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THE IMPACT OF DEMOGRAPHIC CHANGES ON LABOR SUPPLY

MAIN FACTS AND TRENDS

Increased longevity of the population is one of the major achievements of our societies. It reflects improved health and welfare standards within the European Union. It raises, however, important challenges for the adaptation of institutions and policies to the new demographic reality. Structural reforms are needed in a number of different policy areas to improve the degree of integration of the unemployed into employment in order to offset the increasing economic burden upon the active work force emanating from a rising share of economically inactive older persons. The prospects for drawing a larger proportion of the aging population and the existing unemployed into the economically active population, depend not only on appropriate macroeconomic policy being in place to ensure adequate aggregate demand, but also on an efficient operation of the labor market. Aging is thus not only a demographic process but also a socio-economic phenomenon.

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The economic implications of population aging are not as clear as they may seem on the surface. For example, it is sometimes said that the rising share of economically inactive older persons in the population represents a growing burden on the economically active population. Such a view is rather simplistic and needs to be heavily qualified. The common summary statistic used to underpin the argument is the dependency ratio, i.e., the retired elderly and the under 15-year olds as a proportion of the population in working age. A rise in the dependency ratio is supposed to imply that paid (market) work is increasingly diverted to the care and provision for the elderly (given a long-term decline in birth rates). However, the demographic dependency ratio does not provide a realistic picture of the relationship between labor resources in productive use and those consuming the produce. The true economic rate of dependence needs to take into account to what extent people are available for gainful employment, and to what extent the employment rate changes by age

and gender over time. Apart from those actually engaged in paid employment, a large proportion of the population of working age includes those who are unemployed, in training schemes, in households performing unpaid work, or in early retirement. Moreover, training schemes expand, both in response to demand but also as a means of mopping up unemployment.

The demographic dependency ratio is not a reliable indicator of the economic dependence of the economically inactive upon the active work force. The true economic rate of dependence is linked to the employment rate and its change by age and gender over time. Individual dependence is captured by the status transitions of men and women by age.

In the EU, age-status transitions have become less standardized. People may move from school into work, then into training, part-time work plus further education, in particular higher education, and back into work. The former relatively standard transition from school to work is becoming more variable, while the form and content of education as well as the provision of skills to specific age groups are currently under review. As old industries close down or restructure, old skills become obsolete and retraining becomes a necessity for all ages, men and women alike. Lines of economic dependence may be reversed between men and women and even between young and old over the course of life such that age is becoming less obvious a factor in economic activity.

Ageing is not just a mechanical demographic process, a biological phenomenon, but also a socioeconomic phenomenon. It may have implications for labor force participation by age and gender as well as the structure of labor demand by occupation and skill. Changes in labor force participation rates have economic and social causes and are linked in complex ways to fertility developments. The labor supply is neither in the short nor long run entirely exogenously determined but responds also to changes in the economy and the institutional setting. Thus, for example, the labor force participation of married women depends upon the number and age of children and the extent to which public and private sector institutions take over care work from the family. Generous transfer payments and public services reduce the dependence on the family for care work. At the same time, they set labor resources free to be employed in the labor market, often on similar tasks as in their own households. Further, wage setting mechanisms and the extent to which they entail segmentation by gender and age, are of particular importance in the efficient allocation of labor between household and market production on the one hand, and within market labor on the other.

The aging of the population may imply a review of labor force participation of older workers, given the continued rise in life expectancy and the fact that old age, beyond present retirement age, is not generally linked to physical, mental or psychological decline, which would prevent continued gainful employment. The dependence of the elderly is not merely a reflection of their physical incapacity but influenced by the state and society through formal retirement practices. When labor is plentiful, earlier retirement can be encouraged as a means of disguising unemployment. Thus, reduction in labor supply through recourse to early retirement and/or disability pensions has taken place in all EU member states during the 1980s when microeconomic reform, restructuring and downsizing contributed to a rise in unemployment. Should demographic change and economic events entail the onset of labor scarcities in the second decade of the 21st century, the elderly could be urged to remain economically active until later in life than today. The dividing line between the retired population and the active work force is thus arbitrary and at least partially a policy instrument.

Another way labor supply is affected is through migration. Migration depends on migration policy and has played in some countries of the EU a more important role in the provision of labor resources than natural population increase and/or activation of domestic labor resources. The increasing share of older workers in the work force and the eventual decline of labor supply by around 2015 in several EU member states, may trigger off a new wave of immigration in Europe in order to avoid a slackening of economic growth as a result of labor scarcities.

The relevance of these issues, which varies for different countries, will be apparent in what follows. They underline the need to go beyond simplistic inferences from demographic dependency ratios to draw the economic and social implications of aging populations.

LABOR SUPPLY DEVELOPMENTS IN THE EU

CURRENT SITUATION[1]

The aging of the population of working age set in in the course of the 1990s and will continue well into the next century. The exact pattern of aging differs between regions

[1] 1995 is the take-off point for the long-term labor supply forecasts by Eurostat. This is therefore the starting point of our reflections on the implications of demographic change on labor market outcomes.

of the EU, but the main demographic trends are similar. However, in the case of the labor force, while the trends are also alike, the regional differences are somewhat more pronounced. Different educational, welfare and tax systems and policies as well as economic developments and cultural factors, account for major differences in labor force participation rates by age and gender. Labor force participation by age and gender has not developed at the same rate within, what is now, the EU. In fact, there was less variation in the female labor force participation rates between the different regions in the early 1960s compared to the early 1980s. Different socioeconomic policies and welfare models contributed to the widening of the gap in female labor force participation in the 1970s, the Scandinavian countries taking the lead in drawing a larger proportion of women into the labor force. In various countries, educational and retirement and disability pension reforms in the 1960s and 1970s reduced the activity rate at the lower and upper end of the working life cycle. Since then, convergence has set in, and it is assumed that the forces, which brought about the rise in female labor force participation, will continue to do so well into the next century. It is likely that the activity rates of women and older workers in Sweden may represent an upper limit, and that this limit may not be reached by societies with different tax and welfare systems in the period under review.

The age structure of labor supply differs more between regions of the EU than the age structure of the population of working age. Different educational, welfare and tax systems and policies as well as economic developments and cultural factors, account for major differences in labor force participation rates by age and gender.

The interaction of demographic and socioeconomic as well as institutional factors resulted in a divergence of the share of older workers in the labor force (50 to 65-year olds) in the EU; in 1995 their share in the work force spread from 14 to 26 percent. The lowest proportion of older workers in the work force is in the heart of the EU (Belgium, the Netherlands, Luxembourg, France) and at the eastern borders (Austria and Finland), with shares ranging from 14 to 17 percent. Next in line are the southern European countries Italy and Spain, and Ireland, with shares around 18 percent. Then, in the intermediate category, the U.K. and Denmark with about 20 percent. Finally, the high figures in the South, Portugal and Greece, reminders of the relatively large share of small scale farming and non-agricultural self-employment in total employment; Germany, with 23 percent, in the heart of Europe, and in the North, where Sweden is taking the lead with 26 percent.

In contrast, the size of youth cohorts in the work force varies less between EU member states. Nevertheless, the disparities are significant because of the different role of the youth labor market in the socioeconomic setting of every country, i.e., the education systems and their link with the labor market. The spread of the share of 15 to 24-year olds in the labor force ranges from some 11 percent in countries with a predominance of full-time schooling, to some 19 percent in countries with a relatively high share of youth entering the labor market as unskilled workers or as part-time workers who are at the same time students. The countries with the lowest share of 15 to 24-year olds in the labor force are France, Belgium, Luxembourg and Sweden with an average share of 11 percent, followed by Finland and Germany, and southern European countries like Italy and Greece, with an average of around 13 percent. The intermediate cases are Austria, Portugal, Spain, and the U.K., with an average figure of around 16 percent; at the upper end are the Netherlands, Denmark, averaging 18 percent, and Ireland with 19.4 percent. In countries with a "dual education system" (Austria, Germany, and, with variations, Denmark), some 50 percent of all compulsory school leavers enter a vocational education system linked to on-the-job training in firms, i.e., they are counted as employed. If, as in the case of France, vocational training is offered within the formal school system, actual integration into the labor market sets in at a later stage.

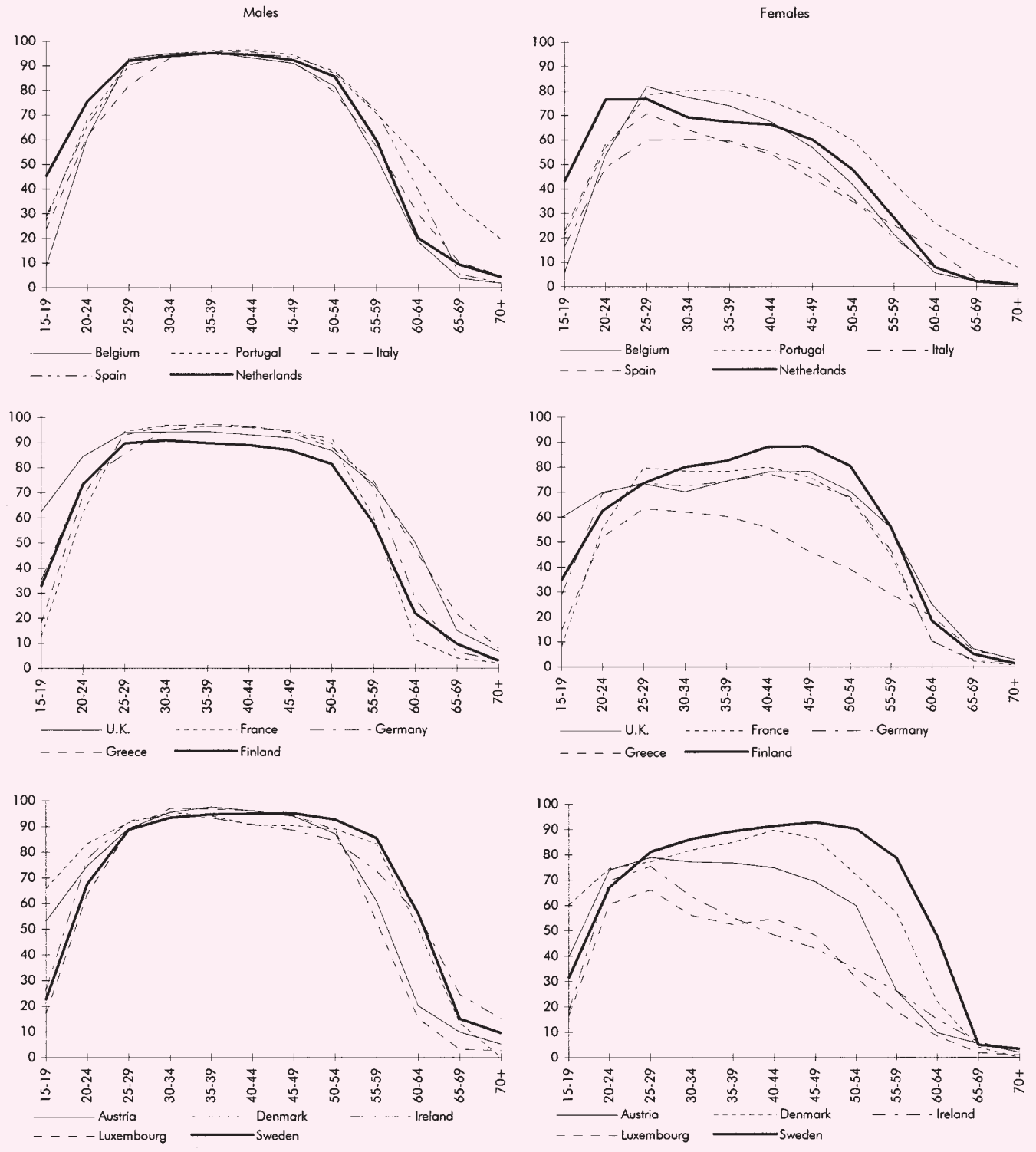
As to the medium age bracket, the population aged 25 to 49, their share in the total work force stretched from a low of some 62 percent in Ireland, the U.K., Sweden, Denmark and Portugal, to a high of around 73 percent in Belgium, France and Luxembourg. In the intermediate range are Greece (63 percent), Spain and Germany (65 percent), Austria and Italy (67 percent), the Netherlands and Finland (69 percent). Apart from demographic factors, these large variations are due to relatively large differences in the activity rates of women, particularly of married women with children.

TRENDS IN LABOR FORCE BEHAVIOR BY AGE AND GENDER

During the second half of the 1970s and early 1980s, the so-called baby boom generation entered the labor market. In the second half of the 1980s, this generation moved into the age with the highest levels of labor force participation, while smaller birth cohorts, the so-called baby slump generation, entered the labor market at the

Figure 1: Labor force participation rates by age and gender in the EU 15

Labor force as a percentage of population, 1995

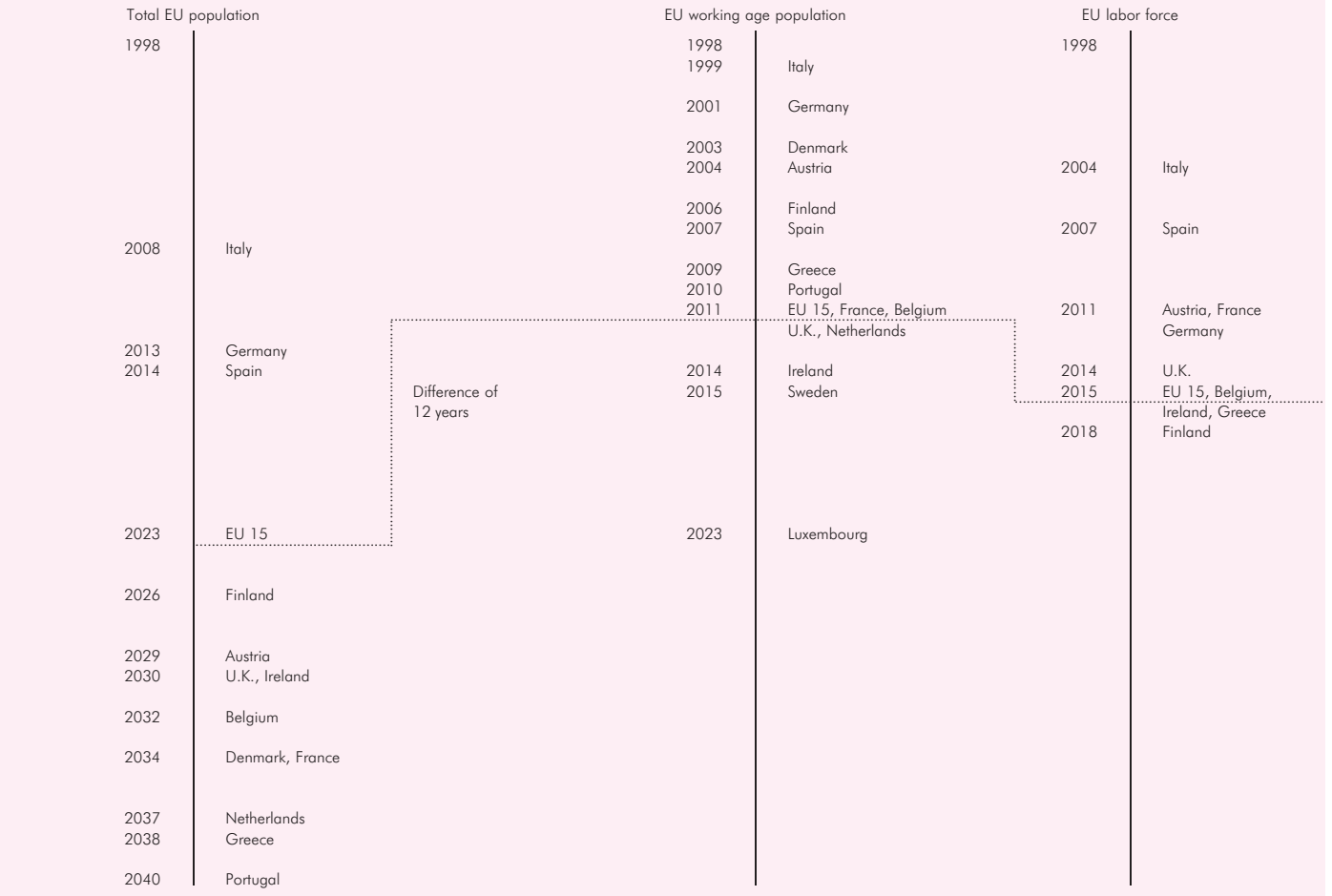


Source: Eurostat.

same time. The demographic changes contributed, together with increasing labor force participation of women, and in some countries also of youth, to an increase of labor supply in the second half of the 1970s and 1980s, which were considerable in some cases. As economic restructuring gained momentum in the course of the 1980s,

Figure 2: Turning point of total population, population of working age and labor supply in the EU

First calendar year of decline or stagnation



Source: Eurostat projections, baseline scenario.

in some regions of the EU, the unemployment rate approached two-digit levels, with long-term unemployment becoming a major problem. Measures to reduce labor supply became increasingly popular, in particular incentives to early retirement. Since the demographic dependency ratios had reached all-time lows, there were no budgetary constraints which could have discouraged the development of incentive policies towards early retirement. During the 1990s, labor supply growth slowed down without, however, resulting in a significant decline of unemployment.

Population projections suggest a decline in the population of working age (15 to 64) in a large number of EU member states well before 2015. The turning point in the EU average will be in 2011, with Italy and Germany taking the lead in 1999 and 2001, respectively. The decline in labor supply will, on average, set in somewhat later. Some countries, e.g., the nordic countries (except Finland), southern European countries like Portugal and Greece, as well as Ireland, Luxembourg, France and the Netherlands, will have a relatively stable labor supply through to 2020; and, in some other cases, even beyond that date. On the other hand, Germany, Belgium, Spain and Italy will experience declines in labor supply around 2005, Austria in 2011. The projected decline in labor supply is fairly small in relation to the unemployed labor resources. Local labor scarcities may arise in the wake of demographic change.

Between 1985 and 1995 labor supply in the EU 12 increased by 9.4 million (+7 percent). Since the number of jobs increased over the same time span only by 8.5 million, unemployment rose by 900,000 to reach an average rate of 11 percent. Currently (1997) some 150 million workers are employed in the EU 15 while 18 million are unemployed.

Table 1: Unemployment rates by gender and age groups in the EU 1997

	Males			Females			Males and females			
	15 to 24 years old	25 to 54 years old	55 to 64 years old	15 to 24 years old	25 to 54 years old	55 to 64 years old	15 to 24 years old	25 to 54 years old	55 to 64 years old	Total
	In percent			In percent			In percent			
Austria	7.8	4.5	6.0	7.3	5.0	3.3	7.6	4.8	5.2	4.4
Belgium	17.6	6.2	4.8	25.7	10.2	4.3	21.3	7.9	4.7	9.2
Denmark	6.6	4.1	4.4	9.9	5.7	6.0	8.1	4.8	5.1	6.1
Finland	23.3	11.7	19.3	26.6	12.7	20.9	24.8	12.2	20.1	14.0
France	32.8	12.9	8.5	24.6	9.7	8.6	28.1	11.1	8.5	12.4
Germany	10.3	8.0	13.4	9.6	10.4	16.5	10.0	9.1	14.5	9.7
Greece	22.2	4.9	3.3	40.6	11.9	3.1	31.0	7.7	3.2	9.1[1]
Ireland	16.9	9.7	6.4	15.2	9.3	4.9	16.1	9.5	6.0	10.2
Italy	28.7	7.5	4.6	39.9	13.1	3.8	33.6	9.6	4.4	12.0[2]
Luxembourg[2]	10.1	1.8	0.0	8.3	4.2	0.0	9.2	2.7	0.0	3.7[3]
Netherlands	9.2	3.6	3.2	10.3	6.5	5.5	9.7	4.8	3.9	5.2
Portugal	11.0	5.0	6.4	18.0	6.5	3.4	14.1	5.7	5.2	6.8
Spain	33.1	13.6	10.8	46.1	25.4	12.7	39.0	18.2	11.3	20.8
Sweden	16.3	7.3	8.5	14.3	6.9	6.0	15.4	7.1	7.3	10.2
U.K.	15.6	6.7	7.8	11.0	4.9	3.9	13.5	5.9	6.3	7.1
EU	18.8	8.1	9.0	22.4	11.0	9.4	20.4	9.3	9.2	10.6

Source: OECD, Employment Outlook, Labor Force Statistics. – [1] 1995. – [2] 1996. [3] 1997.

However, the slowdown in labor force growth and, in some cases, the decline, could help reduce unemployment as well as bring people back into employment if appropriate instruments are implemented on time (human resource management, institutional change, training schemes, infrastructure facilitating the combination of family life and market work).

The labor force will increase between 1995 and 2005 by some 6.9 million, while in the decade 2005-2015 a drop of 2.1 million is expected.

The labor supply projections (baseline projection for all member states by Eurostat) are based upon the trends of age specific patterns of labor force participation between 1985 and 1995. It is assumed that the past trends will continue in the middle-age bracket, at least in the short to medium term. As to youth and older workers, a reversal of past trends is expected. It is assumed that youth will no longer postpone entry into the labor force, i.e., the decline in activity rates of youth is expected to come to an end in the second half of the 1990s. Youth will increasingly combine studies/training and work, even in countries where students have not traditionally worked, e.g., France and Italy. Continued economic growth will assure moderate employment growth and thus act as an incentive for entry into the labor market. This assumption appears rather optimistic in the light of current labor market performance of youth. The large drop in the size of youth cohorts in the 1980s and 1990s should have raised their employment and wages, if the assumptions of demographic mechanics had applied. However, it appears that other forces on the labor market have tended to offset any positive effect emanating from the demographically induced relative scarcity of youth workers.

As to older workers, an assumption similar to youth is made, i.e., the trend to early retirement will slow down and eventually, depending on the development of total labor supply and the build up of labor bottlenecks in the different EU member states, lead into increases of activity rates of the elderly. This assumption implies that the different member countries will be implementing policy instruments which are successful in keeping older workers in the labor force. So far, however, the re-adjustment of behavioral patterns on the labor demand and supply side is not encouraging, i.e., unemployment, in particular long-term unemployment of older workers, and continued early retirement are a pervasive feature of EU labor markets.

Participation rates of men in the medium age bracket tend to be the highest in terms of age group and gender. They reached their maximum in the 1970s and have since then been following a long-term decline in most member states of the EU. However, the decline has been more than offset by the increasing participation rates of women in this age group. In future, it is assumed that the decline of male labor force participation will peter out and the rise in female participation will come to an end by the early years of the next century. Over the next 15 years, women will be the main source of labor supply growth. This trend implies the need for policy action, in particular on the question of reconciliation of family obligations and work. Apart from care work for children, women tend to care for older members of the family. Given the increase of the number of older persons relative to the working age group, in order not to constrain younger female labor from being employed in

the labor market. It is reasonable to expect that the fit and more able older women (men) could take over the task of caring for the disabled ones in need of care.

UNEMPLOYMENT BY AGE AND GENDER IN THE DIFFERENT REGIONS OF THE EU

Labor force will increase between 1995 and 2005 by some 6.9 million, while in the decade 2005-2015 an anticipated drop of 2.1 million is expected. If employment continues to grow on average by 0.7 percent annually, unemployment in the EU should eventually decline. Currently unemployment is a pervasive feature of labor markets in the EU, in which pockets of high unemployment are among youth, the elderly and women. The eventual decline in labor supply may lead to local labor scarcities and occupational and skill mismatch without necessarily bringing about full employment. Special labor market policies, in order to increase the potential of re-integration of the unemployed into the labor market, will have to be put into place. This issue will be taken up in the section below on microeconomic implications of population aging.

MACROECONOMIC IMPLICATIONS

The macroeconomic implications of an aging population, which have a bearing particularly on income transfers to retirees, are related to two labor market issues referred to above – a reduced labor supply and the existence of a substantial rate of unemployment. In terms of formal employment, the retired elderly are an inactive group whose consumption out of current national income is financed either from transfer payments or from previously accumulated pension funds. In that sense, their status is akin to that of the unemployed. If the ratio of retirees to workers rises, then the transfers to retirees must rise proportionately if the ratio of average retirement benefits to average wages and the ratio of labor to total income remain constant. The transfer costs can only be reduced by increasing employment and reducing unemployment, i.e., by raising the ratio of labor to total income produced, and/or by reducing the ratio of average retirement benefits to average wages. Thus, the income transfer costs associated with population aging may be reduced by preventing the expenditure on pensions from growing faster than the wages fund for workers. This may not necessarily involve a real reduction in benefits to the retirees if productivity rises fast enough. Such an outcome would require proper policy measures to integrate the unemployed into employment.

It follows that as long as the economies of the EU have unemployed labor resources, and appropriate macroeconomic policy and labor market measures are applied, there is no reason why an increasing proportion of retired workers relative to the working age population should necessarily increase the burden on the economically active either by reducing their share of national income or increasing taxes imposed on them.

The status of the retired elderly is akin to that of the unemployed. The rise in transfer costs as a result of the increasing number of retirees can only be reduced by increasing employment and reducing unemployment, and/or by reducing the ratio of average retirement benefits to average wages. In case of a rise in labor productivity and thus wages no real reduction of benefits to the retirees would be involved.

It is possible that drawing on unemployment to offset the declining demographic dependency ratio may be accompanied by bottlenecks in certain regions, occupations and skills as a result of segmentation and limited mobility and flexibility in the labor market. These circumstances may result in inflationary pressures well before much unemployment has been absorbed and persuade governments to apply deflationary policies. Such an outcome would reduce or negate the potential for relieving the burden of the declining dependency ratio on the economically active population; and it underlines the challenge to both active labor market policy and wages policy if investment and economic growth, and thus the well-being of future generations, are not to be compromised.

Another offsetting source against the effect of the aging population on the labor supply and economic activity is by raising the formal retiring age and removing existing inducements to early retirement. This is obviously a policy issue with important political and economic implications, but it cannot be excluded from any serious discussion on the aging problem.

A further possibility of reducing labor scarcity in particular skills and occupations is increased migration within regions of the EU. Currently migration within the EU is not substantial in quantitative terms, but it has an important structural component[2]. It tends to play an integral part in regional and economic integration within the EU. The Eu-

[2] Not more than 2 percent of the EU labor force is working in another than the native EU member state. For more detail see Biffl, G., "Migration, Labour Market and Regional Integration: The Role of the Education System", in CCET, OECD, WIFO (Eds.), Migration, Free Trade and Regional Integration in Central and Eastern Europe, Schriftenreihe Europa des Bundeskanzleramtes, Vienna, 1997, Austria.

rostat demographic projections assume that net immigration will remain unchanged over the next years, i.e., amount to less than 0.2 percentage point of population growth per year. Even though migration can not be seen as a panacea for population aging, the introduction of age- and skill-related selection criteria for some categories of migrants, e.g., temporary migrants, may assist in combating labor scarcities in certain regions and segments of the labor market. This shift in migration policy may only come about in the EU, if labor shortages become widespread[3]. The introduction of specific temporary worker programs can not act as a substitute for training schemes for the resident population, however, last but not least because the volume of net migration needed to completely offset the growth in elderly populations would be much greater than the historic levels of immigration in the EU.

MICROECONOMIC IMPLICATIONS OF AGING IN THE LABOR MARKET OF THE FUTURE

The prospects for drawing a larger proportion of the aging population and the existing unemployed labor, including youth unemployment, into the economically active population depend not only on appropriate macroeconomic policy being in place to ensure adequate aggregate demand, but also on an efficient operation of the labor market.

The organization of work is undergoing rapid and complex changes to which all age groups need to adapt.

The organization of work is undergoing rapid and complex changes to which all age groups need to adapt. These changes manifest themselves in an increasing destandardization of behavior patterns both in the sphere of employment as well as in private life. The changing pattern of family life over the life cycle is just as much an explanatory factor for the transformation of labor supply by gender, age and skills as are the changes in the organization and structure of labor demand. The difference between the employment patterns of men and women by age as well as their degree of integration into the labor market diminishes as a result of increasing individualization processes.

Comparable forms of labor market flexibility have developed in the different member states of the EU, despite different labor market institutions and methods of employment regulation. In order to spread risks and increase flexibility, enterprises seek recourse to a portfolio of different types of employment (contract labor, temps, flex-workers, home-workers, casuals, consultants, core workers), analogous to a firm or an individual holding a portfolio of different types of assets. The wage system becomes very complex and spans from the "capitalist", who gets paid in stock options, to the consultant who has performance related pay components and the worker who gets paid piece rates or an hourly wage with or without social security coverage. Technological change, in particular modern communication technology, allows the extension of market work beyond the realm of firms into the household (teleworking). At the same time large segments of household work are being transferred onto the market, in particular to the public sector – largely care work, which ranges from child care to care for the sick and disabled and the elderly.

The number of jobs involved in mass production, which can be characterized by standardized work processes, declines (quantitative loss of jobs), while flexible specialization gains weight. Flexibilization does not only encompass alternative forms of employment and working hours but also variable job content and flexible firm networking (qualitative change of jobs). Multinational production is extended to the provision of services, facilitated by information and communication technology. Outsourcing of services from the industrial sector to the services sector is not only cost-efficient due to economies of scale of service providers but also due to the large wage differences between economic sectors. These wage differences may in some cases be the result of different wage bargaining arrangements (unionized versus non-unionized sectors); in others, the result of differing market power or technical progress. While technological development has a dynamic of its own (endogenous technological progress), its implementation in work processes is driven by financial considerations. As a consequence standardized tasks are taken over by automation and computers, resulting in the total productive system undergoing change and renewal.

The flexibilization of work and wage systems and the linkage of market and household sector work represent a challenge to collective bargaining. The re-organization of work implies that seniority wage schemes are increasingly under attack. Pay for performance, either individual or collective, is becoming an important determinant of pay. Increased pay solely on the ground of length of service is, according to the new paradigm, only justified, if increased duration of service is linked to increased responsibility and/or productivity. Microeconomic reforms, such as team-based incomes and multi-skilling initiatives, are in-

[3] For more detail see OECD, Trends in International Migration. Annual SOPEMI Report, Paris, 1998, pp. 27-29.

teracting with pay scales to eliminate or reduce any income associated with length of service.

Population aging has an impact on pay and promotion systems, insider-outsider problems, welfare and training systems.

In the light of these fundamental changes in the organization of work, which affect the core functional mechanisms of the labor market, population aging is only one additional aspect in the challenge of institutional and regulatory reform. Ageing of the work force implies that workforce planning, recruitment, training, remuneration, performance measurement, equal opportunities, to name some aspects of human resource management, will need to become more cognizant of the problems of settling the different age groups into jobs.

Older workers have been disadvantaged in the labor market of the 1990s, and are finding it more difficult to gain re-employment and access to training once thrown onto the external labor market in the wake of economic restructuring, microeconomic reform and downsizing. At the same time youth has not been able to improve its labor market performance, either in terms of wages or employment-to-population ratios, in spite of declining youth cohorts. To what extent can the employment problems of older and young workers be attributed to macro- or microeconomic factors?

Given the current focus on efficiency and productivity, the link between productivity and age of a worker needs to be considered. One source of research into job performance by age has come to the conclusion[4] that older workers have similar productivity rates to young workers in tasks which require sustained attention and in which experience counts. In contrast, work, which places heavy demands on sensory and perceptual activities, selective attention, swift information processing, job performance deteriorates with age. Given the increasingly cognitive content of many jobs, older workers should maintain their competence, as long as their skills are continually updated. Teaching and training methods may have to be adapted to the special needs of older workers, however.

The employment opportunities of young workers may be hampered by insider-outsider problems. Career paths within internal labor markets may become blocked (plateauing) if larger numbers of older workers slow down the speed of promotion for the younger generation. In order to encourage work motivation and employment, strategies to develop horizontal career opportunities are asked for. Tackling the insider-outsider problem will be a major challenge, if worker mobility is to increase and (re-)entry is to be facilitated to foster employment growth.

In order to promote and accommodate more or less frequent transitions between different types of employment, periods of education and training, and inactivity over the life cycle, the different employment and pay systems will need to be integrated into a comprehensive social security and welfare system. Currently transitional types of employment are often not regulated by the existing regulatory social framework, legislation and/or collective bargaining. The question arises to what extent regulations, which date back to the organization and control of traditional industrial manufacturing work, e.g., night- and shift work, overtime pay, are still relevant in a time of non-standardized work, including the case where home and the enterprise workplace are tending to overlap. Who should pay for the investment in capital stock (computer, desk, telephone), when the home is the workplace? Does the distinction between self-employed or home-worker and employee, when work is contracted out by an enterprise, assure the necessary degree of social security coverage, health and safety regulations and workers' compensation for accidents at work of the labor force? Who pays for advanced training? Is education and re-training a private or a public utility? Does contracting out of work to home-workers imply that they have no access to the internal labor market of the contractor, i.e., less chance of career and wage rises?

Reforms to the welfare system will be necessary as a result of the changing employment patterns of men due to increasing use of contract labor and retraining needs. The choice of welfare model will be decisive for the outcome. If the male breadwinner model is adhered to, core jobs will be preserved for the male breadwinner while peripheral work will go to the secondary work force consisting of a significant proportion of females, youth and older workers. Will this kind of organization of work ensure the adaptive capacity of the labor market to economic and technological change in a knowledge society? The successful institutionalization of life-long learning, i.e., continued learning and competence development over the working life cycle, will be decisive for the preservation of international competitiveness. Accordingly, the welfare state may have to be re-constructed in the light of the new needs for all age groups in society.

CONCLUDING OBSERVATIONS

In the light of the substantial changes in the organization of work which are taking place, it will be evident that the labor market problems created by the aging population

[4] See Charness, N. (Ed.), Ageing and Human Performance, Wiley, Chichester,1985.

are essentially a sub-set of existing overall labor market problems which need to be resolved to ensure not only high productivity growth, but also a high level of employment for all age groups. While it would be a mistake to ignore the particular issues raised by an aging population, it would be equally wrong to elevate them above those problems which already exist and are likely to persist if not attended to appropriately by fiscal, monetary, wages and labor market policies. It is, therefore, to be hoped that consideration of the labor market problems of the aged will also bring into focus the prevailing problems of the economy in general.

The Impact of Demographic Changes on Labor Supply
Main Facts and Trends – Summary

Aging of the population of working age set in in the course of the 1990s and will continue well into the next century. The age structure of labor supply differs more between regions of the EU than the structure of the population of working age. Different educational, welfare and tax systems and policies as well as economic developments and cultural factors account for major differences in labor force participation rates by age and gender. Currently the share of older workers in the labor force has a spread from 14 to 26 percent in the EU – a result of the interaction of demographic and socioeconomic as well as institutional factors.

In contrast the size of youth cohorts in the work force varies less between EU member states (11 to 19 percent). Nevertheless, the differences are significant and a result of the different role of the youth labor market in the socioeconomic setting of every country, i.e., the education systems and their link with the labor market.

The share of medium age in the total work force spreads from 62 to 73 percent. Apart from demographic factors, these large variations are due to major differences in the activity rates of women, particularly of married women with children.

Between 1985 and 1995 labor supply in the EU 12 increased by 9.4 million (+7 percent). Since the number of jobs increased over the same time span only by 8.5 million, unemployment rose by 900,000 to reach an average rate of 11 percent. Currently (1997) some 150 million workers are employed in the EU 15 while 18 million are unemployed.

Labor supply projections suggest that the labor force will decline in some areas of the EU towards the end of the next decade. The decline will be fairly small in relation to the unemployed labor resources.

Between 1995 and 2005 labor supply in the EU 15 will increase by some 6.9 million, while in the decade 2005-2015 a drop of 2.1 million is expected. If employment continues to grow on average by 0.7 percent annually, unemployment in the EU should eventually decline. Currently unemployment is a pervasive feature of labor markets in the EU, in which pockets of high unemployment are among youth, the elderly and women. The eventual decline in labor supply may lead to local labor scarcities and occupational and skill mismatch without necessarily bringing about full employment. Special labor market policies, in order to increase the potential of re-integration of the unemployed into the labor market, will have to be put into place.