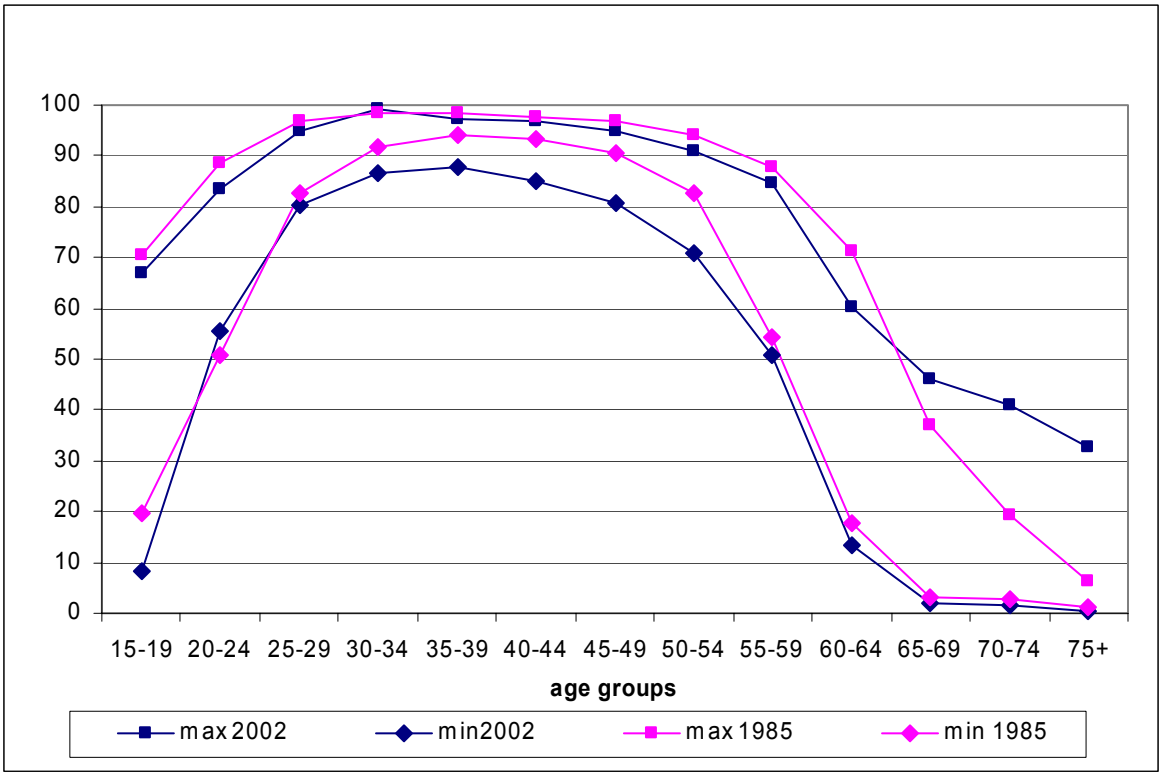
5.1. Changes in male labour force participation rates in Europe over the period 1985-2002

In the middle 1980s the pattern of male labour participation was inverted U-shaped for all countries in the study. For the last 20 years it has not changed considerably. Figure 5.4 presents the change of the participation rates between 1985 and 2002. Points in the patterns show the minimum and maximum male participation rates for certain age groups in all countries in a given year. Hence, the patterns cannot be attributed to any particular country. They rather indicate the intervals between which patterns of all countries can be drawn.

The participation rates of the middle age groups (5 year age groups in the range 25-54) vary between 80% and 100%, and for the last twenty years they have not changed much except for a slight decline. Due to similarity of the participation levels in middle age groups, and supposedly also the factors that determine them, past trends of participation rates will be discussed for all these groups together.

The young (age groups 15-19 and 20-24), and the old (all the 5 years age groups after 55 years of age) potential workers are the two groups for which diverse factors shape the participation rates. In the case of the group 15-19 the range of participation rates exceeded 40 percentage points in 1985, between 19,5% for France and 70,3% for Denmark, and was still well above 50 percentage points in 2002, from 8,6% to 67% for Bulgaria and Denmark respectively. For the next age group the range was more than 30 percentage points for both years. A quick glance on the data that underlie these figures reveals that the ranges of participation rates for the older age groups were also wide, although theory might suggest importance of different factors in this case. As these two groups (15-24 and 55+) seem to be different from the middle groups, and different from each other, they are discussed separately.

Figure 5.4 Changes of labour force participation rates of males by age groups in 27 European countries between 1985 and 2002



Source: ILO 2004, own computations

Factors influencing participation in three distinguished broad age groups are similar for the same age groups for both men and women. Hence, they are going to be discussed only for men. Women's economic activity is additionally strongly influenced by fertility, which will be discussed in the section 5.2. Section on female past participation will highlight mainly the factors that differ women from men on the labour market.

5.1.1. Middle age groups (25-54)

From all age groups for both men and women labour force participation rates of the middle male age groups are least variable. They vary in the range 70-100 (80-100 for all countries but for Romania, Hungary and Poland), as they did twenty years ago. The general change during these years shows a slight decline in levels of activity, for most of these age groups in all countries.

The greatest decline was reported for age group 45-49 – 13.9% in Bulgaria between 1985 and 2002[9]; most of the changes in rates did not exceed 5%. Several cases of increase of labour force participation rates were also observed, for instance all middle age groups in Slovenia between 1993 and 2002, age groups 40-54 in Hungary and few age groups in Czech Republic. They did not change, however, the overall situation. The average yearly changes of labour

[9] 1985 data for Bulgaria come from census.

force participation rates were smaller than 1% for all age groups and countries, except for age group 25-29 in Hungary, Lithuania and Romania (1.1%, 1.2% and -1.1% respectively) and age group 50-54 in Slovenia (1.6%). Selected data concerning past and current levels of participation rates are presented in Table 5.1.

The general decline is often claimed to be a result of the growing female activity. According to the household supply model, growing women's participation within households might exert negative effect on the male one by two channels. Firstly, women's earnings increased the household's income, which in turn created the negative income effect for men in the households. The other effect might have been the cross substitution effect that, attracting women to the market by improving their income opportunities, made men take over some of the, previously female, duties in the household. The latter effect would be in line with the increasingly popular model of partnership in the relationships/households.

The cases of Austria, Denmark, Ireland, Italy and Norway may support the thesis of substitution of labour force participation of men and women. In these countries the increases in female participation rates were accompanied by the declines in the male participation, although the countries differed in the strength of the change for men and women, and in the levels reached by the participation rates around the year 2000, the last data available for the countries. These differences may be due to the diversity in the social institutions and manners concerning work and family roles in the countries in question.

The cases of other countries reveal slightly different patterns. There are countries where the activity of women went up significantly and the participation of men hardly responded, like Belgium and France. In Greece and Slovenia in some age groups economic activity of men rose, despite shifts up for women. Finally, there are countries where the activity of men declined, sometimes considerably, despite practically no change in participation of women, as in Finland and Sweden. Again, in these cases social and cultural differences between the countries may be a part of the explanation. The initial levels of participation as well as income differences and changes might also contribute to the explanation.

As percentage differences can be illusive, in some cases it is worth to look at the levels and absolute changes. For instance, the increase of participation rates in Slovenia or Greece does not seem unusual when the low initial levels of these rates are taken into account. Around 2002, after the increase, labour force participation rates in age groups 30-49 varied between 91.8% and 97% in both countries, which is close to average for all countries in the study. 15% increase of participation rate of age group 50-54 in Slovenia between 1993 and 2002 was the greatest increase of participation rate for all male middle age groups in all analysed countries. It resulted, however, in the rate of 82.4%, which is still one of the lowest rates for this age group in the study.

Table 5.1. Characteristics of male labour force participation in 27 European countries, 1985-2002

Labour force participation rates

	AT	BE	BG	CZ	DK	EE	FI	FR	DE	GR	HU	IE	IT	LV	LT	LU	NL	NO	PL	PT	RO	SK	SI	ES	SE	CH	UK
in	2002	2002	2002	2002	2002	2002	2002	2000	2002	2001	2002	2001	2001	2002	2000	2002	2001	2002	2002	2002	2001	2002	2002	2002	2002		
25-29	89,1	92,7	80,4	94,7	90,9	89,0	90,2	91,7	86,2	91,6	88,3	92,8	81,0	91,9	93,8	91,5	93,2	88,9	92,1	90,3	87,0	94,8	90,4	88,6	85,3	:	:
30-34	94,7	94,6	86,8	97,2	93,4	93,4	94,0	95,6	94,7	96,3	91,4	93,8	93,2	92,3	95,1	99,1	95,1	93,3	95,5	95,1	92,0	95,3	96,1	94,6	91,0	:	:
35-39	96,3	94,8	87,7	97,2	93,9	91,1	93,3	96,3	95,9	97,0	89,3	94,5	95,7	89,7	93,4	95,9	95,0	92,6	93,9	95,0	92,8	94,5	94,8	94,8	90,2	:	:
40-44	96,2	92,7	87,0	96,3	92,2	89,4	92,5	95,5	95,4	96,8	84,9	93,3	96,0	88,3	96,2	94,1	94,4	92,6	90,8	94,8	91,3	95,8	95,6	94,1	89,9	:	:
45-49	94,3	90,9	81,5	94,3	92,0	91,4	89,4	94,9	94,3	94,4	80,7	89,6	94,3	87,4	89,4	91,2	92,7	89,9	83,6	92,7	88,5	92,1	90,4	91,8	89,9	:	:
50-54	88,5	81,1	77,1	90,1	88,9	85,2	85,4	90,8	90,3	87,9	71,5	85,3	83,9	85,0	90,6	87,3	89,4	88,9	71,0	87,5	78,3	87,9	82,4	87,4	88,4	:	:

Percentage change of male participation rates

	AT	BE	BG	CZ	DK	EE	FI	FR	DE	GR	HU	IE	IT	LV	LT	LU	NL	NO	PL	PT	RO	SK	SI	ES	SE	CH	UK
Between	2002/ 1985	2002/ 1981	2002/ 1985	2002/ 1996	2002/ 1985	2002/ 1995	2002/ 1985	2000/ 1985	2002/ 1995	2001/ 1985	2002/ 1994	2001/ 1985	2001/ 1985	2002/ 1996	2000/ 1996	2002/ 1981	2001/ 1985	2002/ 1985	2002/ 1992	2002/ 1985	2001/ 1995	2002/ 1993	2002/ 1993	2002/ 1985	2002/ 1985		
25-29	-2,9	-0,5	:	-2,2	-2,5	-2,5	-2,9	-1,4	-1,0	11,0	8,9	-4,3	-11,1	-1,1	4,9	-4,0	0,5	-3,1	-3,4	-4,1	-6,7	-1,8	6,7	-4,7	-7,3	:	:
30-34	-1,8	-1,1	-11,3	-0,4	-1,2	-3,0	-2,8	-0,3	-1,3	5,1	-3,7	-3,8	-4,5	-0,8	-1,0	0,8	-1,0	-3,0	0,0	-2,0	-2,7	-0,7	8,3	-2,5	-4,1	:	:
35-39	-1,3	-0,7	-8,5	0,3	-1,1	-3,3	-3,3	-0,2	-1,2	1,3	-7,7	-2,2	-2,5	-2,0	-2,4	-2,5	-1,1	-3,7	-0,4	-1,0	-2,3	-2,5	8,0	-2,0	-6,7	:	:
40-44	-1,4	-1,1	-8,9	-0,3	-1,4	-4,2	-2,6	-0,6	-1,9	-0,7	0,1	-1,9	-1,5	-3,0	2,8	-3,6	-0,2	-3,1	-2,3	-1,5	-3,6	0,0	6,3	-1,6	-7,1	:	:
45-49	-1,9	0,1	-13,9	0,3	1,8	-1,0	-2,3	0,0	-1,9	-2,4	0,1	-4,4	-1,7	2,5	-0,1	-5,0	2,4	-5,2	-3,9	-1,0	-4,9	-1,6	3,6	-1,9	-6,2	:	:
50-54	-2,0	-5,4	-12,5	0,5	-0,1	-0,5	1,0	0,0	-2,5	-0,6	0,4	-5,5	-5,9	0,2	3,2	-3,0	8,4	-2,2	-6,2	2,0	-7,2	1,4	15,4	-1,8	-5,9	:	:

Average yearly growth index

	AT	BE	BG	CZ	DK	EE	FI	FR	DE	GR	HU	IE	IT	LV	LT	LU	NL	NO	PL	PT	RO	SK	SI	ES	SE	CH	UK
Between	2002/ 1985	2002/ 1981	2002/ 1985	2002/ 1996	2002/ 1985	2002/ 1995	2002/ 1985	2000/ 1985	2002/ 1995	2001/ 1985	2002/ 1994	2001/ 1985	2001/ 1985	2002/ 1996	2000/ 1996	2002/ 1981	2001/ 1985	2002/ 1985	2002/ 1992	2002/ 1985	2001/ 1995	2002/ 1993	2002/ 1993	2002/ 1985	2002/ 1985		
25-29	0,998	1,000	:	0,996	0,999	0,996	0,998	0,999	0,999	1,007	1,011	0,997	0,993	0,998	1,012	0,998	1,000	0,998	0,997	0,998	0,989	0,998	1,007	0,997	0,996	:	:
30-34	0,999	0,999	0,993	0,999	0,999	0,996	0,998	1,000	0,998	1,003	0,995	0,998	0,997	0,999	0,997	1,000	0,999	0,998	1,000	0,999	0,996	0,999	1,009	0,999	0,998	:	:
35-39	0,999	1,000	0,995	1,001	0,999	0,995	0,998	1,000	0,998	1,001	0,990	0,999	0,998	0,997	0,994	0,999	0,999	0,998	1,000	0,999	0,996	0,997	1,009	0,999	0,996	:	:
40-44	0,999	0,999	0,995	0,999	0,999	0,994	0,998	1,000	0,997	1,000	1,000	0,999	0,999	0,995	1,007	0,998	1,000	0,998	0,998	0,999	0,994	1,000	1,007	0,999	0,996	:	:
45-49	0,999	1,000	0,991	1,001	1,001	0,999	0,999	1,000	0,997	0,998	1,000	0,997	0,999	1,004	1,000	0,998	1,002	0,997	0,996	0,999	0,992	0,998	1,004	0,999	0,996	:	:
50-54	0,999	0,997	0,992	1,001	1,000	0,999	1,001	1,000	0,996	1,000	1,001	0,996	0,996	1,000	1,008	0,999	1,005	0,999	0,994	1,001	0,988	1,002	1,016	0,999	0,996	:	:

Source: ILO 2004, own computations

Different factors may underlie changes in post-socialist countries. In recent years labour force participation rates in these countries have fallen relatively quickly to reach generally lower levels than in the rest of the countries in the study, with the Czech Republic being an exception. The most substantial decline has taken place in Bulgaria, where participation rates fell below 90% in all male middle age groups. Such tendencies might have been a result of transformation and structural change of the labour markets in these countries. Related structural unemployment can, through discouragement effect, push potential workers out of the market.

It can be noticed that in almost all analysed countries participation rates for age groups 25-29 and 50-54 are slightly lower than for the rest of the middle age groups. Relatively lower levels of participation rates for the age group 25-29, then in older groups (a few percentage points for most of countries) can be a result of extended education. However, as the type of schooling and trainings undertaken at this age usually do not preclude work, this effect, although noticeable, is much smaller than in the younger age groups (see below). In some countries the lower participation rates in this group can additionally reflect problems of the young with entering the labour market, high unemployment in this group and the related discouragement.

Similarly, slightly lower levels of participation rates in the oldest group of middle age men (50-54) can be attributed to the early start of the leaving the labour market. Partly, the early leavers belong to specific professions, like artists, sportsmen; some of them live in the countries with sufficiently generous pension and social security systems (it will be discussed in detail in section 5.1.3). In addition, early, sometimes very early, retirement was used in the post-socialist countries to mitigate social tensions which arose due to unemployment in the first years of transformation. It was used especially in the case of unemployed who lost jobs due to structural changes and whose qualifications were obsolete or inadequate to the new requirements of the modified labour market, e.g. for miners, heavy industry workers in Poland. Again, this effect will be more significant for older age groups.

Male middle age groups have traditionally formed the core labour force. Despite slight declines of participation rates and increased activity of women, which reduced the share of middle aged men in the total population of the economically active, this group still constitutes the most stable and basic part of the labour force.

5.1.2. Young age groups (15-24)

Labour force participation of young age groups, contrary to the middle ones, vary more and oscillate around lower levels, especially the younger group. Since 1985 the labour force participation rates of young people have generally fallen. Low levels and further declines of the labour force participation rates of young people follow mainly from education, whose importance has risen considerably recently.

Around the year 1985 labour force participation rates in the age group 15-19 varied between 19,5% in France to 70,3% in Denmark[10]. Around the year 2002 respective numbers were 8,4% for Hungary and 67% for Denmark. In the last decade labour force participation rates in the youngest working age group have fallen in all countries except for Belgium, Norway, Slovenia and the Netherlands. The fastest decline was observed in Czech Republic, where labour force participation rate in age group 15-19 has fallen on average by over 14% a year for the last seven years. The greatest increase of participation rate in this age group was observed in the Netherlands. It amounted to 144%, from 25,2% in 1985 to 61,5% in 2002, which means that the labour force participation rate in the age group 15-19 have grown by 5% a year on average for the last 17 years. Relatively significant increases of labour participation in the youngest age group were also observed in Bulgaria, 104,8%, Belgium, 62,2% and Slovenia, 48,3%. In absolute terms, however, they amounted to about 4,5 percentage points. Selected data concerning past and current levels of participation rates are presented in Table 5.2.

Labour force participation rates in the age group 20-24 varied in a smaller range. In 2002 they oscillated between 55,5% for France and 83% for Denmark, instead of 50,7% for Greece and 88,6% for Ireland in 1985. Since the mid-1980s the labour force participation rates in this age group have slightly fallen in all countries except for Greece, Portugal, Slovenia and the Netherlands. The decline ranged from 1,2% in Spain to 29% in France. The greatest increase was reported in Greece, where labour force participation rate of the age group 20-24 changed by 24.1%, from 50.7% in 1985 to 62.9% in 2002.

When comparing the data between countries one has to bear in mind the differences in definitions underlying the data. The differences in treatment of people in service, as well as the character of the military system, can be partly responsible for variation of male participation rates for the same age groups between countries, especially in the young age groups. The analysis of definitions reveals wide range of possibilities concerning the issue. Some countries exclude people doing compulsory service both from active and from potential labour force, like Spain and Portugal, other only from the active, like Poland for example. In the studied group there are also cases of countries including all people in the service into the group of active, or excluding only the conscripts, like Belgium, or France. This makes cross country comparisons (especially in the two youngest age groups) unreliable and can partly explain big differences in participation between countries. It is worth noting that all countries with the highest participation rates in the group 15-19, such as Austria, Denmark, the Netherlands and Norway, but also Finland, Germany and Sweden, include military (with conscripts) into the labour force.

[10] Data for Central and East European countries are not available for this period. Hence, the range of variation might have been wider for all countries in the study.

Table 5.2. Characteristics of male labour force participation in 27 European countries, 1985-2002

Labour force participation rates

	AT	BE	BG	CZ	DK	EE	FI	FR	DE	GR	HU	IE	IT	LV	LT	LU	NL	NO	PL	PT	RO	SK	SI	ES	SE	CH	UK
in	2002	2002	2002	2002	2002	2002	2002	2000	2002	2001	2002	2001	2001	2002	2000	2002	2001	2002	2002	2002	2001	2002	2002	2002	2002	:	:
15-19	47,6	13,3	8,6	11,4	67,0	11,0	34,7	11,4	33,6	14,2	8,4	32,5	19,8	18,8	19,0	14,5	61,5	50,0	10,7	30,3	24,7	14,4	13,2	31,0	29,1	:	:
20-24	73,7	63,2	57,5	73,0	83,4	70,6	74,9	55,5	75,4	62,9	61,2	77,4	62,1	73,3	78,0	59,3	81,8	77,0	65,8	73,4	68,4	76,9	63,0	66,2	68,1	:	:

Percentage change of male participation rates

	AT	BE	BG	CZ	DK	EE	FI	FR	DE	GR	HU	IE	IT	LV	LT	LU	NL	NO	PL	PT	RO	SK	SI	ES	SE	CH	UK
Between	2002/ 1985	2002/ 1981	2002/ 1985	2002/ 1996	2002/ 1985	2002/ 1995	2002/ 1985	2000/ 1985	2002/ 1995	2001/ 1985	2002/ 1994	2001/ 1985	2001/ 1985	2002/ 1996	2000/ 1996	2002/ 1981	2001/ 1985	2002/ 1985	2002/ 1992	2002/ 1985	2001/ 1995	2002/ 1993	2002/ 1993	2002/ 1985	2002/ 1985		
15-19	-15,6	62,2	104,8	-60,4	-4,7	-59,4	-15,0	-41,5	-6,9	-43,4	-48,5	-17,7	-29,5	-33,3	-31,2	-68,5	144,1	9,2	-59,8	-50,3	-38,9	-53,6	48,3	-27,7	-34,9	:	:
20-24	-6,7	-16,1	-33,0	-13,7	-3,6	-14,0	-10,2	-29,0	-3,0	24,1	-7,4	-12,6	-14,7	-13,7	-5,7	-27,2	8,1	-3,4	-19,4	1,0	-15,7	-10,2	8,1	-1,2	-17,8	:	:

Average yearly growth index

	AT	BE	BG	CZ	DK	EE	FI	FR	DE	GR	HU	IE	IT	LV	LT	LU	NL	NO	PL	PT	RO	SK	SI	ES	SE	CH	UK
Between	2002/ 1985	2002/ 1981	2002/ 1985	2002/ 1996	2002/ 1985	2002/ 1995	2002/ 1985	2000/ 1985	2002/ 1995	2001/ 1985	2002/ 1994	2001/ 1985	2001/ 1985	2002/ 1996	2000/ 1996	2002/ 1981	2001/ 1985	2002/ 1985	2002/ 1992	2002/ 1985	2001/ 1995	2002/ 1993	2002/ 1993	2002/ 1985	2002/ 1985		
15-19	0,990	1,023	1,043	0,857	0,997	0,879	0,991	0,965	0,990	0,965	0,920	0,988	0,978	0,935	0,911	0,947	1,057	1,005	0,913	0,960	0,921	0,918	1,045	0,981	0,975	:	:
20-24	0,996	0,992	0,977	0,976	0,998	0,979	0,994	0,977	0,996	1,014	0,990	0,992	0,990	0,976	0,985	0,985	1,005	0,998	0,979	1,001	0,972	0,988	1,009	0,999	0,989	:	:

Source: ILO 2004, own computations

Labour force participation rates in the two youngest age groups depend greatly on young people decisions to enter the labour market. Green et al. (2001) in their comprehensive report on labour force differences among young people in EU15 pointed out that *youth transitions* (from education to work) has changed during the 1980s and 1990s. They have tended to lengthen, become ambiguous/uncertain and more diverse. There are two clear tendencies. Firstly, in most of countries young people postpone their labour market entrance to older age than before. Secondly, for growing share of young people, labour market entrance does not mean the change from one status to another. Using the language of Green et al. (2001), it is rather getting another status (labour market participant), while still retaining the former one (education). Both tendencies are the result of the growing importance of education on today's labour market.

The first tendency may be reflected by the overall declines of labour force participation rates in most of analysed countries in the last decades, especially in the younger age group. It can be seen in table 5.2 that in most of countries economic activity in the age group 15-19 have declined more than it have in age group 20-24, with Belgium, Bulgaria, the Netherlands, Norway and Slovenia being the exceptions. The second tendency may be identified with the growing popularity of part time jobs and other flexible forms of employment among young people. These forms allow engaging in market work without giving up education and, hence, can partly alleviate the depressing effect of the first tendency on labour force participation rates of young age groups. It can be also the case that the second tendency dominates the first one, as might have happened in the Netherlands or Norway in the youngest age group. Between 1985 and 2002 in the Netherlands male labour force participation rates rose by 144% in age group 15-19 and by 8% in age group 20-24. In the same time the share of people aged between 15 and 24 years working on the pat-time basis in total employment in this group almost quadrupled, from 14,6% in 1985 to 56.7% in 2002. Data concerning part-time employment as a percent of the total employment in age group 15-24 in 1985 and 2002 are presented in Table 5.3. The second tendency may also explain relatively high levels of participation rates in Denmark, Norway and the Netherlands. In all three countries shares of the part-time employed in the total employed in age group 15-24 is relatively high and further grow (Eurostat 2004).

Table 5.3. Part-time employment as percent of the total employment of age group 15-24 for 27 European Countries, quarter data, 1985-2004

Country	Total		Males		Females	
	II 1985	II 2002	II 1985	II 2002	II 1985	II 2002
Austria	:	:	:	:	:	:
Belgium	10,9	17.7	5,2	10.9	17,9	26.4
Bulgaria	:	4.0 u	:	:	:	:
Czech Republic	5,3**	4.1	3,7**	3.7	7,6**	4.5
Denmark	30,2	50.3	24,6	38.8	37,1	62.1
Estonia	15,8** u	:	:	:	:	:
Finland	36,5**	34.1	27,4**	25.3	47,3**	43
France	12,7***	:	7,5***	:	18,7***	:
Germany	3,6	13.5	1,3	9.7	6,1	17.5
Greece	6,7	7.6	5	6.1	9,3	10
Hungary	3,5**	3.7	2,9**	2.8	4,3**	4.7
Ireland	6,2	21.2	5,4	15.6	7,1	27.7
Italy	6,5	9.6	4,7	6	9,3	14.8
Latvia	:	13.1	:	8.2 u	:	19.6
Lithuania	:	11.2	:	10.8	:	11.8
Luxemburg	11,6	6.2 u	12,7	:	10,5	7.8 u
Norway	45,8**	49.5	33**	39.4	59**	59.4
Poland	15**	21	13,8**	18.5	16,8**	24
Portugal	5,2*	7.5	3,7*	6.4	7,5*	8.9
Romania	21,3**	13.3	20,3**	14.6	22,6**	11.7
Slovakia	:	1.3	:	:	:	:
Slovenia	14,8**	17.6	13,6**	11.7	16,4**	25.9
Spain	14**	13.4	9,3**	8	20,8**	21.6
Sweden	42,6**	41	28,6**	28.4	57,9**	54.2
Switzerland	17,2**	20.4	14**	14.3	20,5**	26.7
the Netherlands	21,8	64	14,6	56.7	28,7	71.7
UK	14,5	33.4	9,2	26.2	20,6	41.4

u Unreliable or uncertain data, * II 1986 data, ** II 1997 data, *** I 1985

Source: Eurostat 2004

It is worth stressing that social habits as well as incentives coming from family and from the institutional arrangements add up to the tendencies. If high participation of young is commonly accepted in a country, it is usually reflected in social and institutional arrangements. In such a case it is relatively easy for the young person to work during the education process, also part time. If late and "permanent" entrances are the rule, such arrangements are not necessary. Green et al. (2001) presents typology of the welfare states with the incentives they create, also for the young. It follows from the presentation that, for example, in Sweden, Denmark, Finland and Netherlands a mix of policies encourages most adults to enter and stay in the labour market. In Belgium, France, Germany, Austria and Luxembourg a mix of policies tends to limit the share of the population in the labour force. In the same time for Italy, Greece, Spain and Portugal family support allow the young to wait a long time for an employment opportunity. Such division of countries is clearly reflected in the data.

It is worth noting that in Central and Eastern European Countries the impact of education on the level of labour force participation differs slightly from the remaining of countries. The rationale is similar but in this group of countries attractiveness of education can be even stronger, which has historic roots. Till 1990s education could hardly influence labour market position. Instead, other things were of value. In the early years of the system transformation it has changed and education and skills started to matter. In the early nineties competed studies in economics, management or finance were sufficient to be granted managerial post, due to general shortages of people with adequate skills and experience. Quick careers attracted many young people to follow the pattern. Although possibilities of rapid promotions run out within the first few years of transformation, the economic studies still lure thousands of young people every year. As the significant part of them studies full time, the labour force participation rates in the countries of Central and Eastern Europe are relatively low and have fallen since the early 1990s.

5.1.3. Older age groups (55+)

For the last two decades labour force participation of older workers have generally been lower than for the younger age groups and have fallen down. As in the case of younger age groups, they were a result of withdrawals from the labour market. For these age groups, however, these decisions were often related to (earlier) retirement and, hence, were permanent. The scale and pace of the phenomena depended on the country. Selected data concerning past and current levels of participation rates are presented in Table 5.4.

Labour force participation rates in the older age groups decline with age in all countries, except for Slovenia. It can be seen in table 5.4 that participation rates in the age group 55-59 are lower then they are in the middle age groups in all countries. For older age groups economic activity is even lower with sudden decline around the age 65 in most of countries, except for Romania and Portugal. Age groups 55-59 and 60-64, i.e. men in pre-retirement age in most of countries, are characterised by relatively high participation rates and smaller variability for the last two decades when compared to the older groups. In 2002 the highest economic activity in the age group 55-59 was observed in Lithuania, 84,6%, Sweden, 83,9%, Norway and Denmark, 83.6%, while the lowest was observed in Poland 50,7%. In the age group 60-64 variation between countries was greater. The highest participation rates were observed in Sweden and Norway, 60,1% and 60% respectively, while the lowest in the Slovak Republic, 13,2%.

Table 5.4. Characteristics of male labour force participation in 27 European countries, 1985-2002

Labour force participation rates

	AT	BE	BG	CZ	DK	EE	FI	FR	DE	GR	HU	IE	IT	LV	LT	LU	NL	NO	PL	PT	RO	SK	SI	ES	SE	CH	UK
in	2002	2002	2002	2002	2002	2002	2002	2000	2002	2001	2002	2001	2001	2002	2000	2002	2001	2002	2002	2002	2001	2002	2002	2002	2002		
55-59	67,4	53,2	60,2	79,5	83,6	72,3	71,7	65,8	78,0	73,1	55,1	75,8	53,8	75,2	84,6	52,2	73,3	83,6	50,7	74,4	61,8	75,7	53,6	75,1	83,9	:	:
60-64	18,3	19,0	23,9	29,9	42,0	55,5	30,9	15,5	34,0	43,2	14,8	54,6	31,0	41,4	37,9	18,3	26,4	60,0	27,5	52,2	49,2	13,2	20,4	46,6	60,1	:	:
65-69	6,1	3,8	9,1	11,5	18,7	25,0	7,6	3,7	7,4	15,9	4,7	23,3	11,2	23,9	12,8	2,3	9,9	24,1	15,4	33,4	46,1	1,9	9,3	5,3	:	:	:
70-74	3,7	2,1	2,9	6,1	:	10,7	4,4	1,7	3,9	5,8	1,9	14,2	4,5	11,5	6,6	:	4,0	6,7	10,0	26,8	40,9	:	11,4	1,5	:	:	:
75+	1,9	1,1	:	2,5	:	:	:	0,6	1,5	1,4	:	6,2	2,6	:	:	:	2,2	:	4,5	17,8	32,7	:	10,0	0,5	:	:	:

Percentage change of male participation rates

	AT	BE	BG	CZ	DK	EE	FI	FR	DE	GR	HU	IE	IT	LV	LT	LU	NL	NO	PL	PT	RO	SK	SI	ES	SE	CH	UK
Between	2002/ 1985	2002/ 1981	2002/ 1985	2002/ 1996	2002/ 1985	2002/ 1995	2002/ 1985	2000/ 1985	2002/ 1995	2001/ 1985	2002/ 1994	2001/ 1985	2001/ 1985	2002/ 1996	2000/ 1997	2002/ 1981	2001/ 1985	2002/ 1985	2002/ 1992	2002/ 1985	2001/ 1995	2002/ 1993	2002/ 1993	2002/ 1985	2002/ 1985		
55-59	-4,3	-24,8	-25,6	2,5	2,2	-5,6	13,3	-4,5	2,9	-5,8	22,7	-9,2	-23,8	2,3	2,4	-3,9	11,7	-2,1	-11,1	1,4	-9,0	13,5	44,9	-4,6	-4,2	:	:
60-64	3,4	-41,2	-39,0	-4,5	-10,3	39,5	-17,6	-48,0	15,3	-20,2	16,5	-18,3	-19,7	15,3	-38,3	-34,6	-4,7	-16,0	-20,5	-10,9	-3,2	-12,6	29,9	-14,0	-7,5	:	:
65-69	22,0	15,2	-68,0	29,2	-34,2	10,1	-36,7	-60,2	13,9	-40,9	-39,7	-9,7	-20,6	44,9	-76,5	-76,5	167,6	-34,7	-16,3	67,8	-4,4	-67,8	5,7	-56,9	:	:	:
70-74	37,0	:	-79,3	:	:	-44,3	-51,7	-48,5	8,3	-60,3	-58,7	-2,7	-10,0	57,5	-83,7	:	:	-50,0	:	:	-10,1	:	48,1	-60,5	:	:	:
75+	72,7	:	:	:	:	:	:	-66,7	-11,8	-75,0	:	0,0	:	:	:	:	:	:	:	:	16,8	:	:	-72,2	:	:	:

Average yearly growth index

	AT	BE	BG	CZ	DK	EE	FI	FR	DE	GR	HU	IE	IT	LV	LT	LU	NL	NO	PL	PT	RO	SK	SI	ES	SE	CH	UK
Between	2002/ 1985	2002/ 1981	2002/ 1985	2002/ 1996	2002/ 1985	2002/ 1995	2002/ 1985	2000/ 1985	2002/ 1995	2001/ 1985	2002/ 1994	2001/ 1985	2001/ 1985	2002/ 1996	2000/ 1997	2002/ 1981	2001/ 1985	2002/ 1985	2002/ 1992	2002/ 1985	2001/ 1995	2002/ 1993	2002/ 1993	2002/ 1985	2002/ 1985		
55-59	0,997	0,987	0,983	1,004	1,001	0,992	1,007	0,997	1,004	0,996	1,026	0,994	0,983	1,004	1,006	0,998	1,007	0,999	0,988	1,001	0,984	1,014	1,042	0,997	0,997	:	:
60-64	1,002	0,975	0,971	0,992	0,994	1,049	0,989	0,957	1,020	0,986	1,019	0,987	0,986	1,024	0,886	0,980	0,997	0,990	0,977	0,993	0,995	0,985	1,030	0,991	0,995	:	:
65-69	1,012	1,007	0,935	1,044	0,976	1,014	0,973	0,940	1,019	0,968	0,939	0,994	0,986	1,064	0,696	0,933	1,063	0,975	0,982	1,031	0,993	0,882	1,006	0,952	:	:	:
70-74	1,019	:	0,912	:	:	0,920	0,958	0,957	1,012	0,944	0,895	0,998	0,993	1,079	0,635	:	:	0,960	:	:	0,982	:	1,045	0,947	:	:	:
75+	1,033	:	:	:	:	:	:	0,929	0,982	0,917	:	1,000	:	:	:	:	:	:	:	:	1,026	:	:	0,927	:	:	:

Source: ILO 2004, own computations

In the age group 55-59 economic activity rose in almost half of the countries in the study. In the group of countries where participation rates had fallen for the last two decades the declines were moderate (below 10%), except for Bulgaria, Belgium, Italy and Poland. In the first three countries economic activity of men in this age group declined by almost a quarter. In Poland economic activity of men in the age group 55-59 fell by 11,1% in the last decade. Economic activity in the age group 60-64 have varied more for the last 15 years. Participation rates have risen only for 6 countries: Estonia, Slovenia, Germany, Hungary, Latvia and Austria. For the rest of countries they have fallen, sometimes considerably. Between 1985 and 2002 economic activity in this age group in France have fallen by almost a half.

Economic activity of age groups 65-59, 70-74, 75, as well as its dynamics, are more difficult to compare between countries, as for many countries data are not available. It is only possible to comment that labour force participation rates of three oldest male age groups vary greatly between countries in most of cases not exceeding 25% in the age group 65-69, 12% in the age group 70-74 and 5% in the oldest age group. Slightly higher rates in two oldest groups are observed in Ireland and Slovenia. Portugal and Romania report much higher rates.

The decisions of older workers to leave the market earlier are closely related to organisation of social security institutions, specifically social security benefits and pension systems. As they are supposed to provide non work related income to those who cannot support themselves, they are also a source of alternative cost for those still working. Organisation of these systems can provide incentives or disincentives to work beyond retirement age. Blondal and Scarpetta (1999) show that, through implicit taxes, pension systems discourage older people to work in virtually all OECD countries. It is very characteristic in table 5.4 that in most of countries economic activity of older men (people) fall drastically after they have achieved standard retirement age (standard retirement ages for selected countries are presented in table 5.5). According to Duval (2004) past changes in implicit tax rates and standard retirement ages are found to explain about a third (31%) of the trend decline in older males' labour force participation in OECD countries over the last three decades.

Table 5.5. Standard and early entitlement to old age pension benefits for selected countries, 2003

Country		Males				Females
		Early		Standard age		Standard age
Austria		65		65		60
Belgium		60		65		63
Czech Republic		58.5		61.5		59.5
Denmark		65		65		65
Finland		62		65		65
France		60		60		60
Germany		63		65		65
Greece		60		65		65
Hungary		62		62		62
Ireland		65		66		66
Italy		57		65		65
Luxemburg		60		65		65
the Netherlands		60		65		65
Norway		67		67		67
Poland		65		65		60
Portugal		55		65		65
Slovakia		60		60		57
Spain		60		65		65
Sweden		61		65		65
Switzerland		63		65		63
UK		65		65		60

Notes:
Austria: early age of eligibility does not incorporate special early retirement for long insurance years, which will be progressively phased out (following the 2003 reform) but could still be accessed from age 61.5 in 2003. Standard age for women to be increased from age 60 to age 65 between 2024 and 2033.
Belgium: standard age for women scheduled to rise to age 65 by 2009.
Czech Republic: standard and minimum retirement age scheduled to rise gradually to reach age 62 for men and age 61 for women (with no children) in 2007.
Greece: standard age is 62 for men and 57 for women who first started to work before 1992.
Italy: minimum retirement age is the minimum age of eligibility to a seniority pension, also equal to the minimum retirement age in the new pension system. Standard age is 60 (instead of 65) for women who first started to work before 1996.
Luxemburg: early age of eligibility does not incorporate the special early retirement scheme, which can be accessed from age 57 with 40 years of contribution
Norway: early age of eligibility does not incorporate the special early retirement (AFP) scheme, which can be accessed from age 62 in 2003.
Poland: standard age is 55 for women with 30 years of insurance.
Slovakia: standard age for women varies between 53 and 57 according to number of children raised.
Switzerland: standard age for women will be 64 in 2005.
United Kingdom: standard age for women will rise from age 60 to age 65 ver 2010-2020 period.
Source: Duval (2004)

It is worth noting, however, that older people often leave the labour market permanently before they achieve retirement age choosing different forms of earlier retirement. Such option is especially popular among older people with low skills, who at younger ages were hired for simple or physical jobs. Their salaries at the end of career are very low, and non market income coming from social security becomes an attractive option.

The popularity of earlier retirement is country specific. Depending on the organisation of social security and pension systems, as well as labour market, its scale may vary. In the countries with restricted access and financial punishment for earlier retirement (i.e. by significantly lower benefits) labour participation rates in older age groups should be relatively

higher. To the contrary, in the countries with generous systems, and practically no effect of earlier retirement on benefits, the participation rates should be lower. This can be strengthened by social habits which can legitimise or disapprove earlier leaving of labour market.

It is worth noting that earlier retirements have been used in some countries as ways to secure income and position of older workers, for whose probability of finding job has been very low. Stimulation of early retirement was a particularly popular tool in Central and East European countries in the early years of transformation, which partly explains low levels of labour participation among the older people in these countries, i.e. Poland.

Only recently the debate concerning the viability of the social security and pension system has emerged. The growing share of the older age groups in total population, causing growing burden for the systems, has raised the question of the costs of running the systems in the future. Voices that the systems and labour market institutions need rearrangement can already be heard. The materialisation of these concerns may, however, require quite a couple of years. In some countries active employment policies for the older and restrictions on the security system side have already been implemented.

It is worth nothing that very high participation rates in Romania are not the result of successful policies of this kind. In Romania relatively high proportion of population live from agriculture. Hence, the wide definition of employed (at least one hour of work in the reference week – can be unpaid for the family household) results in the fairly high labour force participation rates.

The comprehensive study of the differentiation of the labour force activity among the older workers can be found in Vlasblom and Nekkers (2001).

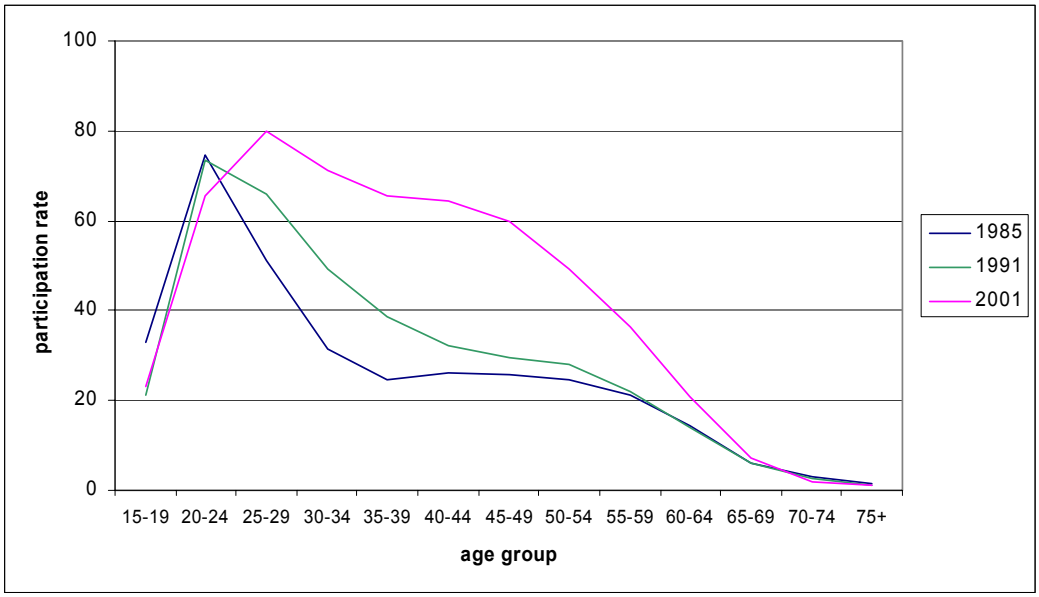
5.2. Changes in female labour force participation rates in Europe over the period 1985-2002

In the last decades a rapid change has taken place on the labour market. As it was shown in the previous section males had their share in this process, but most of this change was due to women. Evolution in life patterns and in labour market settings in reference to women was accompanied by increase of their economic activity. In many countries the increased activity of women reached the scale never observed before.

Higher labour force participation concerned mainly women in child-bearing and child-rearing age of 25-49 years. The examination of the evolution of participation patterns might create strong impression that the three patterns of participation discussed in section 3.6 are just consecutive stages. Single peaked pattern was still observed in some countries in the mid-

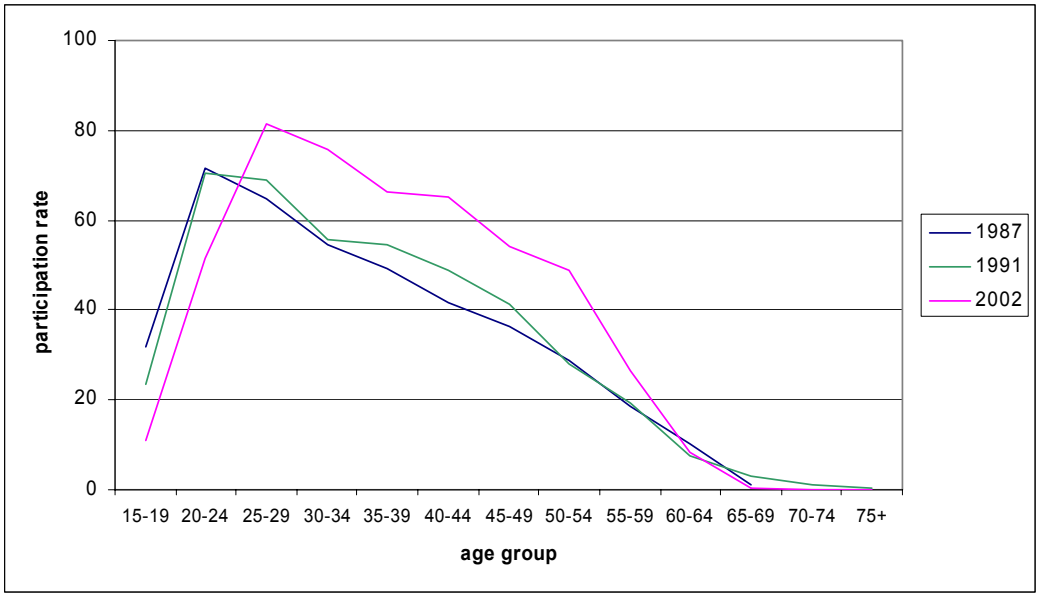
1980s, e.g. Ireland, Luxemburg (see figures 5.5 and 5.6) and Italy. For the last to decades it has slowly evolved to bimodal pattern in all cases, which was a result of returns of women to the market after bearing a child. The process was facilitated by better market opportunities for women, development of institutions making it easier for women to combine motherhood with market work and change of social attitude towards working mothers. In the countries which were characterised by bimodal pattern of women's participation was observed in early and mid-1980s, like Austria and France, the patterns slowly evolved to inverted U shaped patterns. It was possible due to further development of child-care institutions, as well as labour market for women. There are also the countries where labour force participation patterns of women were inverted U shaped already in early or mid 1980s, like Finland, Denmark or Sweden. In these cases patterns of participation remained unchanged with only minor changes in levels of participation rates in certain age groups. Graphic illustration of evolution of participation patterns for Ireland, Luxemburg, Spain and the Netherlands is presented in Figures 5.5-5.8.

Figure 5.5. Female labour force participation patterns in Ireland, 1985-2002



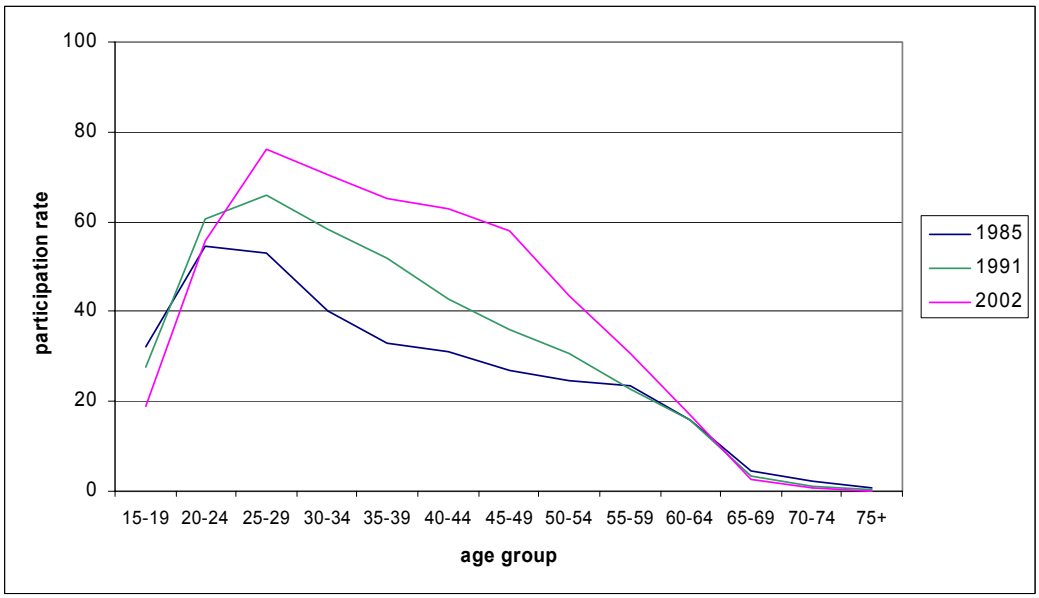
Source: ILO 2004

Figure 5.6. Female labour force participation patterns in Luxemburg, 1987-2002



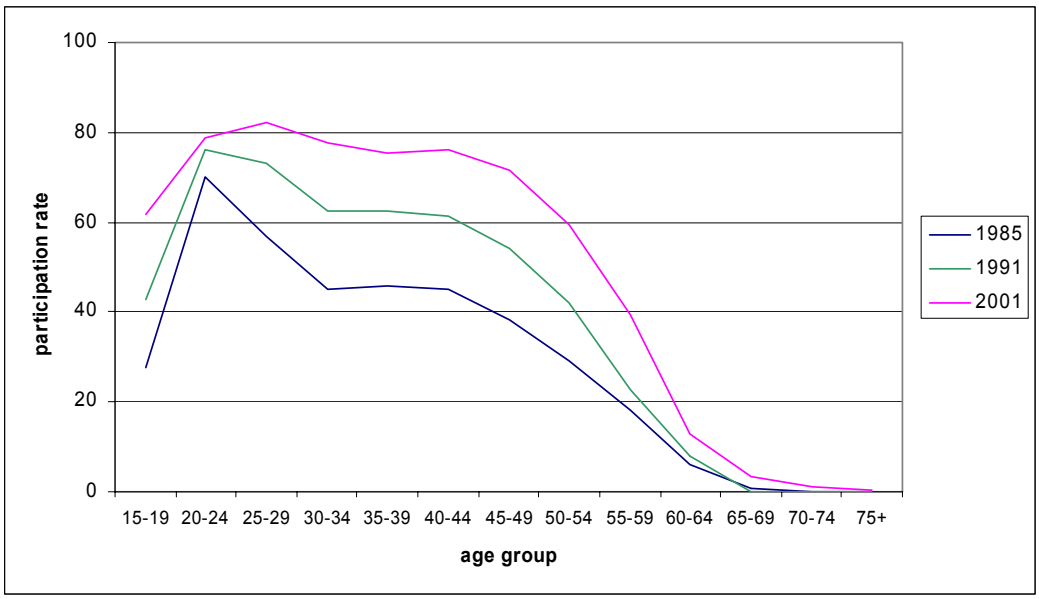
Source: ILO 2004

Figure 5.7. Female labour force participation patterns in Spain, 1985-2002



Source: ILO 2004

Figure 5.8. Female labour force participation patterns in the Netherlands, 1985-2002



Source: ILO 2004

Current female participation rates in the analysed countries offers great variety of patterns. To make presentation of the trends clearer, countries have been divided into three groups, according to the patterns described in section 3.6, as well as their dynamics. The groups are:

- **'high labour force participation' countries** (Austria, Denmark, Germany, Finland, the Netherlands, Norway and Sweden)
- **'low labour force participation' countries** (Belgium, France, Greece, Ireland, Italy, Luxembourg, Portugal, Spain, Switzerland and the UK), and
- **Central and Eastern European Countries** (Bulgaria, Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Romania, Slovak Republic and Slovenia).

For a few countries, like France, Portugal or Switzerland, it was not evident which group they should belong to. In such cases dynamics of participation patterns, similarity of the factors of economic activity to other countries in a given group, as well as expected change were taken to the account. Possible future course of participation was allowed for, as the same groups of countries will be used in formulation labour force participation scenarios for the years 2002-2052. For instance, the Netherlands was included to the group of high participation countries due to its dynamics of change and expected further development of labour participation patterns. France and Portugal were classified as countries with low participation due to factors underlying economic activity in these countries. As far as their levels of participation are concerned, they might as well be classified as countries with high participation. Switzerland and the United Kingdom were also put to low participation group due to levels of participation in the broad middle age groups. The data in 5 year age groups, and hence participation patterns, were not available. There are some signs, however, that they might as well be in the group of countries with high participation of women.

Factors shaping labour force participation of certain groups of women are to large extent the same as for men. Hence, in this section they will not be repeated. Instead, subsections below highlight factors applying exclusively to women and differing their position in the labour market from the male one.

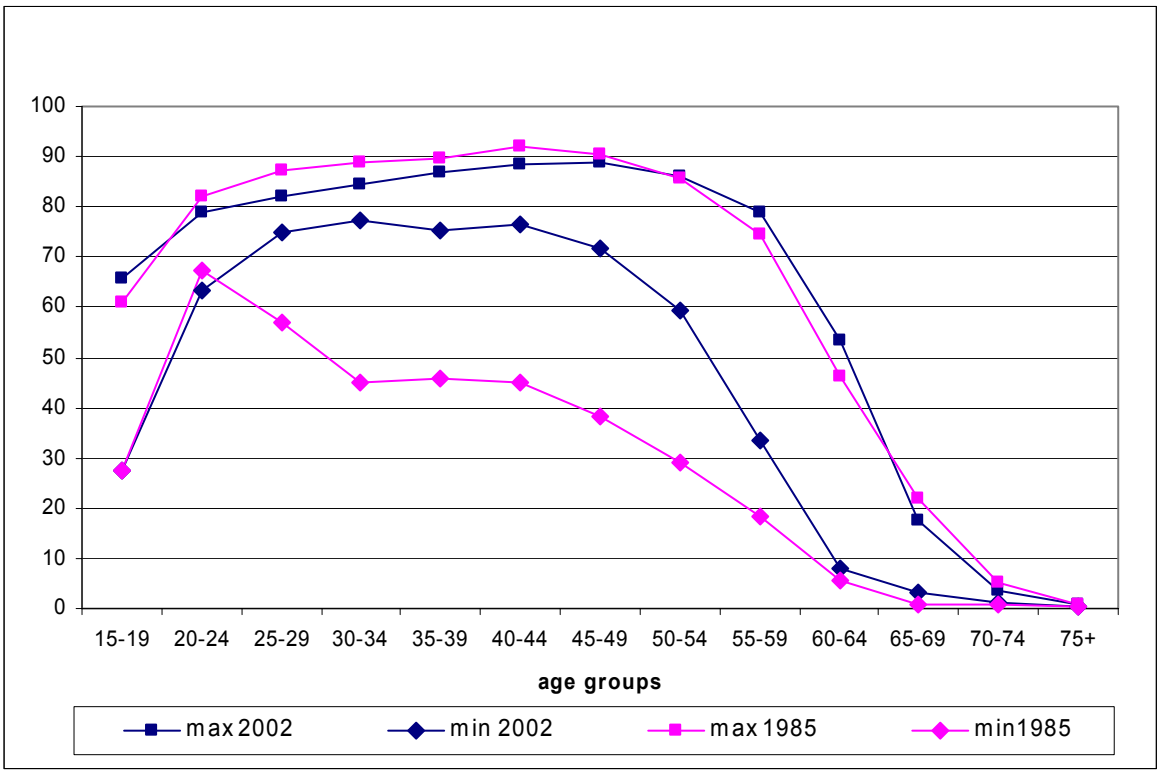
5.2.1. High labour force participation countries

Participation pattern in the countries belonging to this group is inverted U shaped, with high rates. The Netherlands is the only exception, as presented in figure 5.8. Considering the dynamics of change of participation rates there, however, it can be expected that the labour force participation pattern will be inverted U like within the next few years. All countries in this group experience very high participation, in some age groups it is on the male levels. It can be noticed that the levels are also closed to ones observed in Central and Eastern European Countries. However, as factors underlying participation are different in the latter countries, they constitute a separate group.

Within the last fifteen years the share of working women rose in most of countries in this group. It was a result, as in most of countries, of the increase of activity of women in middle and older age. Only Finland and Sweden were the exceptions. In both countries economic activity rates have slightly fallen in most of middle age groups, in Finland also in the older age groups. However, even after the falls in participation in a few groups, both countries still experience the highest participation in most of age groups. Highest increase in economic activity was observed in the Netherlands in all age groups. Selected data concerning past and current levels of participation rates are presented in Table 5.6. Summary illustration of the change is presented on Figure 5.9. Figure 5.9 is constructed in the same way as Figure 5.4. Points in the patterns show the minimum and maximum female participation rates for certain age groups in all countries in a group in a given year.

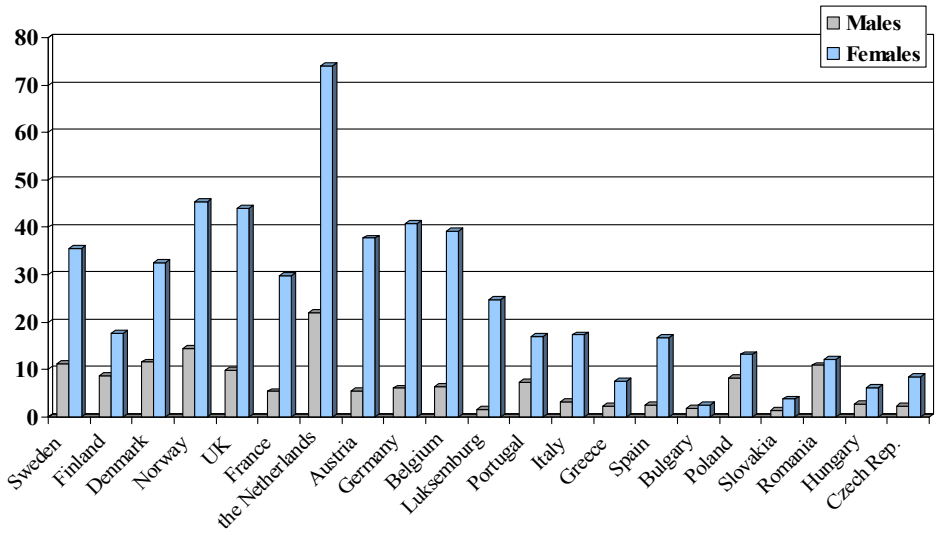
Diverse tendencies were observed for two youngest age groups. In Austria, Finland, Germany and Sweden, despite relatively low economic activity, participation rates in the youngest groups either rose only slightly or even went down. As in the case of men, it follows from growing importance of education. It does not mean, however, that high levels of participation in the youngest age groups in other countries, like Denmark or Norway, contradict the importance of education. For the countries in this group the answer lies in the structure of the labour market. In the countries with the highest levels of participation in the youngest group(s), namely the Netherlands, Norway and Denmark, part-time work, also of the young, is very popular (see Figure 5.10 and Table 5.3). The popularity of flexible forms of employment, which do not preclude education, can explain exceptionally high levels of economic activity in these countries and trends in the Netherlands.

Figure 5.9. Changes of labour force participation rates of females by age groups in Austria, Denmark, Finland, Germany, the Netherlands, Norway and Sweden between 1985 and 2002



Source: ILO 2004

Figure 5.10. Shares of employed on the part-time basis in total population of employed for 21 European countries, 2002.



Source: Kotowska (2004)

Table 5.6. Characteristics of female labour force participation in Austria, Denmark, Finland, Germany, the Netherlands, Norway and Sweden, 1985-2002

Labour force participation rates

	In	15-19	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65-69	70-74	75+
at	2002	33,2	66,0	79,6	80,3	81,6	81,7	78,4	70,2	33,5	8,0	3,5	2,1	0,7
dk	2002	65,6	72,8	79,7	84,4	86,8	87,0	84,9	81,4	71,4	21,2	10,3	:	:
fi	2002	36,9	65,4	80,3	81,6	86,1	88,4	88,9	85,9	71,8	24,3	3,3	1,6	:
de	2002	27,5	66,4	74,8	77,2	78,8	81,6	81,2	73,8	58,2	16,4	4,0	1,8	0,5
nl	2001	61,6	78,7	82,2	77,7	75,4	76,3	71,6	59,5	39,3	12,8	3,4	1,3	0,4
no	2002	54,3	71,1	79,3	82,6	84,6	85,4	83,9	81,5	73,9	51,0	17,6	3,5	:
se	2002	35,5	63,5	78,4	83,7	86,3	88,2	87,2	85,6	79,0	53,4	:	:	:

Percentage change of male participation rates

	Between	15-19	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65-69	70-74	75+
at	2002/1985	-28,9	-5,4	28,0	35,9	36,2	31,4	34,7	38,2	29,8	45,5	94,4	200,0	75,0
dk	2002/1985	7,5	-11,3	-8,3	-5,0	0,5	2,7	5,7	14,5	24,6	-17,2	14,4	:	:
fi	2002/1985	-0,8	-8,4	-3,3	-4,4	-4,0	-1,4	0,2	2,9	19,1	-23,8	-57,7	-11,1	:
de	2002/1995	-4,2	-6,2	-0,9	4,9	4,4	3,7	7,4	7,0	16,9	50,5	42,9	0,0	-16,7
nl	2001/1985	123,2	12,6	44,2	72,7	63,9	68,8	87,4	104,5	115,9	106,5	385,7	:	:
no	2002/1985	25,7	5,3	10,0	14,1	10,4	7,2	7,2	13,4	21,1	12,6	-19,3	-30,0	:
se	2002/1985	-26,5	-21,9	-10,2	-5,3	-3,3	-4,2	-3,6	0,0	6,2	15,1	:	:	:

Average yearly growth index

	Between	15-19	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65-69	70-74	75+
at	2002/1985	0,980	0,997	1,015	1,018	1,018	1,016	1,018	1,019	1,015	1,022	1,040	1,067	1,033
dk	2002/1985	1,004	0,993	0,995	0,997	1,000	1,002	1,003	1,008	1,013	0,989	1,008	:	:
fi	2002/1985	1,000	0,995	0,998	0,997	0,998	0,999	1,000	1,002	1,010	0,984	0,951	0,993	:
de	2002/1995	0,994	0,991	0,999	1,007	1,006	1,005	1,010	1,010	1,023	1,060	1,052	1,000	0,974
nl	2001/1985	1,051	1,007	1,023	1,035	1,031	1,033	1,040	1,046	1,049	1,046	1,104	:	:
no	2002/1985	1,014	1,003	1,006	1,008	1,006	1,004	1,004	1,007	1,011	1,007	0,987	0,979	:
se	2002/1985	0,982	0,986	0,994	0,997	0,998	0,997	0,998	1,000	1,004	1,008	:	:	:

Source: ILO 2004, own computations

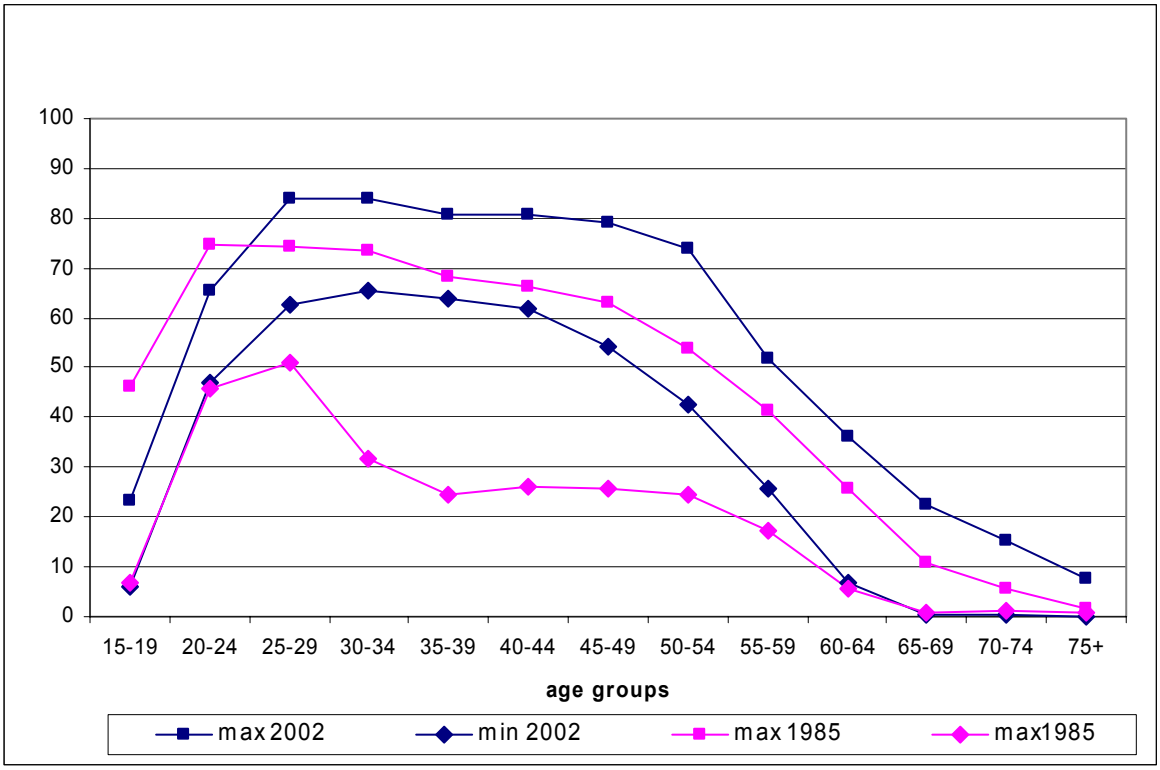
Current levels of economic activity in this group of countries are very high, which is possible thanks to social and public policies which make it possible for women to join career with motherhood. It is facilitated by highly developed child bearing services and social attitude. In these countries high labour force participation, also among women, is socially accepted and supported. It is also noteworthy that in all of these countries, except for Austria and Germany, high economic activity is accompanied by relatively high fertility (compare with Bijak 2004). It does not mean that correlation between participation and fertility has changed its sign. Within the countries it is still negative. Cross country comparisons, especially with low participation countries, prove, however, that high fertility does not exclude high labour market activity of women. Discussion on the correlation between fertility and labour participation rates can be found in Kögel (2004) and Engelhardt and Prskawetz (2004).

5.2.2. Low labour force participation countries

For most of countries with low economic activity, pattern of participation resembles the bimodal pattern described in section 3.6. Patterns of labour participation in some countries, like Greece, Italy, Luxemburg and Spain, seem to have just evolved from single peaked

pattern. For all countries in the group, participation rates start from relatively low levels in the youngest groups. Then, they go up rapidly with age to reach their maxima in the age group of 25-29 or 30-34 and steadily fall to zero starting from the age of 35 - 39. In the age group of 45-49 there is characteristic slow down in falls, which disappears in the early fifties. Summary illustration of the change is presented on Figure 5.11, which shows the minimum and maximum female participation rates for certain age groups in all countries in a group in a given year.

Figure 5.11. Changes of labour force participation rates of females by age groups in Belgium, France, Greece, Ireland, Italy, Luxemburg, Portugal, Spain, Switzerland and the United Kingdom between 1985 and 2002



Source: ILO 2004

In all of the countries in this group labour force participation rates have risen in all middle age groups (25-54) for the last 15 years. The greatest increase was observed in Ireland in all middle age groups. In the age groups 30-49, labour force participation rates have more than doubled; the rates have risen by more than 5% a year on average between 1985 and 2002. The smallest increase was reported in France in the age groups 25-44 and Greece in age groups 45-54. In the year 2002 highest economic activity in the middle age groups was observed in France, Belgium and Portugal, while the lowest in Italy, Spain and Greece. Selected data concerning past and current levels of participation rates are presented in Table 5.7.

Contrary to the middle age groups, economic activity in the young age groups has generally declined, with age groups 15-19 in Belgium, and 20-24 in Greece and Spain being the

exceptions. Despite slight increase of participation rate, 18.8%, in age group 15-19 in Belgium between 1981 and 2002, economic activity in this age group, 8.2%, was the second lowest in the group of countries with low participation. In 2002, lowest economic activity in the youngest age groups was observed in France, while the highest was reported by Ireland. As in the case of men, economic activity of the older age groups, as well as its change are difficult due to availability of the data. The only issue worth pointing at is exceptionally high economic activity of older women in Portugal. Their participation rates, especially of women in post-retirement age, are one of the highest in all analysed countries.

Table 5.7. Characteristics of female labour force participation in Belgium, France, Greece, Ireland, Italy, Luxemburg, Portugal, Spain, Switzerland and the United Kingdom, 1985-2002

Labour force participation rates

	In	15-19	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65-69	70-74	75+
be	2002	8,2	55,0	81,9	81,4	76,5	74,7	68,0	51,0	28,5	6,8	1,2	0,5	:
fr	2000	5,9	46,9	79,3	77,9	79,2	80,6	79,3	73,8	52,0	13,5	2,5	0,5	0,3
gr	2001	10,9	53,5	71,7	69,5	66,6	62,3	55,5	42,5	29,0	19,2	6,1	1,8	0,5
ie	2001	23,1	65,6	80,1	71,3	65,7	64,4	59,9	49,1	36,3	20,7	7,1	2,0	1,1
it	2001	14,0	48,4	62,8	65,4	63,7	61,8	56,4	43,7	25,8	8,7	2,7	1,4	1,0
lu	2002	10,8	51,5	81,5	75,8	66,4	65,3	54,2	48,7	26,6	8,4	0,4	:	:
pt	2002	20,5	60,6	83,9	84,1	80,6	78,3	74,6	66,5	50,7	36,2	22,4	15,4	7,5
es	2002	18,9	55,7	76,1	70,6	65,1	62,9	57,8	43,7	30,6	17,1	2,5	0,6	0,1
ch	1999	:	:	:	:	:	:	:	:	:	:	:	:	:
uk	2002	:	:	:	:	:	:	:	:	:	:	:	:	:

Percentage change of male participation rates

	Between	15-19	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65-69	70-74	75+
be	2002/1981	18,8	-22,6	11,7	29,4	40,4	64,5	78,0	66,1	64,7	19,3	20,0	:	:
fr	2000/1985	-56,0	-28,4	6,7	13,1	15,8	21,6	25,7	37,2	25,3	-25,0	-51,9	-70,6	-62,5
gr	2001/1985	-49,5	17,3	40,9	36,5	27,8	33,1	23,6	11,3	-2,0	-11,9	-43,0	-67,3	-54,5
ie	2001/1985	-30,0	-12,2	56,8	125,6	168,2	147,7	134,0	99,6	70,4	42,8	14,5	-37,5	-26,7
it	2001/1985	-45,9	-18,8	7,2	14,9	23,4	34,3	39,6	33,6	24,0	-14,7	-28,9	16,7	:
lu	2002/1981	-75,5	-27,0	40,5	64,4	58,9	77,0	78,9	90,2	32,3	-32,3	-91,8	:	:
pt	2002/1985	-55,5	-8,9	15,2	14,7	18,7	31,2	41,8	42,4	36,3	40,3	198,7	:	:
es	2002/1985	-41,1	2,2	43,6	75,2	97,9	101,6	115,7	77,6	31,3	6,9	-46,8	-71,4	-87,5
ch		:	:	:	:	:	:	:	:	:	:	:	:	:
uk		:	:	:	:	:	:	:	:	:	:	:	:	:

Average yearly growth index

	Between	15-19	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65-69	70-74	75+
be	2002/1981	1,008	0,988	1,005	1,012	1,016	1,024	1,028	1,024	1,024	1,008	1,009	:	:
fr	2000/1985	0,947	0,978	1,004	1,008	1,010	1,013	1,015	1,021	1,015	0,981	0,952	0,922	0,937
gr	2001/1985	0,958	1,010	1,022	1,020	1,015	1,018	1,013	1,007	0,999	0,992	0,965	0,933	0,952
ie	2001/1985	0,978	0,992	1,028	1,052	1,064	1,058	1,055	1,044	1,034	1,022	1,009	0,971	0,981
it	2001/1985	0,962	0,987	1,004	1,009	1,013	1,019	1,021	1,018	1,014	0,990	0,979	1,010	:
lu	2002/1981	0,935	0,985	1,016	1,024	1,022	1,028	1,028	1,031	1,013	0,982	0,888	:	:
pt	2002/1985	0,953	0,995	1,008	1,008	1,010	1,016	1,021	1,021	1,018	1,020	1,066	:	:
es	2002/1985	0,969	1,001	1,022	1,034	1,041	1,042	1,046	1,034	1,016	1,004	0,964	0,929	0,885
ch		:	:	:	:	:	:	:	:	:	:	:	:	:
uk		:	:	:	:	:	:	:	:	:	:	:	:	:

Source: ILO 2004, own computations

This group gathers almost exclusively countries in which public or market institutions do not support any special help for mothers to participate in the labour market. In these countries the family model is fairly traditional and potential help to women should be provided within the family.

It is also remarkable in these countries that very low levels of participation in these countries (especially Italy and Greece) are accompanied with very low fertility.

5.2.3. Central and Eastern European Countries

Central and Eastern European Countries are distinct from the countries in the groups above for several reasons. Historically, the participation of women in these countries was not the effect of naturally evolving social attitudes, habits and labour market institutions. Instead, they were strongly influenced by state decisions concerning necessary labour supply (Kocot-Górecka 2004). In the times of labour shortages state encouraged model of partnership and equal position of men and women in the labour market. It was supported by development of nurseries, kindergartens and other institutions to make work easier for mothers. The times of labour excess were also time of proclaimed motherhood which could not be joined with economic activity. It was accompanied by reducing posts occupied by women, and difficulties with getting employed for them (more on this, in the Polish context, can be found in Kocot-Górecka 2004). Hence, female labour force participation rates in these countries, till 1990s, were governed by other factors than in the rest of the countries in the study.

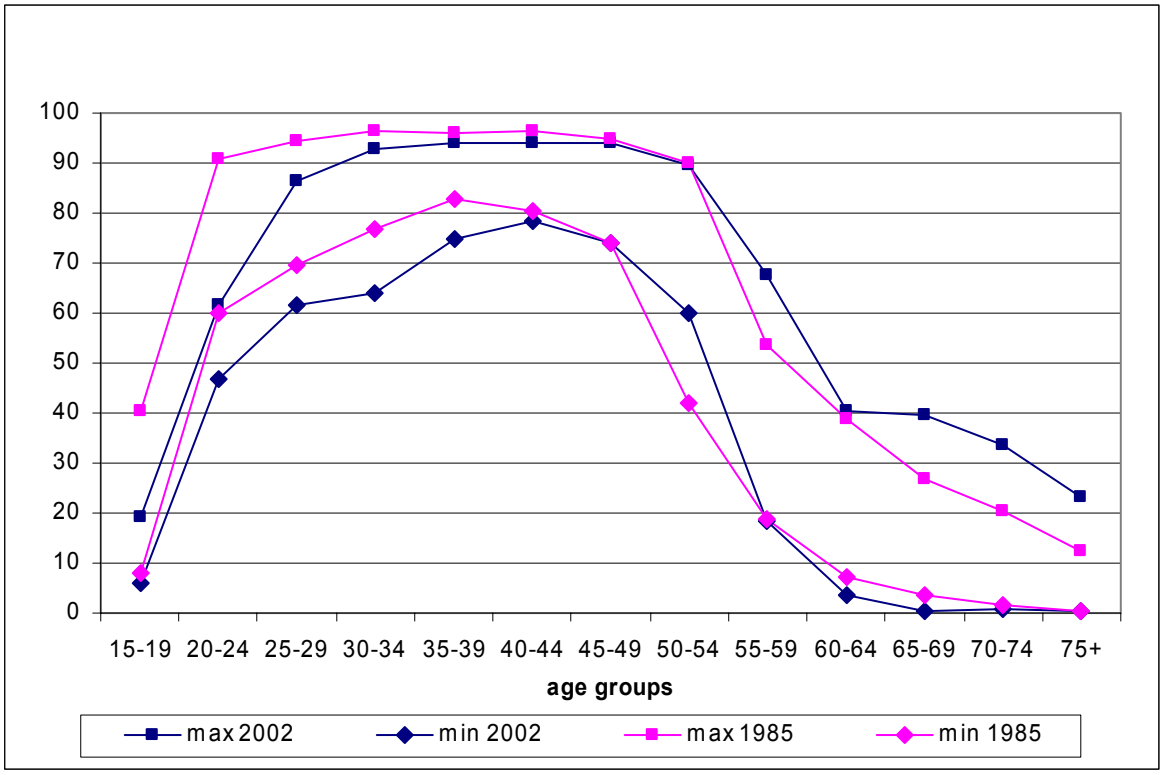
Accessibility and quality of data are other issues which make analysis of trends in these countries difficult. For most of the countries in this group only census data are available for 1980s and early 1990s. As the definitions used to produce census data are different than in LFS, the data are produced only once every several years and their quality may raise doubts, census data are poor basis for analysis. Data from LFS for these countries are only available for 1990s, so there are too few observations to talk about trends. In addition, the data for some countries, as for example for Lithuania, show unlikely variability, which may suggest either change in definitions or very poor quality.

In 2002 female participation rates were relatively high. In middle age groups they were comparable to high participation countries. Highest activity in the middle age groups was observed in Lithuania, Slovenia and Czech Republic, the lowest was observed in Hungary and Romania. In the young age groups economic activity was relatively low, and, hence, more similar to low participation countries. Lowest participation in the youngest age group was observed in Estonia and Hungary, around 6%, while the highest in Romania 19.3%. In the age groups 20-24 respective numbers were: 46.7% in Bulgaria and 61,6% in Slovak Republic. Economic activity of older women was relatively low in East and Central European countries, except for Romania, where it was very high. Labour force participation rates of women aged 55 years and more in Romania are highest among all analysed countries. Lowest economic

activity in the group of East and Central European countries was observed in the Slovak Republic.

For the last few years labour activity of women in East and Central European countries changed only slightly in comparison to other countries in the study, especially in the middle age groups. Summary illustration of the change is presented on Figure 5.12. Again, the figure shows the minimum and maximum female participation rates for certain age groups in all countries in this group in a given year. It is worth noting that, due to lack of LFS data for mid-1980s, data used in the figure are either census data for early and mid-1990s or LFS data for mid 1990s. Economic activity of women in the middle age groups have generally fallen or remained about constant in all countries, except for Lithuania and Slovenia. Greater change was observed in the young age groups, where economic activity has fallen. Considerable declines in participation rates have been especially in the youngest age group, with Bulgaria and Slovenia being the only exceptions. In the older age groups of women economic activity has generally fallen, except for Estonia, Latvia and Slovenia.

Figure 5.12. Changes of labour force participation rates of females by age groups in Belgium, Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Romania, Slovak Republic and Slovenia between 1985 and 2002



Source: ILO 2004

Female participation rates reported in the 1990s and in the current decade have been strongly influenced by difficult situation in the labour markets in these countries. Transformation has brought changes of labour demand (in terms of both structure and skills/quality) and employment conditions. The changes resulted in redundancy of very many workers and in,

firstly, unemployment, and then, in many cases, discouragement. This may explain the falls in participation for almost all age groups in many countries. These falls are, however, moderate in comparison to what could be expected. High levels of participation in these countries, even after their reductions in recent years, are the result of very strong income effect active there. The structural change in the labour market, causing high unemployment, deprived many households of their income. The change, together with inflation, also reduced incomes of many of those who did not lose their jobs. These factors forced women to market activity. This applied in particular to women from households in which the head has poor skills and/or is unemployed. Participation rates and indexes of their change are presented in Table 5.8.

Table 5.8. Characteristics of female labour force participation in 10 East and Central European countries, 1985-2002

Labour force participation rates

	In	15-19	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65-69	70-74	75+
bg	2002	11,4	46,7	69,6	79,1	84,6	84,0	83,5	73,8	35,7	7,7	3,8	0,8	:
cz	2002	8,6	57,7	64,5	73,9	87,7	91,2	91,4	84,2	37,7	13,1	5,2	2,4	0,3
ee	2002	6,4	51,4	71,9	72,9	80,1	89,8	87,4	81,6	67,6	35,4	18,8	9,7	:
hu	2002	6,1	49,1	61,7	64,2	74,8	78,6	74,9	66,2	29,0	6,0	2,1	1,0	:
lv	2002	11,5	58,9	72,3	82,1	83,0	87,2	85,9	82,8	56,9	23,8	11,5	7,2	:
lt	2000	13,3	60,2	85,4	90,2	93,9	94,1	94,0	89,8	45,3	17,4	7,4	1,8	
pl	2002	7,6	53,8	74,8	79,2	82,9	83,7	77,4	60,2	31,7	13,9	8,2	5,4	1,7
ro	2001	19,3	52,5	73,7	78,5	80,7	79,8	74,0	60,7	46,0	40,6	39,5	33,5	23,3
sk	2002	14,6	61,6	72,5	80,5	88,2	93,2	90,2	79,6	18,6	3,7	0,5	:	:
si	2002	10,8	52,8	86,3	92,9	92,4	90,1	87,8	63,2	20,0	10,7	9,6	6,0	3,8

Percentage change of male participation rates

	Between	15-19	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65-69	70-74	75+
bg	2002/1985	40,7	:	:	-17,9	-10,8	-11,2	-8,2	-11,7	11,6	-53,3	-59,1	-77,8	:
cz	2002/1996	-62,4	-1,5	5,2	-3,7	0,7	-0,2	0,6	3,7	8,3	-7,1	57,6	:	:
ee	2002/1995	-74,0	-11,4	-1,0	-11,2	-8,4	-2,5	-3,7	-1,8	47,9	58,7	51,6	-11,8	:
hu	2002/1994	-64,7	-9,9	9,4	-12,2	-12,1	0,8	0,8	18,2	108,6	-10,4	-60,4	-52,4	:
lv	2002/1996	-42,8	-3,1	-7,1	3,8	-3,5	-2,9	-1,0	5,7	56,3	30,8	13,9	89,5	:
lt	2000/1996	-33,5	-15,3	2,4	2,7	0,6	2,0	4,3	1,0	-28,5	-65,3	-81,9	-95,1	:
pl	2002/1992	-62,0	-19,0	4,9	0,3	-3,5	-2,7	-4,3	-2,1	-6,8	-38,8	-21,9	:	:
ro	2001/1995	-36,3	-17,8	-3,7	-3,2	-5,2	-4,4	-10,2	-14,9	-7,1	-8,1	-4,4	-6,4	18,9
sk	2002/1993	-52,4	-11,9	-12,3	-10,0	-4,3	3,4	1,6	23,2	21,6	-5,1	-58,3	:	:
si	2002/1993	61,2	-4,2	4,1	5,8	8,7	5,4	19,8	67,6	-1,5	25,9	65,5	100,0	:

Average yearly growth index

	Between	15-19	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65-69	70-74	75+
bg	2002/1985	1,020	0,962	:	0,988	0,993	0,993	0,995	0,993	1,006	0,956	0,949	0,915	:
cz	2002/1996	0,849	0,997	1,009	0,994	1,001	1,000	1,001	1,006	1,013	1,000	1,100	:	:
ee	2002/1995	0,825	0,983	0,999	0,983	0,988	0,996	0,995	0,997	1,058	1,100	1,100	0,982	:
hu	2002/1994	0,878	0,987	1,011	0,984	0,984	1,001	1,001	1,021	1,096	1,000	0,900	0,911	:
lv	2002/1996	0,911	0,995	0,988	1,006	0,994	0,995	0,998	1,009	1,077	1,000	1,000	1,112	:
lt	2000/1996	0,903	0,959	1,006	1,007	1,002	1,005	1,011	1,003	0,919	0,800	0,700	0,470	:
pl	2002/1992	0,908	0,979	1,005	1,000	0,996	0,997	0,996	0,998	0,993	1,000	1,000	:	:
ro	2001/1995	0,928	0,968	0,994	0,995	0,991	0,992	0,982	0,974	0,988	1,000	1,000	0,989	1,029
sk	2002/1993	0,921	0,986	0,985	0,988	0,995	1,004	1,002	1,023	1,022	1,000	0,900	:	:
si	2002/1993	1,054	0,995	1,004	1,006	1,009	1,006	1,020	1,059	0,998	1,000	1,100	1,080	:

Source: ILO 2004, own computations

Despite the strong income effect affecting practically all age groups there are a few features of economic activity typical of this group. Education influences very strongly the two youngest age groups, and this influence is stronger than in the other groups of countries. In these countries education gives considerable advantage, which attracts many young people. The advantage is especially important in the case of women, whose position on the labour market is traditionally weak. Hence, significant share of women involved in different forms of education, often excluding economic activity, lowers labour force participation in the youngest age groups. The low activity is also facilitated by very common family support until children complete studies and find jobs.

Another characteristic feature can be noticed in the age groups 25-29, 30-34, 35-39. For some countries labour participation for these age groups are significantly lower than for the older middle age groups (e.g. Czech Republic, Estonia, Hungary and Slovakia) and lower than few years ago. This phenomenon can follow from institutional setting in these countries. Till 1990s institutions that were supposed to make it easy for women to join work and motherhood (e.g. child care facilities) were provided by state and usually free. In the early years of transformation many of these facilities have been with drawn. So far, there are few institutional solutions which facilitate work of young mothers. In addition, those existing may be too expensive for many households (e.g. nurseries and kindergartens) or unpopular (e.g. part time jobs).

Relatively low participation rates of older women are another characteristic feature of Central and Eastern European countries. As for the rest of countries they are the result of earlier retirement, but the scale of this phenomenon is greater in the post socialist countries, due to structural changes of the labour market in these countries.

6. Scenarios of labour force participation for 27 European countries

Presented scenarios cover the period 2002-2052 and are formulated in terms of the levels of participation rates by sex and 5 year age groups for all countries. There are different scenarios for males and females.

It is worth noting, at the beginning of this section, that the horizon of the projection makes it only an anticipative tool. For this reason, certain levels and their development should be treated as indication of the most probable directions of the development of the labour force. In section 6.1 some issues relevant to the future modification of labour force participation rates are discussed. More detailed assumptions concerning certain age groups are presented in section 6.2 and 6.3.

6.1. Some consideration for the assumptions on the future change of labour force participation rates

It can be expected that in the coming decades the process of population ageing will progress which will be accompanied by population decline in many countries. The intensity of the process, will vary from country to country.

Population ageing, which also means a change in proportions of certain age groups in the population, will lead to either relative or in some cases absolute decline in the working age population and increase in the share of the older workers (55+) in the labour force, provided that the activity rates in all age groups remain unchanged. This, in turn, unless there is a change in patterns of economic activity and institutional settings, may have significant consequences for social security and pension systems as well as the labour market. The relative decline of the number of younger workers shall gradually lead to labour shortages, especially when skilled labour force is concerned. This shall result in more flexible forms and conditions of employment and attract to the market a part of hitherto inactive, especially from the older age groups, students and women.

Consequences for social security and pension system shall stem from the change of the setting they operate in. Growing proportions of older age groups, entailing also changes in the groups of working and not-working, reduces significantly the system's contributors to beneficiaries ratio threatening the viability of the systems. As the demographic phenomena can be expected to advance in the coming years, older people, constituting the ever growing part of population, become the increasing challenge for social institutions responsible for providing social care and non-employment income. This shall lead to serious changes in the rules governing social security systems, to support those eligible for benefits and to prevent system misuse by those who are not. It can be assumed that removing the loopholes in the system

rules (discussed in section 2.1) shall reverse incentives (encouraging longer economic activity and rewarding additional years of work) and result in higher fraction of the active in the older age groups.

It can be expected that continuous technological progress, creating demand for highly skilled labour, will further increase return from education. Resulting demand for schooling may negatively influence labour force participation rates in two youngest age groups (15-19 and 20-24).

The influence of fertility on the economic activity of women is expected to decline, which should positively influence labour participation of women. The fertility is assumed to remain on relatively low levels, it has achieved recently, or may slightly increase (see Bijak 2004). It should not, however, depress labour force participation of women. Instead, economic activity of women should go up due to high opportunity costs and further development of institutions that facilitate combining motherhood with professional career.

While setting the assumptions of the changes of labour force participation rates it is assumed that the economies of the post-socialist countries will become similar to the economies of the other countries under study. For this reason, for men one set of target values or pattern of participation has been used. For women' the pattern for CEE countries has been slightly modified in comparison to the pattern in other countries, because the CEE pattern resembles the pattern for countries with high participation for the middle age groups and pattern of countries with low participation for three youngest age groups. Therefore it was necessary to create a pattern being a combination of patterns of the remaining two groups of countries. The CEE countries are expected to develop in the same direction as the rest with only different pace of adjustment.

Finally, the assumption on the convergence of labour force participation patterns in the countries under study is the cornerstone for the scenarios of changes. This process should follow from progressing economic integration, and be greatly facilitated by information flow which enables transmission of culture and life style patterns.

In the scenarios the convergence of the countries' labour force participation patterns to one, arbitrary chosen model pattern for all countries is assumed. Different patterns have been established for males and females; some geographic variation of patterns of women's activity has also been accounted for.

6.2.Scenario for male labour force participation in 27 European countries over the period 2002 - 2052

The projections for all age groups of men have been made using the same methodology. Firstly, based on the past values of participation rates, the linear trends were established for each age group, sex and country. Then, target values, which are defined as most likely levels of labour force participation in long term, for all age groups has been set. They are presented in the Tables 7 and 8. The justification of these levels is presented below together with the discussion of the importance of specific assumptions for certain age groups. For most countries target values for particular age groups are the same. Only in the case of a few countries target values have been modified to take into account country specific factors.

The projected values of labour force participation for each age group within each country are the outcome of the historical trend and target value. The influence of the trend is most significant in the first years of projection. It gradually decreases with time. The impact of the target value in the first years of projection is hardly visible (less then 0,1%), but it gradually goes up, to dominate the trend about the year 2025. The target values for males are presented in Table 6.1, their justification in subsequent sections.

Table 6.1. Target values of male participation rates for specific age groups, percents

Age group	15-19	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65-69	70-74	75+
Target value	40	75	93	95	95	95	95	90	70	40	25	15	5

Source: Own calculations.

6.2.1. Middle age groups (25-54)

It is assumed that from 2002 for the next several of years the participation rates of man in the middle age groups will generally continue to fall (in most cases between 0% to 4%). After that period they are expected to slowly converge to the target values, which, are assumed to be 93% for age group 25-29, 95% for all 5 year age group in the range 30-49, and 90% for the age group 50-54 (Table 6.1).

The expected initial decline of rates is a continuation of the trends observed for the last fifteen years. It can be expected that the underlying factors will still be active in this period. Their influence, however, will gradually decline to be dominated by forces attracting prime age men to the market. These forces will come from both demand and supply side of the market.

The arbitrarily set target values assume at least 5% as a long term fraction of inactive prime working age men, which accounts for the fact that men will not be the only bread-winner in many households. It also contains a margin for high occupational mobility of workers enforced by the more demanding labour market (e.g. allowing for a leave for training).

Additonal 2 percentage points of inactivity in the age group 25-29 are allowed mainly for education. This small margin was taken into the account, as it is noticeable in the male participation pattern for many countries under study (see section 5.1.1). It is rather symbolic, but it can be justified by the fact that statistically in this age group people already have accomplished the years of schooling they wanted. And even if not, the kind of education they may receive in this age usually do not preclude market activity. In some countries slower pace of adjustment in this group allows for expected continued problems with the labour market entrances of the young.

The other feature of the male participation pattern is a slight decline of the participation in the age group 50-54, preceding even steeper drops for the older age groups. It was included to allow for the variety of forms of pre-retirement inactivity ranging from the disabilities and related inability to work, to leisure postponed in the life cycle or unwillingness to work. The latter applies first of all to persons whose market earnings are not high - at least not high enough to constitute opportunity cost sufficient to keep them on the market. This factor seems to be more influential for older age groups. In the face of the current values of participation in this age group the target value is very optimistic. It follows, however, from the expectation that the social and pension systems' rules will be stricter for those retiring earlier, especially more than 10 years before the current official retirement ages in most of countries, and that the factors attracting men to the market will be still effective for this age group.

The chosen target values, particularly for men between 25 and 49, may seem to be underestimated especially for the countries with the tradition of high participation of men, like Austria, Greece or France (see Table 5.1). The developments of male economic activity in Norway or Sweden in the last decades, may, however, suggest that decline of male participation rates in the countries with high participation of men is possible and likely (Table 5.1).

6.2.2. Young age groups (15-24)

Like for the middle age groups, participation rates for young age groups are expected initially to fall. It is assumed that up to 2010 drops in levels of young groups' participation rates shall not exceed 13 percentage points, for most of countries being smaller then 6 points. When comparing the two young age groups, assumed falls are smaller for the age group 20-24 both in relative and absolute terms. After the year 2010 gradual convergence to target values is expected. Again, target values (40% for age group 15-19 and 75% for age group 20-24; Table 6.1) are supposed to be long term stable levels of young males' participation.

For many countries assumed target values will require considerable increase of economic activity of the young, particularly in the youngest age group. For most countries of Southern as well as of East and Central Europe increase of labour force participation rate in the age group 15-19 will exceed 30 points between 2015 and 2052. For the age group 20-24 assumed

target values are closer to the rates achieved in 2002 and, hence, will require relatively smaller change.

There are only three exceptions made from the rule described above, namely with respect to the participation rates in the age group 15-19 in Denmark and the Netherlands and Switzerland. Participation rate of the youngest group in Denmark has been over 64% for the last 15 years. It is assumed to remain about this level, slowly converging to the level of 60% in the last years, mainly due to increase in engagement in education. In the Netherlands participation rate of the youngest group has skyrocketed for the last several years, which is likely to be result of great popularity of the part-time employment among the young. Starting from the level of 25.2% in 1985, the participation rate reached 61.5% in 2001. It is expected to further grow, according to the trend, for the next 10 years and then stabilise. Finally, due to education as a factor competing with employment, it shall start to converge slowly to the level of 60%, like in the case of Denmark. In Switzerland, labour force participation rate in the youngest age group is expected to converge to the level of 50%.

The assumed levels of participation in these groups may seem to be high, particularly for age group 15-19. This concerns in particular the countries where participation of young males is on relatively low and further declines are expected. However, such the high target values rely heavily on two of the assumptions, which justify their levels. Population ageing, by its influence on the labour market and social security systems will lead to labour shortages and, also to better employment conditions (i.e. flexible work schedules, part time employment). It is assumed for the next two decades that the work environment will be friendly enough to attract more people to the market, especially that it will be easier to combine education with the market work. Finally, it is worth noting that in the countries for which the target values seem to be high, far going changes are assumed only after the year 2030.

It is also worth noting that the, seemingly high, target values give also an upper bound to the labour force participation rates in some countries, like Austria and Norway. This is because increased engagement in education. It can be expected that progressing technologies and growingly service based economies will create demand for new skills and generally skilled labour force. Division of the labour market into primary and secondary markets will progress. Since it is only various skills that may give way to the primary one, considerably greater share of people shall engage in various kinds of schooling and training programs. As the model of life cycle allocation of time predicts, the very beginning of individual's professional carrier is optimal for additional (apart from compulsory) years of education (although new demanding market may require it some time later during the carrier as well). For this reason lowered participation should be particularly visible for the youngest age groups.

The bound of growth of young males' participation rates can be also constituted by problems with market entrance. These problems, together with related discouragement, do lower current

levels of participation, and are expected to also influence long term ones. They influence shall be alleviated by improving employment conditions though.

6.2.3. Older age groups (55+)

Participation rates of the oldest age groups show the greatest variety of all groups, part of which being a result of a number of groups in this category. In the coming 5-10 years the slight declines of the rates are expected in general. Despite differences between countries, it is assumed that the declines should not exceed 10 percentage points for age groups 55-59 and 60-64, 8 points for 65-69, 5 points for 70-74 and 3 for 75+, for majority of age groups in all countries being less than three points. After the year 2010 participation rates should stabilise, to start to converge to target values (listed in Table 6.1). For most of countries it will mean significant increase of participation in all age groups.

In the countries where participation rates have been falling in the recent years, like in the case of the young groups, continuation of this trend is assumed. This is to allow for country specific factors influencing levels of participation and for the fact that the necessary changes may take several years. Alike in the case of the young age groups, it is assumed that radical adjustments of participation rates do not appear before the year 2030.

In the case of some countries, like Norway or Sweden, where participation rates are already higher then the assumed target values, they have been modified upwards, mainly for age groups 55-59 and 60-64. It was to account for already existing institutions facilitating employment of older workers in these countries. This reasoning does not apply, however, to countries like Romania. In this case, high participation rates follow from relatively high share of agriculture in the structure of employment in this country[11] and are expected to fall as the structure turns into one typical for developed countries. In Romania upwards adjustment of target values was to account for the longer time needed for economy to change.

For these groups, again, target values may seem to be difficult to achieve. Below we present arguments which made us to think they are reasonable. The start point is also ageing, but in the case of the older age groups more stress is put on the influence of the social security and pension systems. As ageing societies endanger the systems' viability, considerable steps are expected to unburden the systems. Such steps should include preventing from misuse of the systems by the ineligible persons and creating institutional incentives to greater economic activity. Eliminating the possibility of easy accessing the systems for unjustified cases will be the most important of these steps. Institutional incentives, such as connecting pension benefits to individual contributions, should be built in the redesigned system rules. They may also be seen in employment regulations making employment of the older workers more favourable.

[11] Definition of working person includes persons helping with no pay in the family farm, which usually generates high participation rates in the countries, where the share of agriculture in the employment structure is high and/or where the share of population living in the countryside is high.

Employment of the older people should also be facilitated by the demand side. As the older workers are to constitute ever growing share of the declining labour force, employers will have to start to perceive them as the labour force 'of standard value'. This should be visible in better possibilities of employment for older workers, improved work conditions and life time on the job training.

Such actions, altogether, should abolish, or at least significantly reduce one of the most important channels of outflow of older people to inactivity on one hand, and attract them to economic activity on the other. It is worth noting that wise, far-sighted social policy underlie both assumptions, i.e. concerning social security systems and the labour.

6.2.4. Total population of men

To see a more complete picture of the projected economic activity of men it is worth to examine the influence of the above assumptions for labour force participation rate of total population of men. Respective rates are presented in Table 6.2 (results are based on the population projections of the Central European Forum for Migration Research, see Bijak 2004; Bijak et al. 2004). Projected labour force participation rates for population 15+ are presented in the Annex.

It is noticeable that between 2002 and 2052 the share of the economically active men in total population goes down in most of countries. Only in Belgium, Bulgaria, France and Hungary it slightly rises, in first three countries being still relatively low. There will also be the periods of temporary increase of economic activity in several cases, which is marked with shaded area in Table 6.2. However, they do not change the overall tendency. The scale and the pace of this process differ between countries.

The assumption that patterns of labour participation of all countries converge to one pattern, with minor exceptions in several cases, results in smaller differences in economic activity of total population of men in the year 2052. In 2002 economic activity of men varied between 46.9% in Bulgaria and 63.5% in Switzerland. Respective numbers in 2052 are: 46.6% in Italy and Spain and 55.4% in Switzerland. The general decline of economic activity is to smaller extent a result of the assumed slight decline of participation rates for middle age group. Most of the decline comes from population ageing, i.e. growing shares of older people in the total population. Assumed increase of economic activity in the older age groups, although very optimistic in many cases, is not sufficient to make up for demographic trends.

In most of cases, countries with the highest participation rates for total population in 2052 are also the countries where labour participation rates for older groups have been modified up in comparison to similar countries, like Switzerland, Portugal and Romania. Such sensitivity to changes of the rates can demonstrate potential effects of active employment policies targeted in the older age groups.

Table 6.2. Observed (2002) and projected labour force participation rates for total population in 27 European countries - males

	2002	2007	2012	2017	2022	2027	2032	2037	2042	2047	2052
AT	55,9	54,9	54,5	53,6	52,0	50,4	49,7	49,5	49,4	49,0	48,6
BE	49,7	49,9	49,6	48,9	48,1	47,7	47,9	48,7	49,4	49,8	**49,8**
BG	46,9	48,0	48,3	47,9	47,7	48,1	48,7	49,0	49,0	48,4	**47,7**
CH	63,5	64,2	64,2	63,8	62,6	60,9	59,1	58,0	57,1	56,3	55,4
CZ	57,8	56,7	56,2	55,6	55,2	54,7	54,2	52,9	51,6	50,2	48,9
DE	56,4	56,1	55,9	55,1	53,8	52,1	51,0	50,6	50,2	49,7	49,1
DK	58,6	56,7	55,9	55,3	54,3	52,9	51,8	51,1	51,0	51,1	50,9
EE	53,5	54,3	55,5	55,2	54,6	54,3	54,6	54,5	53,7	52,4	51,1
ES	56,2	55,5	55,4	54,8	53,9	52,7	51,3	49,8	48,3	47,3	46,6
FI	54,2	51,3	49,7	48,3	47,3	46,8	47,1	47,8	48,4	48,7	48,5
FR	49,0	47,7	46,4	45,6	45,1	45,3	46,1	47,4	48,4	49,0	**49,3**
GR	54,5	55,3	55,6	55,3	54,7	53,8	52,6	51,2	49,7	48,4	47,4
HU	47,7	48,3	48,4	48,5	48,9	49,8	50,6	51,3	51,7	51,6	**51,0**
IE	53,9	53,9	53,9	53,7	53,6	53,6	53,6	53,3	52,7	51,9	51,1
IT	50,8	49,4	48,7	48,0	47,2	46,6	46,3	46,3	46,5	46,6	46,6
LT	54,5	56,9	59,0	59,7	59,0	57,6	56,5	55,5	54,1	52,1	50,0
LU	52,2	51,7	51,8	51,8	51,3	50,6	50,5	50,8	51,1	51,2	51,1
LV	53,9	53,5	55,0	55,1	54,4	54,0	54,2	54,3	53,6	52,0	50,6
NL	57,7	57,2	56,1	55,1	53,7	52,3	51,5	51,3	51,3	51,2	51,0
NO	56,7	55,8	55,2	54,5	53,5	52,2	51,2	50,6	50,6	50,6	50,3
PL	50,5	50,8	51,2	50,9	50,4	50,1	50,3	50,6	50,3	49,4	48,2
PT	58,8	58,7	58,3	57,8	57,4	57,0	56,3	55,3	54,4	53,7	53,2
RO	56,2	55,3	55,5	55,7	56,0	56,1	56,2	55,9	55,1	53,8	52,8
SE	53,6	50,8	50,2	49,9	49,5	49,1	49,1	49,7	50,2	50,4	50,1
SI	54,6	54,8	54,1	53,1	52,3	51,7	51,4	51,0	50,4	49,7	49,0
SK	55,0	56,2	56,6	56,0	55,4	55,0	54,8	54,1	53,0	51,7	50,4
UK	56,6	56,8	56,9	56,4	55,5	54,2	52,8	51,9	51,3	50,9	50,4

Source: ILO 2004, own computations

The labour force participation rates for total population of men reveals also great importance of the population structure, which determines relative importance of certain age group. In the case of males the influence of demographic developments is even more noticeable than for women. As the target values for men have been hardly modified between countries, the differences in participation in the year 2052 follow mainly from initial demographic structure and its developments. The share of economically active is greater in the countries with relatively high projected TFR, like Ireland and the Netherlands, and/or with relatively young population, like Estonia and Hungary. The case of Switzerland, the country with relatively old population and lowest TFR, proves that sufficiently high participation can, to large extent,

make up for negative demographic trends. The effects of demographic trends are even more striking when we look at the labour participation rate for total population computed with constant age specific participation rates (presented in part A.2 of the Annex).

6.3. Scenarios of female labour force participation in 27 European countries over the period 2002 - 2052

The scenarios of female labour force participation have been made using the same methodology as for men. For all countries, basing on the observed past trends for 5 year age groups, linear trends for these age groups have been established. To take into account the differences in the historical labour force participation rates three distinguished groups have been defined earlier in the paper:

- Countries with high labour force participation rates (Austria, Denmark, Finland, Germany, The Netherlands, Norway and Sweden),
- Countries with low participation (Belgium, France, Greece, Ireland, Italy, Luxembourg, Portugal, Spain, Switzerland and the United Kingdom), and
- Central and Eastern European countries (Bulgaria, Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Romania, Slovakia and Slovenia).

For each group of countries a set of target values, presented in the Table 6.3, has been assumed.

Table 6.3 Target values of female participation rates for specific age groups

Age group for	15-19	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65-69	70-74	75+
Low participation	30	65	75	80	80	80	80	75	60	40	25	15	5
High participation	40	65	80	85	85	85	85	75	60	40	25	15	5
CEEC	30	65	75	85	85	85	85	75	60	40	25	15	5

Source: Own calculation.

As in the case of males, projected values for specific age groups depend on the observed trend for certain age group and their long term value. The impact of the trend is the greatest in the first projected years and gradually decreases. The influence of the target value at the first years of the projection can hardly be noticed, but it gradually goes up, to dominate the trend about the year 2025.

Although for description of the past trends of female labour participation countries under study have been divided into three groups, it seems to be unnecessary in the case of scenarios. Former differences are going to be still visible in different target values for three groups of

countries, but similarities in factors underlying the future trends are expected to dominate differences. For this reason, results will be presented by wide age groups, the same as in the case of men.

It is worth noting that all factors shaping male labour participation are also crucial for female participation. Hence, all discussion of results for men might as well refer to women (with differences in levels only). Not to repeat the reasoning, issues that have already been discussed in the previous section are going to be only briefly mentioned in this one. Instead, this section will focus on the factors that are essential for female economic activity and have not appeared for men. To organize thinking about these factors, they will be presented as attractors or depressors of women's participation relative to the men.

6.3.1. Young age groups (15-24)

For the next 5-10 years general declines of participation rates can be expected, in the case of some countries reaching 15 percentage points. Then, in accordance with the chosen mechanism, the rates should converge to the target values, for most countries from lower levels. As in the case of men, assumed target values will require significant increase of economic activity in the youngest age group, especially in the group of countries with low participation and of Central and Eastern Europe.

For women target values in the young age groups are smaller than those for men to account for two important factors: education and fertility. Education and its greater meaning in the service based economy have already been discussed. It is only worth stressing at this point that for women schooling and skills are even more important then for men. In the knowledge based market skills acquired during the additional years of schooling may open new possibilities and neutralize the negative influence exerted by gender.

Fertility is also an important factor depressing labour participation in the two youngest age groups, although its importance can be expected to decline with time. Lower levels of females labour force participation may also reflect the reminiscences of the traditional division of labour in the household. These, however, shall have marginal magnitude, and can only be attributed to some of countries.

Due to exceptionally high current levels of female participation in Denmark, Netherlands, Switzerland and the United Kingdom, target values for these countries have been modified upwards.

Declines of participation rates in the first years of projection will be to great extent continuation of the current trends and shall be mainly caused by increased enrollment in education. Fertility in these age groups is expected to decline at that time, so should not additionally depress economic activity. The subsequent shifts up (for most countries) will be

possible due to improvement of work conditions and development of flexible forms of employment, i.e. not precluding further education.

6.3.2. Middle age groups (25-54)

Middle age groups of women, are the groups for which the most fundamental change, namely increase, in labour participation took place in the last decades. The growth is expected to continue for the next decades. It is assumed in the scenarios that all countries will achieve U shaped participation pattern of labour activity, which means that participation in all middle age groups shall be stable and high. It will only be levels of participation rates that will differ countries from three distinguished groups, and that will differ female participation pattern from the male one. Labour force participation rates are assumed to vary between 75% and 80% in all middle age groups which shall reflect practically no break in professional carrier for bearing children. This can be possible due to child care institutions (already present and popular in Scandinavian countries for example).

For most of countries, especially from the group with low economic activity, it will require substantial increase in economic activity of the middle age groups, particularly of women aged 35 years and more. Scenarios assume continuation of the past trends in the current decade. If considerable increase of participation in certain age groups is expected, it should be most dynamic around the year 2035. Between 2002 and 2052 the greatest increase will be observed in Italy, Spain and Greece, i.e. countries with the lowest current economic activity of middle age women. Relatively smallest increase will be observed in the group of high participation and CEE countries, with several cases of slight decline in some age groups, e.g. in Austria, Denmark or Finland. In Norway and Sweden target values for the age group 50-54 have been modified upwards, to 80%.

6.3.3. Older age groups (55+)

Participation rates of older women in the current decade are going to follow country trends and then, by assumption, converge to target values. Continuation of trends will in many cases means declines of economic activity of women aged 60 years and more, like in France, Finland and Poland. For many countries, e.g. Bulgaria, Luxemburg or Sweden, due to the lack of data trends have been set constant.

Target values for these age groups has been unified (the same for all countries), and equal to males' levels. This may be surprising, especially having in mind past and recent developments of female participation rates. They have always been smaller than male, in most cases significantly[12]. Maintaining such situation, however, has no economic justification. On the contrary, as women live longer, from the perspective of a viability of the pension system, it would be better if they worked long. Therefore, in the scenarios it is assumed that levels of

[12] There are exceptions (e.g. Finland in a few 5 year age groups), but generally participation rates of men are higher than these of women.

participation rates will be relatively high and the same as for men. This is justified by the need for financial stability of social security systems, on one hand, and improved employment opportunities for older workers, also women, on the other. And although, again, such levels of participation may seem radical, the example of Scandinavian countries proves that they are not impossible to achieve.

In all countries continuation of past trends is expected for the current decade. In many cases it means stagnation or further declines of participation of older women, e.g. in France, Greece, the Netherlands or Poland. The rates are going to start rising after the year 2015, with the most dynamic change between 2030 and 2040. Account for country specific factors target values for Finland, Norway, Portugal, Romania and Sweden have been modified upwards.

6.3.4. Total population of women

For women the influence of the demographic trends on economic activity of total population of women is even grater than in the case of men. Despite assumed rising economic activity of all age groups in all countries, with minor exceptions, economic activity of women will generally decline in most of countries. Respective rates are presented in Table 6.4 (results are based on the population projections of the Central European Forum for Migration Research, see Bijak 2004; Bijak et al. 2004); shaded areas in the table mark temporary increases of economic activity. Projected labour force participation rates for population 15+ are presented in the Annex.

Between the year 2002 and 2052 economic activity of women shall increase only in Hungary and France, in both cases by less than 1 percentage point. In Hungary it will be a result of increased labour participation of women in all age groups; in France it shall stem from relatively young population structure. In the rest of the countries in the study decline of economic activity of women should be expected.

The differences in economic activity between countries are not expected to decline. In 2002 labour force participation rates for total population of women in the analysed countries varied between 30,3% for Italy and 49,7% for Denmark. The 2052 rates should oscillate in almost equally wide rage: from 25,5% in Italy to 44,5% in Norway.

Table 6.4. Observed (2002) and projected labour force participation rates for total population in 27 European countries- females

	2002	2007	2012	2017	2022	2027	2032	2037	2042	2047	2052
AT	42,1	41,6	41,3	40,4	38,8	37,4	36,6	36,2	35,7	35,2	34,8
BE	35,9	35,9	35,5	34,9	34,2	33,7	33,5	33,6	33,8	33,8	33,8
BG	39,6	39,8	39,5	38,7	38,2	37,8	37,3	36,9	36,5	36,0	35,8
CH	48,5	48,9	48,8	48,0	46,7	45,1	43,7	42,6	41,7	40,9	40,2
CZ	43,3	42,2	42,1	42,1	41,9	41,5	40,1	38,5	37,2	35,9	34,9
DE	42,5	42,9	42,9	42,2	40,9	39,5	38,6	38,3	37,8	37,2	36,7
DK	49,7	48,4	47,9	47,4	46,5	45,1	44,1	43,5	43,5	43,5	43,2
EE	43,9	44,1	44,5	43,9	43,1	42,7	42,5	42,0	41,2	40,1	39,2
ES	35,7	34,7	34,0	32,9	31,9	30,8	29,8	28,9	28,0	27,4	27,1
FI	47,3	45,2	43,8	42,5	41,4	40,9	41,0	41,6	42,0	42,1	41,9
FR	41,1	40,2	39,2	38,3	37,7	37,8	38,6	39,7	40,8	41,6	**42,0**
GR	35,4	35,2	34,8	34,1	33,4	32,5	31,6	30,7	29,8	29,2	28,7
HU	35,1	34,9	34,6	34,9	35,5	36,0	36,1	36,2	36,3	36,0	**35,5**
IE	39,2	39,0	38,3	37,4	36,6	36,1	35,5	35,0	34,4	33,8	33,3
IT	30,3	29,1	28,3	27,6	26,7	26,1	25,7	25,5	25,5	25,5	25,5
LT	45,7	46,9	47,9	47,5	46,4	45,0	43,9	42,8	41,2	39,3	37,9
LU	34,7	33,3	32,8	32,3	31,7	31,2	30,9	31,0	31,2	31,4	31,4
LV	43,2	42,8	43,5	43,2	42,5	42,1	41,9	41,6	40,7	39,2	38,2
NL	45,4	45,1	44,3	43,3	41,9	40,6	39,6	39,1	38,8	38,6	38,3
NO	49,3	49,0	48,9	48,5	47,7	46,6	45,7	45,2	45,0	44,8	44,5
PL	40,0	39,7	39,4	39,0	38,7	38,3	38,0	37,5	36,8	35,8	34,9
PT	46,1	45,8	45,2	44,4	43,7	43,1	42,3	41,3	40,4	39,8	39,4
RO	45,5	44,8	44,8	44,9	44,7	44,2	43,6	42,8	41,8	40,7	39,7
SE	47,9	45,5	44,8	44,4	44,0	43,6	43,5	43,8	44,2	44,3	44,0
SI	44,4	44,4	43,6	42,7	41,6	40,6	39,6	38,5	37,7	37,1	36,6
SK	43,4	43,2	42,7	42,1	41,4	40,6	39,1	37,3	35,7	34,3	33,4
UK	44,0	44,4	44,5	44,3	43,5	42,3	41,3	40,7	40,4	39,9	39,4

Source: ILO 2004, own computations

Between country differences in economic activity of women are partly a result of three patterns (presented in Table 6.3) to which country patterns are assumed to converge, depending on which group the country was classified to. It can be seen in Table 6.4 that low participation countries, with assumed lower age specific activity in 2052, experience on average also lower economic activity in the total population of women. Similarly, high participation countries, with higher age specific activity assumed, on average will experience higher economic activity in the total population of women. It is not the rule, however, that all high participation countries will experience higher economic activity than all low participation countries.

The labour force participation rates for total population of women reveal great importance of population structure, which was already seen for males (section 6.2.4). For example, in Austria or Germany relatively high economic activity should not make up for relatively old population structure (both countries are assumed to experience very low fertility for the next decades; Bijak 2004). In result economic activity in the total population of women in both countries will be similar to economic activity experienced by low participation countries. The positive influence of population structure can be observed in France, where relatively low target values are compensated by high fertility and resulting relatively young population structure. In 2052 France is expected to experience the fourth highest labour force participation rate in the total population of women. It is also worth noting that economic activity of women in Central and East European countries is expected to be low, despite relatively high target values set for these countries. As in the case of Austria and Germany, this is due to low fertility and resulting relatively old population structure in the 2052.

Economic activity for total population of women shows also great sensitivity to changes of age specific participation rates in the oldest age groups. As in the case of men, countries with highest participation in total population of women, i.e. Norway and Sweden, are the countries where participation patterns has been modified upwards for the older women.

6.4. Scenarios of labour force participation in 27 European countries over the period 2002 - 2052

Compilation of scenarios for men and women produces scenario for total population. Respective rates are presented in Table 6.5.

It can be seen in Table 6.5 that between the year 2002 and 2052 general decline of participation should be expected. There can be periods of temporary growth of economic activity in some countries, marked with shaded area in Table 6.4, but they do not change the overall trend. Relatively smallest decline in economic activity can be observed in Belgium, by 2%. Greatest decline is expected in Spain, by almost 20% in comparison to 2002 levels. France and Hungary are only countries, where the economic activity in total population is expected to increase. In both cases the increase should not exceed 5%. In the year 2052 economic activity in the countries under study are going to vary between 36% for Italy and 47.7% in Switzerland.

Table 6.5. Observed (2002) and projected labour force participation rates for total population in 27 European countries

	2002	2007	2012	2017	2022	2027	2032	2037	2042	2047	2052
AT	48,8	48,1	47,8	46,8	45,3	43,8	43,0	42,7	42,4	42,0	41,6
BE	42,7	42,8	42,4	41,8	41,1	40,6	40,6	41,1	41,5	41,8	41,7
BG	43,2	43,8	43,7	43,1	42,8	42,8	42,8	42,8	42,5	42,0	41,6
CH	55,8	56,4	56,4	55,8	54,6	52,9	51,3	50,2	49,3	48,5	47,7
CZ	50,3	49,2	49,0	48,7	48,4	47,9	46,9	45,5	44,2	42,9	41,7
DE	49,3	49,4	49,3	48,5	47,2	45,6	44,6	44,3	43,8	43,3	42,7
DK	54,1	52,5	51,9	51,3	50,4	49,0	47,9	47,3	47,2	47,2	47,0
EE	48,3	48,8	49,6	49,1	48,4	48,1	48,1	47,8	47,1	45,9	44,8
ES	45,8	44,9	44,5	43,7	42,7	41,6	40,4	39,2	38,1	37,3	36,8
FI	50,7	48,2	46,7	45,3	44,3	43,8	44,0	44,7	45,2	45,3	45,2
FR	44,9	43,9	42,7	41,9	41,3	41,5	42,3	43,5	44,5	45,2	**45,6**
GR	44,8	45,2	45,1	44,6	43,9	43,0	42,0	40,8	39,7	38,7	38,0
HU	41,1	41,3	41,2	41,3	41,9	42,6	43,1	43,4	43,7	43,5	**43,0**
IE	46,5	46,5	46,2	45,7	45,3	45,1	44,9	44,5	43,9	43,2	42,7
IT	40,2	39,0	38,2	37,5	36,8	36,1	35,8	35,7	35,8	35,9	36,0
LT	49,8	51,6	53,1	53,2	52,2	50,9	49,8	48,7	47,2	45,2	43,5
LU	43,3	42,5	42,4	42,3	41,8	41,3	41,1	41,4	41,7	41,9	41,9
LV	48,1	47,7	48,8	48,7	48,0	47,6	47,6	47,5	46,7	45,2	44,0
NL	51,5	51,1	50,1	49,1	47,8	46,4	45,5	45,2	45,0	44,8	44,6
NO	53,0	52,3	52,0	51,5	50,5	49,4	48,4	47,8	47,7	47,6	47,3
PL	45,1	45,1	45,1	44,8	44,3	44,0	43,9	43,8	43,3	42,4	41,4
PT	52,2	52,0	51,5	50,9	50,4	49,8	49,1	48,1	47,2	46,6	46,2
RO	50,7	49,9	50,0	50,1	50,1	49,9	49,6	49,1	48,2	47,0	46,0
SE	50,7	48,1	47,5	47,2	46,7	46,4	46,3	46,7	47,2	47,3	47,0
SI	49,4	49,5	48,8	47,8	46,9	46,1	45,4	44,7	44,1	43,4	42,8
SK	49,0	49,6	49,5	49,0	48,3	47,8	46,9	45,8	44,5	43,2	42,1
UK	50,2	50,5	50,6	50,3	49,4	48,1	46,9	46,2	45,7	45,3	44,8

Source: ILO 2004, own computations

It is worth noting that the general declines in participation, will be accompanied by increase of labour force participation in almost all age groups in all countries. It means that in the most of countries population ageing should progress faster than expected growth of age specific participation rates. Tables in the Annex show isolated influence of demographic trends. If age specific labour force participation rates remained on their current levels economic activity would decline more than it was expected in the scenarios.

The results are particularly interesting when compared to the EU aims formulated in the Lisbon Strategy. The document assumes that, to become a world competitive economy, an

average employment rate in the EU Member States should raise to 60%. As the employment rate is, by the definition, smaller than participation rate for total population, it is evident that moderate optimism is not enough to fulfil the aim.

There are also reasons for optimism provided by the case of Switzerland. Population structure in Switzerland does not differ significantly from the rest of the countries under study, while expected fertility and mortality developments are expected to result in relatively fast population ageing (Bijak 2004). Nonetheless, due to very high age specific activity rates, it was the country with the highest economic activity 2002 and is expected to keep this rank up to the year 2052. It does not mean that reasonably high participation can fully offset population ageing. Dynamics of decline of total economic activity in Switzerland suggests that the positive impact of realistically high labour force participation rates in all age groups is limited in time. It proves, however, that high age specific economic activity can keep economic activity of total population on reasonable levels in the countries under study for the next 5 decades. Cases of Sweden and Norway prove that relatively high labour force participation in all age groups combined with high fertility can provide reasonable level of economic activity of total population even longer.

Assumptions and their quantification are moderate but optimistic. They rather underestimate, then overestimate future course of labour participation in the countries under study. It is worth noting that, with participation rates for total population, errors of demographic projection add to errors of participation. The net magnitude of the errors cannot be estimated.

7. Conclusions

In the last twenty years rapid changes on the labour markets have been observed. They were characterized by substantial increase of economic activity of women and considerable drop of activity of older workers.

The raise of economic activity of women, accompanied by evolution of social roles and institutional setting, resulted in expansion of the share and position of women in the labour force. It is still observed that motherhood depresses female labour force participation, but in ever more countries development of child care services and social habits facilitate high economic activity of women. For many countries under study, e.g. Austria, Denmark, Sweden or Norway, female participation pattern resembles the male one, with only slightly lower levels of age specific participation rates (see Annex).

It can be expected in the coming decades that economic activity of women, especially in childbearing age, will further grow. The process will be most noticeable in age specific labour force participation rates of middle age women (25-54) and will be particularly dynamic in the countries where the rates are relatively low, i.e. Italy, Spain and Greece. By the year 2052 all countries in the study should reach inverted U-shaped pattern of economic activity of women, with only small differences in levels of activity between the countries.

Drastic recline of participation in oldest age groups was related to development of social security systems and possibility of earlier retirement. In many countries, especially post socialist, earlier retirement plans were used to secure income and position to older people, who would have to be dismissed in the process of structural changes of the labour market.

These practises shall soon be stopped. It can be expected that the social security systems will be reorganised. It should be much harder to live from the systems, except for the justified cases. New rules should create the incentives to the workers to work longer with no breaks in the carriers, which ought to lift up age specific participation rates of older people. Facilities to higher participation of the older, however, should also come from the demand side of the market. They should involve flexible work schedules, part time jobs, etc. The latter should ensure that older people's willingness to work will not be confronted with practically no chance for employment. Instead, it should be easier for older workers to stay on the market, while active employment policies should help older people to find and keep their posts. Hence, it is expected in the scenarios that economic activity of older workers will be much higher in 2052 in comparison to current levels for most of countries. Current decade will, however, be still the time of continuation of the country trends. Only after the year 2010 should labour force participation rates start to converge to their assumed target values. If rapid changes of economic activity of older workers are expected, they are assumed to take place around the year 2030.

Although, it is usually the case that age specific labour force participation rates for women are lower than these of men, scenarios for all countries assume that economic activity of older men and older women should stabilise on the same level in the long run. The case of Finland, where female participation rates in few older age groups are higher than male ones, demonstrates that such assumption is not unrealistic.

Drastic decline of economic activity of the young people was another characteristic of the last two decades. It has been the effect of the technological progress which, creating demand for specific skills and knowledge, lifted up the value of education. Since, the return from additional years of schooling went up, ever more young people engage in different forms of education. Many of the forms exclude market activity, which lowered participation rates.

For current decade continuation of past trends is expected, which for many countries means further decline of participation rates of the young. Particularly rapid declines in this period will be observed in most of Central and East European countries. It can be expected, however, that development of flexible forms of employment will enable joining education with economic activity and will allow growth of the participation rates in the two youngest age groups, 15-19 and 20-24, after the year 2015 and their stabilisation on relatively high levels in the long run. Long term levels of participation are going to vary between 30% - 40% in the age group 15-19, and between 65% - 75% in the age group 20-24. For many countries in the study, especially of Southern, Eastern and Central Europe, reaching such levels will require substantial increase of economic activity of the young. In a few cases, e.g. Denmark or the Netherlands, due to country specific factors target values have been modified upwards.

The only groups for which stagnation or even moderate declines in economic activity can be expected within the next 5 decades are middle age men. For the last two decades labour force participation rates of men in the age between 25 and 54 years have been very stable – they have varied between 80% and 100%. It is assumed in the scenarios that they will stabilize around the level 90% - 95% up to the year 2052. Such target levels will require adjustment, also downwards, of the country rates. In most of cases, however, the adjustment change should not be greater than 5 percentage points.

To see the aggregate effects of the assumptions for age groups, scenarios for total population, as well as total population of men and women, have been constructed. The comparison of the scenarios with assumptions for age groups demonstrates that age specific labour force participation rates are not the only factor to determine economic activity in total populations of the countries under study in the coming decades. Demographic developments, especially change in population structure, are going to be at least equally important.

For the next 5 decades changes of the proportions of certain age groups in the total population, favouring older age groups, are going to offset increase of age specific economic activity. In result, despite assumed increased economic activity of almost all age groups,

economic activity of total population is going to decline in all countries under study, except for France and Hungary. Scenarios, based on the population projections of the Central European Forum for Migration Research (Bijak 2004; Bijak et al. 2004), are presented in Tables 6.2, 6.4 and 6.5 and in the Annex.

In the year 2052 economic activity in the countries under study are going to vary between 36% for Italy and 47.7% in Switzerland. Differences in economic activity of total population between countries can be partly a result of different levels of economic activity assumed for women. It can be seen that countries with assumed lower age specific activity of women in 2052, like Italy, Greece or Spain, experience on average also lower economic activity in the total population. Similarly, countries with higher age specific female activity assumed, like Finland, Denmark, Norway, Sweden or Central and East European countries, on average will experience higher economic activity in the total population. It is not the rule, however, that all countries with assumed high participation of women will experience higher economic activity than all countries with low participation.

Again, population developments can positively or negatively influence country levels of economic activity in the total population. For example, in Austria or Germany relatively high economic activity of women should not make up for relatively old population structure (both countries are assumed to experience very low fertility for the next decades; Bijak 2004). In result economic activity in the total population in both countries will be similar to economic activity experienced by some of the countries with low participation, like Belgium or Luxemburg. The positive influence of population structure can be observed in France, where relatively low target values are compensated by high fertility and resulting relatively young population structure. In 2052 France is expected to belong to the group of countries with the highest economic activity in total population. It is also worth noting that economic activity of women in Central and East European countries is expected to be low, despite relatively high age specific participation rates assumed for these countries. As in the case of Austria and Germany, this is due to low fertility and resulting relatively old population structure in the 2052.

The impact of the demographic developments on the level of economic activity is going to be significant in the coming decades. At the current stage of population development in the countries under study, however, they can, to large extent, be offset by sufficiently high age specific economic activity, which is demonstrated by the case of Switzerland. Although Switzerland is expected to experience one of the lowest fertility rates among the countries under study (Bijak 2004), due to very high age specific participation rates, it is going to also experience the highest economic activity in total population. It means that in the coming 5 decades, very high age specific participation rates might compensate for population ageing in all countries under study. This possibility is, however, limited in time, which is also noticeable in the case of Switzerland. Dynamics of the expected decline of economic activity in Swiss total economic activity suggests that in the few decades much higher age specific

economic activity will be needed to counteract demographic phenomena. Hence, since the growth of age specific participation rates is bounded, it can be expected that ageing of the population will exert ever greater influence on level of economic activity in total population.

Cases of Sweden and Norway prove that relatively high labour force participation in all age groups combined with high fertility might considerably hamper the impact of ageing on economic activity in total population.

Comparison of the labour force participation rates for countries, especially for countries for which target pattern of economic activity have been modified, shows also another characteristic feature of development of these rates. In most cases, countries with the highest participation rates for total population in 2052 are also the countries where labour participation rates for older groups have been modified up in comparison to similar countries, like Switzerland, Sweden, Portugal or Romania. Such sensitivity to changes of the rates can demonstrate potential effects of active employment policies targeted in the older age groups.

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