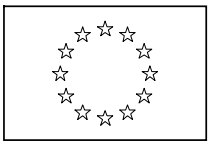

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COMMUNICATION FROM THE COMMISSION TO THE COUNCIL AND THE EUROPEAN PARLIAMENT

THE CONTRIBUTION OF PUBLIC FINANCES TO GROWTH AND EMPLOYMENT: IMPROVING QUALITY AND SUSTAINABILITY

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SUMMARY AND MAIN CONCLUSIONS

Background

The Lisbon European Council of 23-24 March 2000 requested the Council and the Commission to present a report to the Spring 2001 European Council assessing the contribution of public finances to growth and employment, and on the basis of comparable data and indicators, whether adequate concrete measures are being taken in order to:

- alleviate the tax pressure on labour and especially on the relatively unskilled and low-paid, improve the employment and training incentive effects of tax and benefit systems;

- redirect public expenditure towards increasing the relative importance of capital accumulation – both physical and human – and support research and development, innovation and information technologies;

- ensure the long-term sustainability of public finances, examining the different dimensions involved, including the impact of ageing populations, in the light of the report to be prepared by the High Level Working Party on Social Protection.

This report of the Commission and Council will help ensure that the variety of policy measures identified by the Lisbon European Council take full account of their public finance implications.

The ECOFIN Council examined a progress report[1] at their meeting of 7 November 2000, which they considered to be a good basis for the Commission-Council report to be presented to the Stockholm European Council,

How public finances affect growth and employment

Public expenditures and taxes account for between 40% and 50% of Member States' GDP. The assessment of the impact of public finances on growth and employment is not straightforward. Governments pursue many policy objectives (to improve resource allocation, redistribution, stabilisation) through a variety of policy instruments (regulation, spending, taxes), which inevitably means that the impact of public finances on the real economy is multiple and complex. Nonetheless, there is broad agreement on three main channels through which public finances can enhance potential growth and employment, as follows:

- *the accumulation of productive factors*. Governments contribute directly to growth and employment by enhancing factor accumulation. Investment in physical (infrastructures), human (education and training) and knowledge (R&D and innovation) capital, and, to a lesser extent, social spending, affect long run output and growth potential. However, if higher public investment is financed through a rise in distortionary taxes or if it increases deficits and consequently public debt, it may crowd-out private investment.

[1] ECFIN 586-00-EN.rev1

- *providing the right incentives through tax and benefit systems.* By influencing people's and businesses' decisions on work, saving and investment, tax and benefit systems affect the functioning of the real economy. Welfare systems play an important role in correcting market failures and ensuring social cohesion, and, via these channels contribute to growth and employment. Efficient social protection can be viewed as a 'productive' factor. However, it is necessary to ensure that tax and benefit systems are conducive to higher participation and employment rates.

- *providing a stable macroeconomic climate.* Sound public finances contribute to macroeconomic stability and support monetary policy in maintaining stable prices at low interest rates. Both effects are conducive to private investment and saving. Sound public finances, by reducing public debt and consequently the interest burden, creates room for a reduction in distortionary taxes and/or an increase in productive public spending. Finally, sound public finances will also enhance growth and employment in the long-term by helping countries cope with the substantial pressure to increase public expenditures, especially on pensions and health care as a result of ageing populations.

The challenge of maintaining sound public finances in EMU

Recent budgetary developments indicate that the EU is on the right track. The Stability and Growth Pact (SGP) goal of "close to balance or in surplus" is within reach and public debt is on a steady downward path. At the same time, reforms are being introduced to lower the tax burden from historically high levels. This is a considerable achievement bearing in mind that the deficit for the EU as a whole was at 6% of GDP only seven years ago.

However, the picture is not altogether favourable. Firstly, there is emerging evidence of a pro-cyclical loosening of the budgetary stance at a time when the output gap is turning positive in most Member States. The fact that the EU as a whole is forecast to still have a structural deficit in 2001 suggests that a relaxation of budgetary adjustment has occurred in some Member States compared with the 'real' adjustment effort implied by their stability and convergence programmes. Further consolidation may be required if Member States are to live up to the commitment of reaching the SGP goal ahead of schedule.

With the SGP goal within reach and a favourable economic environment, new budgetary priorities are coming to the fore. The report considers, on the basis of a number of criteria, whether recent tax reforms can achieve a sustainable reduction in the tax burden while maintaining the commitment to fiscal discipline. Although tax cuts are appropriate in most EU countries, there appears to be a need for matching reductions in government expenditure in order to avoid a deterioration in structural budget balances. In addition, the employment and growth effects of some tax reductions could be enhanced by framing them within a comprehensive package encompassing targeted measures to reduce distortionary taxes and appropriate reforms of benefit systems. The Commission invites Member States to examine the merits of the criteria for assessing tax cuts and scope for their implementation as part of the budgetary surveillance process at EU level.

Towards more employment-friendly tax and benefit systems

Tax reforms in recent years have focussed on the need to reduce the burden on labour, which increased by one-third in the past 30 years. Overall, progress has been made towards making tax systems more employment-friendly, lowering the fiscal burden on labour as well

as reducing marginal tax rates. However, overall labour taxation in many Member States still remains very high by international standards. Furthermore, the reform effort has been unequal with a comprehensive approach to reform of the tax system in some countries contrasting with a piecemeal approach in others.

Many countries have taken steps to reduce taxes, notably employer's social security contributions, and more recently personal income taxes especially at the lower end of the earnings scale. Although most reforms provided for generalised reductions in taxes, some countries clearly targeted reductions at low-paid families with children.

Changes in net replacement rates have been relatively small, while only few Member States have developed in-work benefits to boost earnings of low-paid workers. The relationship between financial incentives and the willingness of the unemployed to search and take up jobs depends very much on the conditions attached for receiving benefits, as well as on the way in which benefit schemes are administered. There has been a tendency tighten benefit entitlement conditions, thereby supporting participation in active labour market programmes. However, these efforts in shifting the balance from passive to active labour market policies must be speeded up, reinforced and intensified.

Public finances for a knowledge-driven economy

Assessing the contribution of public finances to a knowledge-driven economy is timely given the ongoing debate on the "new economy". However, there are considerable difficulties making cross-country comparisons on public expenditures as there is a lack of data on both inputs by the public sector (i.e. a comparable functional classification of spending) or outputs (the efficiency and economic benefits of such expenditures). Aside from data limitations, comparisons should take account of differences in the incentive structure for private agents, tender procedures, public procurement, outsourcing, and finally taxes. Unfortunately, given the limited data available, it has only been possible to partly respond to the mandate of the Lisbon Council.

Greater efforts are needed to increase the investment necessary to facilitate the development of the information society Governments must also put more emphasis on education and training in order to equip European citizens with the necessary skills for an information society, while promoting the involvement of the private sector on innovation and R&D activities. Such efforts have to be made in a framework of sound fiscal policies with the increase in capital accumulation being financed through expenditure restructuring and not via an increase in overall public spending Furthermore, restructuring of public spending should be complemented by institutional and structural reforms that enhance the role of market mechanisms and introduce adequate incentive systems to promote private accumulation of physical and human capital.

The long-term sustainability of public finances

In the coming decades, the population of EU Member States will undergo substantial changes in size and age profile. Recent Eurostat population projections show that the EU working age population (aged between 20 and 64) will stay broadly stable at some 230 million persons until 2015, but thereafter fall to 192 million by 2050. At the same time, the numbers of elderly persons aged over 65 will rise from 61 million persons in 2000 to 103 million in 2050. This implies that the old age dependency ratio for the EU (defined as

persons aged over 65 as a percentage of working age population) will rapidly increase from 27% in 2000 to 53% in 2050.

Ageing populations will lead to substantial pressure for increased spending on public pensions. Long-term projections provided by the Ageing Working Group of the Economic Policy Committee show that ageing populations could lead to increased pension expenditure of between 3 and 5 percentage points of GDP in most Member States. The projections show that the expected increase in public expenditure on pensions will be slower than the rise in the dependency ratio: this suggests that reforms in the 1990s have gone some way limiting the increase in spending on public pensions due to ageing populations. Available estimates point to increased spending on health care due to ageing populations in the order of 3 percentage points of GDP. Overall, ageing populations represents a major challenge to the sustainability of public finances, with the most acute challenge facing countries having a large stock of outstanding public debt and that finance pension systems on PAYG basis.

The scale of the phenomenon calls for a comprehensive approach to addressing the budgetary implications of ageing. Firstly, Member States should pursue fiscal consolidation and reduce public debt levels at a faster pace, thereby reducing the interest burden which could offset part of the spending rise due to ageing. Secondly, labour market reforms leading to an increase in employment rates would help offset the negative impact of demographic developments on the size of the labour force. As emphasised in the report of the High Level Working Party on Social Protection, particular attention must be paid to raising participation rates amongst women and older workers. Reforms are required to ensure that tax and benefit systems provide positive incentives to stay in the labour market, to reduce recourse to early retirement programmes, improve access to life-long learning, facilitate the reconciliation of professional life and family life for example via the provision of affordable child care facilities.

Finally, despite measures introduced in recent years, further reforms of public pension systems are needed. These should aim at promoting higher participation rates among older workers and women, ensuring greater actuarial fairness with a closer link between contribution and entitlements, and a better balance between the different pillars within the pension systems. In many Member States, funded pension provision will be expected to play a greater role. Policy responses should be decided well in advance of the increase in old-age dependency ratios, so that people can make the necessary adjustments to their old-age provision.

The EU can play a constructive role in helping Member States address the budgetary consequences of ageing populations. The Commission will support efforts to extend long-term expenditure projections which assess the impact of ageing population on health care spending and long-term care for the elderly. The Commission will also strive to ensure that the issue of long-term sustainability is fully incorporated into the Stability and Growth Pact framework, and Member States should ensure that this issue is comprehensively addressed in their stability and convergence programmes. Finally, the Commission will examine the possibility of establishing, in cooperation with Member States, a European Longitudinal Ageing Survey, with a view to assisting countries in the design of public policies that cater for the changing needs of an ageing population.

1. INTRODUCTION

The mandate

The Lisbon European Council requested the Council and the Commission to present a report to the Spring 2001 European Council assessing the contribution of public finances to growth and employment, and on the basis of comparable data and indicators, whether adequate concrete measures are being taken in order to:

- alleviate the tax pressure on labour and especially on the relatively unskilled and low-paid, improve the employment and training incentive effects of tax and benefit systems;
- redirect public expenditure towards increasing the relative importance of capital accumulation – both physical and human – and support research and development, innovation and information technologies;
- ensure the long-term sustainability of public finances, examining the different dimensions involved, including the impact of ageing populations, in the light of the report to be prepared by the High Level Working Party on Social Protection.

With a view to advancing work on the Commission-Council report, the ECOFIN Council of 7 November 2000 examined a progress report[2] prepared by the Commission services which draws upon the DG ECFIN report *Public finances in EMU-2000*[3]. The ECOFIN Council concluded that the progress report provides a good basis for Commission-Council report to be presented to the Stockholm European Council in spring 2001.

Aim of the Commission-Council report to the Stockholm European Council

A variety of Community instruments already contain recommendations on various aspects of public finances. Macroeconomic issues are dealt with in the framework of the Broad Economic Policy Guidelines (BEPG) and the Stability and Growth Pact (SGP). Structural aspects of tax and expenditure polices are dealt with in the BEPG, the Employment Guidelines (EG), and reforms in product and factor markets are assessed as part of the Cardiff process. The Commission-Council report focuses on the contribution of public finances in enhancing growth and employment, and thereby ensuring that they play a full role in achieving the EU's new strategic goal.

The Commission-Council report can help ensure that the variety of policy measures identified by the Lisbon European Council take full account of the public finance implications of policy initiatives to achieve the Lisbon objectives. It is imperative in the

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2 ECFIN/586/00-EN.rev1

3 ECFIN/339/00-EN, May 2000, published in *European Economy, Reports and Studies*, No 3, 2000.

drive to reform tax and benefit systems, and to redirect public expenditures towards physical and human capital accumulation, that the commitment to sound and sustainable public finances is credibly adhered to at all times.

Outline of the Communication

Part 2, after presenting some stylised facts on public finances at the start of the twenty first century, reviews the complex interactions of public finance with economic growth and employment, and thus provides the analytical framework for the rest of the report.

Part 3 focuses on the need for *sound public finances as a condition for growth and employment*. It assesses the challenges which Member States face in sustaining the budgetary consolidation process in stage 3 of EMU. It considers whether recent measures can achieve a sustainable reduction in the overall tax burden, while at same time respecting the commitment to budgetary discipline.

Part 4 of the report assesses recent steps towards *more employment-friendly tax and benefit systems*, i.e. whether they improve incentives to work, save and invest. After examining the structure of tax/benefit systems in the EU, part 4 assesses the impact of recent reforms introduced by Member States especially on unskilled and low-paid workers.

Part 5 looks at the *role of public finances in promoting a knowledge-driven economy*. It contains detailed assessments on public investment in physical capital (infrastructure), human capital, R&D and innovation.

Part 6 looks at *the long-term sustainability of public finance*s in light of the impact of ageing populations on pension and health care systems. It draws upon projections of the Economic Policy Committee (EPC) working group on ageing populations examined by the ECOFIN Council of 7 November 2000, and work of the High Level Working Party on Social Protection. It examines whether Member States are taking adequate measures in a variety of policy fields to address the budgetary implications of ageing populations.

2. HOW DO PUBLIC FINANCES AFFECT GROWTH AND EMPLOYMENT?

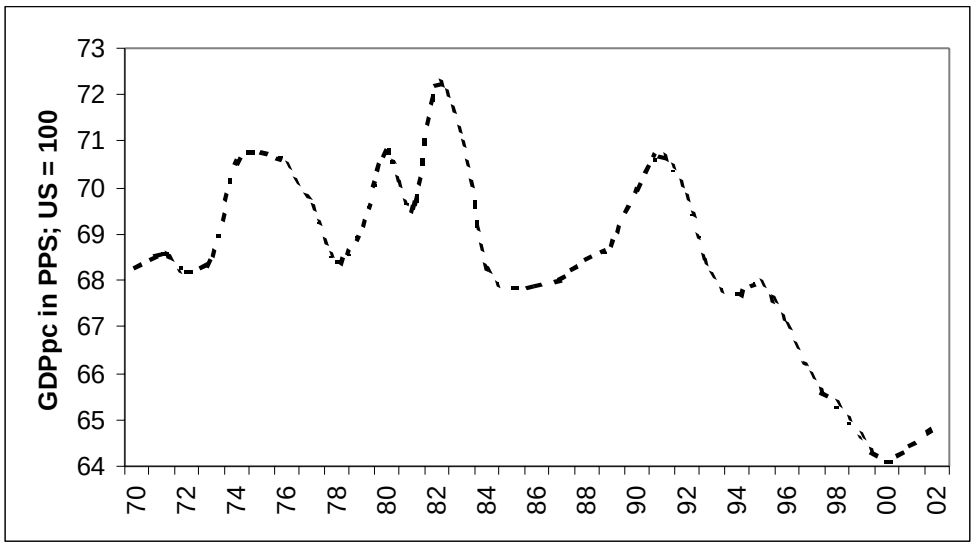
2.1 Overview of EU public finances at the start of the 21st century

The scale of the Lisbon challenge

The Lisbon European Council of 23-24 March 2000, established a new strategic goal for the EU, namely *"…to become the most competitive and dynamic knowledge-based economy in the world, capable of sustainable economic growth with more and better jobs and greater social cohesion."* In particular, the Council called for the EU to *"… raise the employment rate from an average of 61% today to as close as possible to 70% by 2010"*. Essentially, the EU has to exploit fully its economic potential so as to achieve higher living standards benefiting its citizens.

The scale of the challenge can be seen by contrasting the evolution of GDP per capita in the EU and US. After a period of catching up from the 1950s until the early 1980s, EU GDP per capita (measured in purchasing power parities) fluctuated at around 70% of the US level until 1990 (see graph 2.1). However, throughout the 1990s, the gap in relative GDP per capita widened and GDP per capita in the EU today is only 65% that of the US, some 9 percentage points lower than the peak reached in the early 1980s.

Graph 2.1: GDP per capita in the EU relative to the US 1970-2002



Source: Commission services

Such an evolution of relative living standards is explained by lower growth and poorer employment performance in the EU than in the US. Roughly speaking, the size of the EU economy in 2000 has doubled since the early seventies, whereas US GDP in 2000 is more

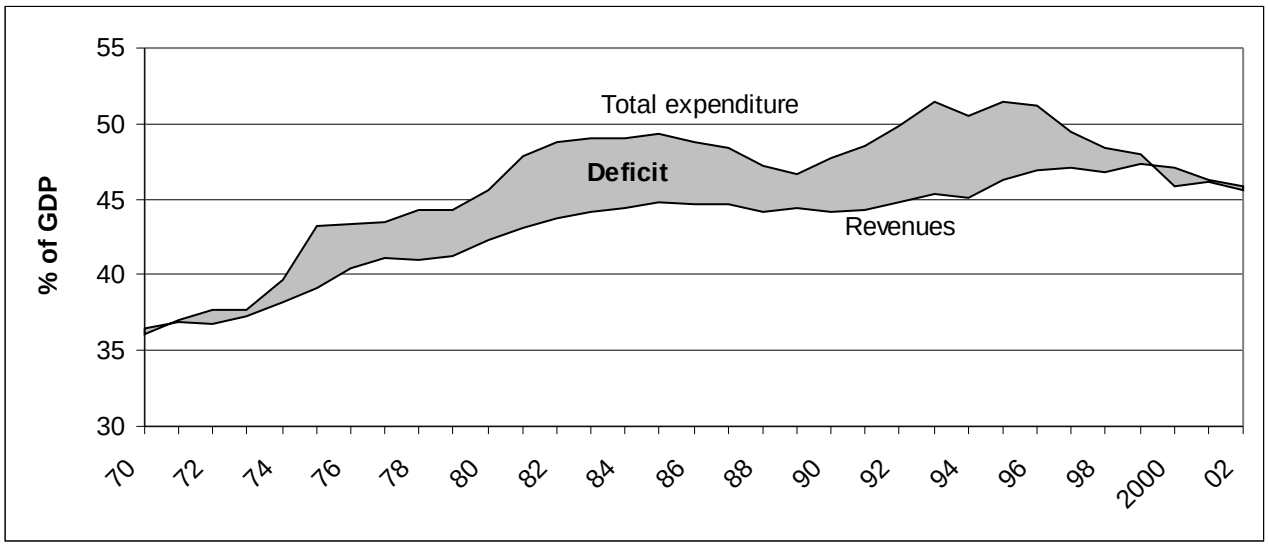
than two and a half times its level in 1970. Yet, it should be borne in mind that such differences mainly arise in the 1990's and to some extent may reflect cyclical differentials. Even more striking than the difference in growth performance between the two economies is the gulf in job creation. Today, occupied population in the EU as a percentage of the population of working age is currently 15 percentage points lower than in the US, whereas in 1970 they were comparable on both sides of the Atlantic.

To reverse this relative decline, the EU needs to mobilise all available resources. The Lisbon European Council recognised that "*achieving the new strategic goal will rely primarily on the private sector*". However, with public expenditures and taxes accounting for between 40 to 50% of national income in EU Member States, public finances have a central role to play in realising this objective. Such a role is analysed in detail later in this part, after providing an assessment of the overall structure of public finances in the EU.

Overview of public finances in the EU Governments intervene in the economy for a variety of reasons - to supply public goods and to correct market failures, to redistribute income across regions and individuals, and to stabilise output over the economic cycle. For such purposes, they use a wide range of instruments notably regulation, taxation and public expenditures. By influencing private agents' decisions on work, saving and investment, public finances affect the functioning of the real economy. To identify the links with growth and employment, it is useful to review some of the key characteristics of EU public finances and economic performance at the start of the twenty first century.

An extraordinary increase in the size of the government expenditures has taken place over the past 30 years, and it now accounts for almost half of EU GDP (see graph 2.2). General government expenditures amounted to 35% of GDP in 1970, but rose continuously to peak at over 50% of GDP in 1993. Since then, total expenditures of general government have declined somewhat to about 46% of GDP in 2000. However, the size of the public sector in the EU remains 13 and 20 percentage points of GDP higher than the US and Japan respectively, where it grew by only 4 percentage points of GDP over the same period.

Graph 2.2. General government: expenditure, revenues and borrowing in the EU, 1970-2002

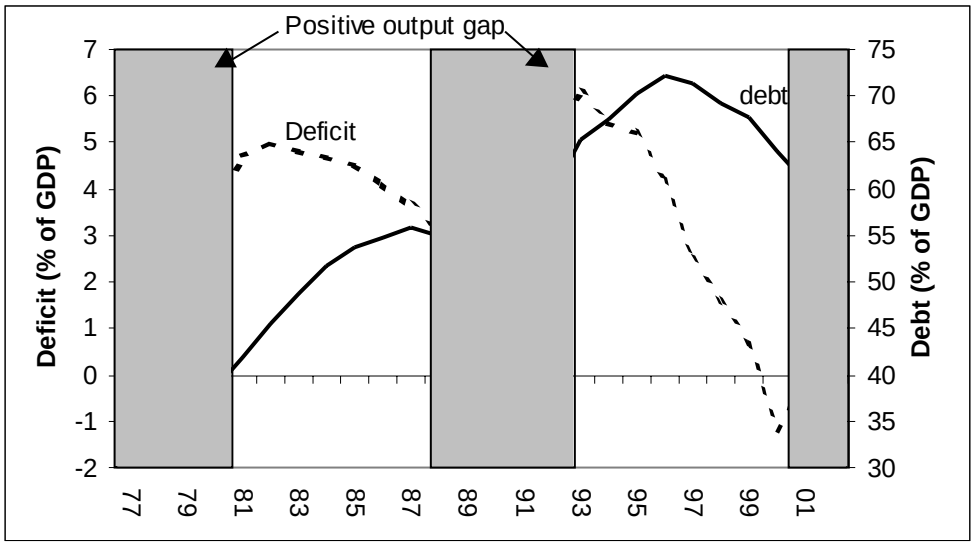


Source: Commission services

The increase in the size of the public sector until the early 1990s occurred in parallel with the emergence of large and persistent deficits (illustrated by the shaded area in graph 2.2). Almost without exception, the average general government deficit in the EU as a whole was above 3% of GDP from 1975 onwards, attaining a historical high of 6% of GDP in 1993. This development contrasts with the US and Japan, where high and persistent budget deficits were much less frequent.

With budget positions on a clearly unsustainable path and with a view to prepare for EMU through respect of the Maastricht convergence criteria, policy makers enacted a strong budgetary adjustment from 1992-93 (see graph 2.3). The general government deficit for the EU as a whole fell by 5 percentage points of GDP between 1993 and 1999. Viewed at Member State level, some spectacular turnarounds in fiscal performance were achieved such that by the end of 1999 no EU country had an excessive deficit position, i.e. deficits are well below the 3% reference value set down in the Maastricht Treaty.

Graph 2.3. Budgetary imbalances in the EU 1977-2002



Source: Commission services

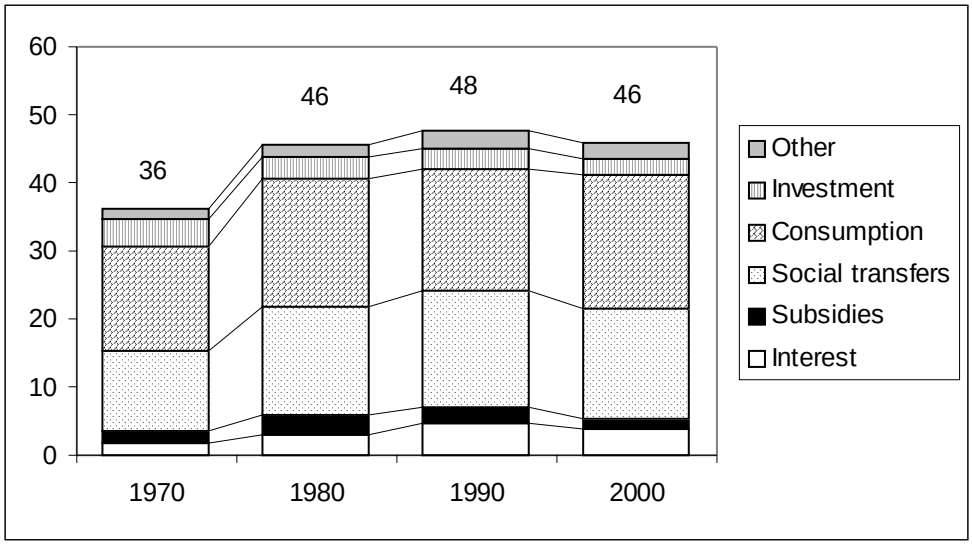
High and persistent deficits led to rapidly increasing government debt. The ratio of government debt to GDP for the EU increased from less than 30% in the late 1970s to a peak of 72% in 1996 (see graph 2.3). Since then, the upward trend has been reversed. However, the stock of government debt is still too high at 64% of GDP in 2000, and remains above 100% of GDP in three Member States (B, EL and I).

A tendency to run pro-cyclical fiscal policies is another feature of budgetary behaviour over the past 30 years. Instead of reducing government deficits and debt ratios when economic growth was favourable, governments have tended to undertake a discretionary loosening of the budgetary stance (see shaded areas on graph 2.3 which represent periods in which economic activity was above trend). This necessitated budgetary tightening during downturns to prevent deficits and debt from spiralling out of control. Fiscal policies have thereby amplified the effects of cyclical swings in a pro-cyclical way rather than having the desired stabilising effect.

Apart from investment, every component of public spending rose over the last thirty years. In particular, interest payments as a share of GDP increased from less than 2% of GDP in 1970 to 4% in 2000. Conversely, during the same period, investment spending was halved, from 4% of GDP in 1970 to 2% in 2000[4].

[4] The above figures refer only to general government expenditure. However, there is a wider circle of enterprises of public, mixed or private ownership which are in charge of the provision and/or management of network infrastructure (transport, energy, telecommunications, water supplies) and which may benefit from different degrees and forms of financial support from the general government, either for investments (e.g. grants for infrastructure construction) or for operation (e.g. public service compensation).

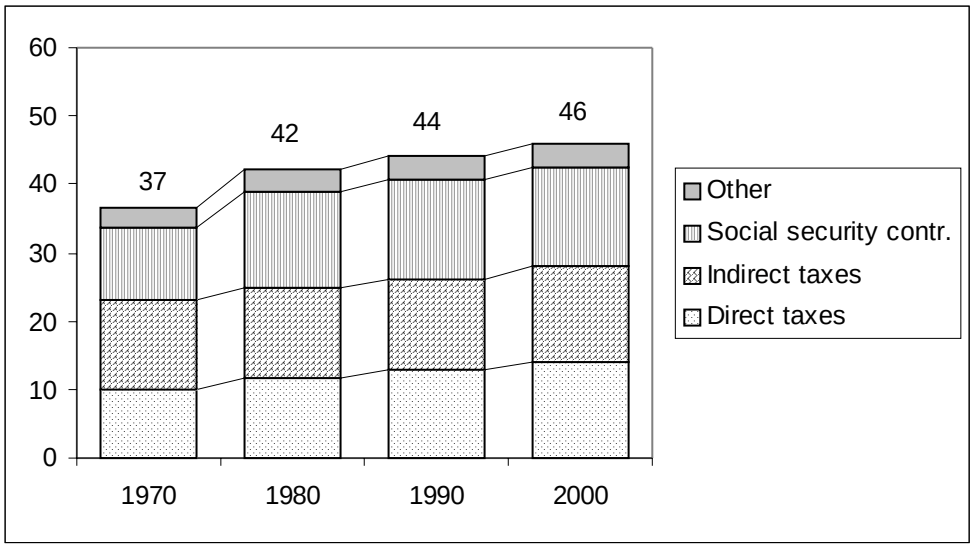
Graph 2.4. The structure of public spending in the EU, 1970-2002



Source: Commission services

In parallel with such an evolution of total spending, the tax burden grew continuously over the past thirty years to a historical peak of some 46% of GDP in 1999. It is only projected to start falling as of 2000. In addition to this increase in the tax burden, a shift has taken place towards higher taxes on labour (see graph 2.4). The shares of social security contributions and direct taxes in total tax revenues increased by 3 percentage points each since 1970. Concomitantly, the share of indirect taxes in total tax receipts fell by 6 percentage points. Overall, the tax burden on labour accounts for the bulk of the increase in the total tax burden in most Member States.

Graph 2.5. The structure of government resources in the EU, 1970-2000



Source: Commission services

2.2 The impact of public finances on growth and employment

These stylised facts might suggest that the rapid growth in size of the public sector, the changes in the composition of tax revenues and expenditures, and the persistence of large structural deficits leading to high levels of debt, all could have contributed to the EU's poor growth and employment performance in recent decades. However, the assessment of the impact of public finances on growth and employment is not straightforward. The reason is that governments pursue many policy objectives through a variety of policy instruments which inevitably means that the impact of public finances on the real economy is multiple and complex.

In addition, there is a large array of factors other than public finances which affect long-run growth and job creation. In particular, the functioning of product, capital and labour markets, and demographic developments also play a paramount role. The effects of public finances on growth and employment depend on the interplay between fiscal policies, the overall regulatory framework, as well as on private sector reactions to public actions. Moreover, where the impact of the size of spending on growth and employment is concerned, international comparisons may be misleading. Simple across-country correlations between growth and the size of the public sector lead to rather ambiguous conclusions, while activities efficiently carried out in a country by the public sector may belong to the private sphere in other countries.

Despite such complexities, there is ample evidence in the economic literature about the role of public finances in affecting growth and employment. Public finances can enhance potential growth and employment by (1) contributing to the accumulation of physical and human capital, (2) providing the right incentives through tax and benefit systems, and (3) ensuring a stable macroeconomic environment.

***The accumulation of productive factors*.** Governments enhance factor accumulation directly by investing in physical (infrastructures), human (education and training) and knowledge (R&D and innovation) capital. Social spending also plays a role, in particular by supporting investment in human capital. Public investment can also have an indirect, positive impact on total factor accumulation if it complements private investment. For instance, the provision of efficient transport, energy and other infrastructures may enhance the productivity of private sector investment and attract further investment. This complementarity can be reinforced through private-public-partnerships, which improve the efficiency of public investment by introducing cost-benefit considerations and, at the same time, ensures that social returns are factored into private investment decisions.

A priori, public spending on capital accumulation has a positive effect on growth and employment. However, the potentially growth-enhancing effects of public investment can be offset by the reactions of private agents. What counts in the end for economic growth is not public accumulation of productive factors *per se*, but total (public and private) factor accumulation. An increase in public investment will have limited or even negative effects on growth if it crowds out private investment. These crowding-out effects can arise for several reasons:

- public provision of goods and services needs to be confined to areas where there is a clear-cut case for public sector involvement, and should not inhibit economic activity that can be more efficiently carried out by the private sector. In well-known cases, public involvement has gone hand in hand with the existence of laws foreclosing entry and with abusive use of exclusive rights, which have prevented and optimal participation of the private sector. Liberalisation and privatisation in recent years have transformed a number of sectors where public sector involvement was hitherto justified on the grounds of natural monopoly. Many of these newly liberalised product and service sectors are at the forefront of incorporating new technologies and the creation of high value-added jobs. However, the need for public intervention has not disappeared. In particular, through regulation, public authorities play a fundamental role in ensuring an efficient functioning of such markets by avoiding abuse of dominant positions.

- the contribution of public investment to growth and employment also depends on how it is financed. In the past, part of public spending has been financed through deficits leading to the accumulation of a large stock of public debt. This constitutes a relatively risk-free asset, and as such it reduces the attractiveness of more risky private investment. In addition, high debt levels put upward pressure on interest rates which, by increasing the cost of capital, further reduce the number of profitable private investment projects. Therefore, mounting debts can reduce overall capital accumulation and prevent the economy from incorporating new technologies at a pace necessary to sustain competitiveness and the creation of high productivity jobs.

- Furthermore, the benefits of public spending can be undermined if they are financed through distortionary taxes that discourage investment and employment creation (see below).

These considerations on the potential crowding-out effect of private investment underline the importance of increasing public accumulation by restructuring public expenditures, as recommended by the Lisbon European Council

Providing the right incentives through tax and benefit systems. By altering incentives to work, save and invest, tax and benefit systems affect private factor accumulation and consequently growth and employment. The social protection system makes a contribution to correcting market failures by providing insurance against unemployment and illness and cover for old age, thereby promoting a more efficient allocation of resources. Social protection also plays a redistribution role which, by reducing social conflict is also conducive to growth and employment. A well designed social protection and assistance system can raise economic efficiency. Programmes, such as, for instance, unemployment insurance or family allowances, as well as policies promoting social integration, can increase participation and labour supply, while enhancing the social acceptance of structural reforms.

However, these positive effects could be counterbalanced by a negative impact on the supply and demand for labour. For instance, unconditional generous unemployment insurance and long benefit duration, if not combined with job placement support and monitoring of availability to work, might lead to benefit dependency and unemployment traps at the lower end of the wage scale. Early retirement systems, while providing a safety net to older workers in bad times, prevent them from re-entering the labour market in good times or encourage them to quit the labour market prematurely. Overall, concrete experiences in Europe and abroad support the view that reforms of tax and benefit systems, including the way in which benefits are administered, can increase participation and employment rates.

As regards taxation, high labour taxes at the lower end of the wage scale, together with steep tax breaks and high withdrawal of income-tested benefits, are a source of poverty traps and lower human capital accumulation. Whereas a reduction of the total tax burden may have a positive impact on private investment, a larger impact can be achieved if tax cuts concern highly distorting taxes (see part 4 below). Targeted tax cuts at the lower end of the productivity scale would improve incentives for firms to demand unskilled labour.

The comprehensiveness of tax/benefit system reforms is another decisive element to improve long-term growth prospects. By taking a comprehensive approach to reform, Member States can create positive growth effects, and exploit the mutually supporting impact of consistent policy strategies acting in different fields. Comprehensive reforms which provide incentives for labour force participation and human capital formation can also enhance the innovative potential of the economy, promote entrepreneurial spirits and private sector led investment and innovation.

Providing a stable macroeconomic climate. Ensuring a macroeconomic framework conducive to growth and employment requires strong budgetary discipline. This is taken to mean budgets which achieve a broadly balanced position over the economic cycle, and low or steadily decreasing public debt. In the EU context, this means a debt ratio well below the 60% of GDP reference value.

Budgetary discipline impacts on growth and employment via a number of direct and indirect channels.

As regards *direct* channels, sound public finances by supporting monetary policy in maintaining stable prices, can result in lower interest rates. This could enhance private investment, leading to higher growth of the capital stock in the medium and long run.

Secondly, the running down of public debt will lower the interest burden, providing room for reducing distortionary taxes and/or an increase in productive public spending: as described above, both actions can facilitate factor accumulation. A further direct channel is via aggregate saving, which is the sum of private and public saving. To the extent that increased public saving raises aggregate national saving, additional resources may become available for productive investment.

Budgetary discipline also *indirectly* affects growth and employment by contributing to macroeconomic stability. First, it may foster stable inflationary expectations, thereby reducing uncertainties and improving predictability for savers and investors to plan for the long run. Second, budgetary discipline ensures that governments can allow the automatic fiscal stabilisers to operate fully in the face of economic downturns thereby smoothing the business cycle. This capacity to cope with economic downturns is especially relevant in EMU, as budgetary policy may have a greater role to play in helping countries smoothen the business cycle given the loss of national monetary autonomy. Finally, achieving balanced public finances today will help countries cope with the long-term budgetary challenge posed by ageing populations. Lower levels of public debt will reduce the interest burden and thus partially offset increased public expenditures on pensions and health care A failure to place public finances on a sound financial footing to cope with ageing populations, may lead to unsustainably high tax rates in the future which will hamper growth and job creation.

3. MAINTAINING SOUND PUBLIC FINANCES IN STAGE 3 OF EMU

3.1. New budgetary challenges are coming to the fore

The previous section underlined the contribution which sound public finances can make to growth and employment directly (by freeing up resources for additional factor accumulation by both the public and private sector), and indirectly (by providing the stability conducive to savers and investors, and by being better able to cope with economic shocks). Meeting the targets of the Stability and Growth Pact (SGP) of budget positions which are "*close to balance or in surplus*" is an essential pre-condition in setting the framework for achieving the objectives of the Lisbon European Council.

Budgetary consolidation has continued in stage 3 of EMU within the framework of the SGP. Results for 2000 exceeded expectations with the general government deficit for the EU as a whole falling from 0.7% in 1999 to 0.1% of GDP. While these results are positive, the lowering of the deficit largely stemmed from increased revenues due the cyclical upturn rather than reduced spending. Budget deficits are expected to fall further in coming years, albeit slowly. The stability and convergence programmes provide for the actual deficit of the euro area to fall to almost balance for the EU by 2003. This implies that the medium-term goal of the SGP is within reach for all Member States.

Achieving and sustaining the ***SGP goal of budget positions which are close to balance or in surplus*** will result in the stock of public debt being run down at a fast pace. By reducing the interest burden, this would create room to cut taxes and could partially offset increased future spending on pensions and health care due to ageing populations. Moreover, a lower level of government debt would reduce the vulnerability of public finances to changes in interest rates. This will be especially important in the case of Member States with debt ratios above 100% of GDP. Several Member States have debt ratios still close to the 60% reference value, which are well above levels observed in the past.

As countries approach balanced budget positions, there may be greater scope for ***reducing the tax burden***, a development that could make an important contribution to raising potential output and employment. This process is already under way. However, it is essential to get the right balance between cutting taxes, investing in public services and sustaining fiscal consolidation so as to achieve a durable reduction in the tax burden. It would be counterproductive to make tax cuts now, only to find that they are not sustainable over the cycle or in the long-run and have to be reversed during a future economic downturn.

Taking a longer-term perspective, Member States need to prepare for the ***economic and budgetary implications of ageing populations***. As outlined in chapter 6, increased spending on public pensions and health care due to ageing populations poses a considerable long-term risk to the sustainability of public finances in many Member States. The concept of sustainable public finances is not limited to financing additional age-related spending without increasing deficits and public debt. It also encompasses the need for pension and

health care systems to be conducive to high employment rates, the need for a lower tax burden in line with the Lisbon objectives, ensuring that other essential public expenditures are not squeezed out, and taking account of fairness both within and between generations. A comprehensive reform strategy is required to meet the budgetary impact of ageing, encompassing the running down of public debt, labour market reforms to raise employment, and reform of public pension systems. A window of opportunity exists to introduce further reforms prior to the retirement of the baby-boom generation after 2010.

3.2 The way ahead and the response by Member States

The 2000 Broad Economic Policy Guidelines recognise the short and medium-term fiscal policy challenges identified above, and in particular the need to introduce expenditure restructuring and reductions in the tax burden while enhancing budgetary consolidation. The remainder of this section examines whether Member States are on track to meet these commitments.

Achieving the SGP goal ahead of schedule

Member States are expected to improve on the targets for 2001 set down in the stability and convergence programmes. The autumn 2000 forecast shows a balanced budget for the EU for 2001, which compares with a deficit of 0.7% of GDP in the updated 1999/2000 stability and convergence programmes. However, one should not conclude from these forecasts that Member States have surpassed their SGP targets. In fact, when account is taken of the better than expected starting position in 1999 and the fact that growth will be higher in both 2000 and 2001 than was assumed in the programmes, Member States on average could be expected to surpass the SGP targets by 0.9% of GDP without having to make additional adjustment efforts.

On this basis, the autumn 2000 forecast suggest that a relaxation of budgetary adjustment has occurred in some Member States compared with the 'real' adjustment effort implied by their stability and convergence programmes. This implies that further consolidation may be required if Member States are to live up to the Broad Economic Policy Guideline of pursuing, where appropriate, further fiscal consolidation beyond the minimum requirements of the Stability and Growth Pact .

Are taxes being cut in a safe and sustainable manner?

In the 1999-2000 updates of the stability and convergence programmes, as well as in specific announcements in the context of the draft 2001 budgets, Member States have outlined further plans to reduce the overall tax burden and to reform their tax systems (see chapter 4).

The Commission services report on *Public Finance in EMU – 2000* identified four criteria for assessing whether tax reforms can achieve a sustainable reduction in the tax burden while at same time maintaining the commitment to fiscal discipline. They are: (1) Member States must meet or make progress to the medium-term budget target of 'close-to-balance or in surplus'; (2) reforms should take into account the cyclical position and must not be pro-

cyclical; (3) account must be taken of the level of government debt and long-term budget sustainability; and (4) tax reductions should form part of a comprehensive reform package. Meeting these criteria would help ensure that tax reforms have a sustained and positive impact on growth and employment.

The first criterion implies that *uncompensated* tax reductions only be envisaged in Member States that already meet the medium-term budget target of 'close-to-balance or in surplus'. When this target is not met, tax cuts need to be matched or indeed surpassed with expenditure reductions so that progress towards the SGP goal is maintained. While considerable progress has been made in complying with the close-to-balance rule, some countries still have some way to go. In particular, cyclically-adjusted deficits in 2001 are forecast to remain at or above 1% of GDP in six Member States (D, F, I, A, P, EL).

The second criterion underlines the importance of avoiding an unwarranted structural deterioration of the public finances, which would prevent the automatic stabilisers from dampening the effects of the cycle. This can be assessed by looking at the changes in the cyclically adjusted primary balance over the cycle. Between 2000 and 2001, the cyclically adjusted primary surplus is expected to fall from 3.5 % to 3.1% for the EU as a whole. This could point to a loosening of the budgetary stance at a time when the output gap is turning positive in most Member States.

To avoid such a pro-cyclical loosening, tax cuts may need to be matched with corresponding expenditure reductions. However, economic and budgetary situations vary across countries, and the scope, timing and speed of further adjustment will need to be tailored to national circumstances. Countries with structural deficits and high debt ratios may need to focus on fiscal consolidation. Other Member States may need to redress shortfalls in public sector investment. Countries need to determine what combination of investment in public services and tax reform will most effectively raise potential output and employment. It is essential to get the right balance, which takes proper account of the position of the economic cycle and the base from which the developments are taking place.

The third criterion requires that account be taken of the level of government debt and long-term budget sustainability. Clearly, Member States whose public debt remains close to or above 100% of GDP should give priority to its reduction before envisaging large scale tax cuts. However, even Member States with debt levels at or below the 60% reference value could consider a faster pace of debt reduction as part of an overall strategy to prepare for the increased costs of ageing populations. Assessing tax cuts in light of the budgetary implications of ageing populations is not straightforward. Available estimates (see chapter 6) show that with the exception of a few countries, ageing populations could result in significantly higher public expenditures. Credibility in the long-term sustainability of public finances will be undermined if the tax reforms already announced are not matched with an equal willingness to tackle structural imbalances in the financing of pensions and health care.

The fourth criterion calls for tax reforms to form part of a comprehensive reform package. *Inter alia*, this suggests that tax cuts be focussed on areas where they have beneficial supply

side effects, and that they be complemented with reforms to benefit systems to improve incentives for employment and entrepreneurial activity.

Overall assessment

Recent budgetary developments clearly indicate that the EU is on the right track. The SGP goal of “close to balance or in surplus” is within reach and public debt is on a steady downward path. At the same time, reforms are being introduced to lower the tax burden from its historically high levels. However, further progress is required in some Member States to comply with the SGP "close-to-balance" objective, there is a risk of a pro-cyclical fiscal stance and public debt levels remain high. Overall, on the basis of four objective criteria, in Member States where tax cuts are most appropriate, there appears to be a need for them to be accompanied with reductions in government expenditure. Past experience has shown that for tax cuts to be permanent (and hence not having to reverse them when the economy slows down), they need to be accompanied with spending reforms that tackle head on the underlying reasons for the high tax burden. Having demonstrated a capacity to undertake fiscal consolidation in the run-up to EMU when the economic environment was less than favourable, Member States must now demonstrate their continuing willingness to pursue responsible fiscal behaviour during ‘good’ times.

4. TOWARDS MORE EMPLOYMENT-FRIENDLY TAX AND BENEFIT SYSTEMS

4.1. The structure of tax/benefit systems in the EU

How tax and benefit systems interact with the labour market

The search for policies to improve the functioning of the labour market and the current debate on the revision of welfare systems in Europe are interrelated. The common link is the impact of incentive effects of both tax and benefit systems on the behaviour of economic agents. Reducing the disincentive effects of tax and benefit systems is widely regarded by policy makers as being of paramount significance in tackling high structural unemployment. There is the need for a better balance between the equity goals and efficiency goals of tax/benefit systems. The former encompass the aim of providing, through tax-financed redistribution mechanisms, an adequate income to avoid the phenomena of the "working poor" and increasing income equality. The latter deal with the need to increase incentives to make work pay.

The impact of tax and benefit systems on labour supply comes through two main channels. A first channel is the benefit level relative to earnings: this affects the participation decision and can give rise to the so-called "unemployment trap". The second channel is the increase in disposable income (taking into account the combined effect of increased taxation and withdrawal of means-tested benefits) as earnings rise, and its impact on work effort or hours worked (the so-called "poverty trap").

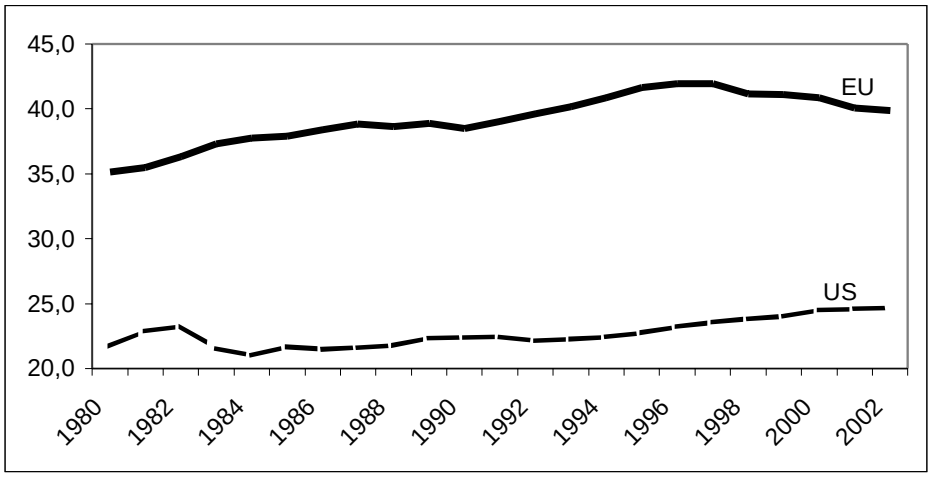
On the supply-side, it is difficult to give a precise prediction as to the size or direction of the labour supply in response to tax changes. However, there is considerable evidence that tax changes are relevant for some groups of people, especially partners in couples where one spouse is not working (usually married women), lone-parent families, and low-skilled workers.

On the demand side, tax policies that increase labour costs to employers tend to reduce profitability and competitiveness, thereby reducing labour demand and employment. Furthermore, tax policies that reduce the prices of non-labour productive factors relative to labour tend to modify the relative factor intensities to the detriment of labour. This is particularly true in the case of low-skilled labour, for whom the degree of substitution by capital is higher than for skilled workers. This is why particular attention has to be paid to the degree of taxation on workers with low skills; this is the segment of labour market which is more likely to face the risk of "poverty" or "unemployment" traps when work does not pay and for which demand is more sensitive to cost.

Overview of tax and benefit systems

As measured by the implicit tax rates[5] on employed labour, the overall tax burden on labour in the EU has been steadily increasing over the last thirty years. In 1970, social security contributions and personal income taxes on labour income represented slightly less than 30% of total labour costs. Ten years later, in 1980, figure was 35% and reached a peak of at around 42% in 1996-97. Since then, the average tax burden on labour in the EU has been decreasing, and in 2002 is projected at 40% (graph 4.1). Almost three quarters of the burden arise from social security contributions (SSC)[6]. In the US, the tax burden on labour is about 25% and is equally divided between SSC and personal income taxes. Within the EU, the implicit tax rates are significantly above average in S, B, DK, D and F, whereas low rates are recorded in IRL and the UK.

Graph 4.1. Implicit tax rates on employed labour in the EU and the US, 1980-2002



Source: Commission services

The tax burden on low-paid labour, an important factor in determining low-skilled unemployment, is also substantially higher in the EU than in the US (see table 4.1). Only in IRL, L, and the UK are the average tax rates on low and middle wages similar to or lower than those in the US. In A, B, DK, D, FIN, F, I and S, social security contributions and personal income taxes represent 40% or more of the cost of a single worker with no children earning 67% of the average wage. The bulk of such a high tax burden on low-paid labour arises from social security contributions, while the share of personal income taxes is relatively minor.

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5 The implicit tax rate is the ratio between taxes on employed labour (personal income taxes on labour income and social security contributions) and total labour costs.

6 In Europe, social security contributions are mainly determined by insurance principles, since they give rise to individual insurance or benefit entitlements. In some industrial countries, such as the US, social insurance is partially financed on private grounds.

Table 4.1. The tax burden on low and middle wages

(Income tax plus social security contributions in 1999 as % of labour costs)

	(1)	(2)	(3)	(4)
B	32,6	40,8	49,5	52
DK	14,5	31,3	41,7	41,7
D	32,3	35,6	47,7	47,7
EL	34,3	36,2	35	35,9
E	29,5	33,7	34,8	37,5
F	32,7	39,5	41,6	44,3
IRL	-1,2	23,8	24,9	28,2
I	35,7	43,3	48,8	49,4
L	8	13	29,7	27,1
NL	22,4	33	38,8	39,3
A	19,8	32,2	41,1	43,4
P	22,4	26,8	30,8	32,6
FIN	27,9	40,8	44,2	46
S	40,9	45,2	49,2	50,2
US	15,1	24,8	28,4	26,4
JAP	15,6	15,6	19,4	19,6

(1) single individual with two children, earning 67% of the APW (Average wage of production workers)
(2) married couple with two children and a single earner at the APW.
(3) single individual with no child, earning 67% of the APW.
(4) married couple with two children and two earners, with earnings split between the two
two partners at 100% and 67% of the APW

From the perspective of incentives to increase labour supply and especially to assess the risks of "poverty traps", marginal tax rates[7] are more relevant than average rates. Over the period 1997-99, most Member States (D, L and S excluded) succeeded in lowering

[7] The OECD calculates the marginal tax rate as the additional personal income tax and employee social security contributions paid when gross wage earnings rise. This is a combined (explicit and implicit) marginal rate in that it takes into account the withdrawal of income-tested family allowances and tax credits. For details on this and other issues discussed in this chapter, see the note to the EPC on "Reforms in tax benefit systems in order to create employment incentives", ECFIN/0590/00-EN.

marginal tax rates on low and medium earnings. This reduction was greatest in E, IRL, and NL. Nonetheless, marginal rates remain high, ranging from 40% to 50% and are even higher in B, D, DK, FIN, NL. However, in a majority of Member States the marginal tax rate is lower than in the US.

The distortionary effects of taxes very much depend on their interplay with benefit systems. Many countries means-test family allowances and other benefits. Thus, as income rises, benefits are phased out and this is equivalent to an additional tax that can raise the marginal rate to very high levels, thereby discouraging any extra work-effort.

As far as total government spending on social protection is concerned, it has diminished as a percentage of GDP in most Member States since 1993, predominantly via the share of benefits which are directed to working-age population. Such a fall can be attributed to a number of factors, including normal cyclical evolution of economic growth and unemployment developments, and benefit reforms to a lesser extent.

Table 4.2. Social transfers in the EU, 1993-1997 (% GDP)

	All transfers			Transfers to working age people (1)		Disability		Unemployment	
	1997	Change 1993-97	Change 1997-99 (2)	1997	Change 1993-97	1997	Change 1993-97	1997	Change 1993-97
B	20,0	-1,2	-0,4	5,4	-0,7	1,5	-0,3	3,3	-0,4
DK	18,9	-1,1	-1,1	6,8	-2,1	2,3	0,1	3,5	-2,0
D	20,0	0,6	-0,3	4,6	-0,1	1,6	0,1	2,4	-0,3
EL	15,2	0,7	0,1	1,7	-0,1	1,2	-0,1	0,5	0,0
E	15,0	-2,3	-0,8	4,2	-2,3	1,5	-0,1	2,7	-2,2
F	19,8	0,2	-0,3	3,7	-0,3	1,0	-0,1	2,3	-0,3
IRL	10,3	-2,3	-0,6	3,7	-0,6	0,8	0,0	2,6	-0,7
I	19,4	0,9	0,1	1,9	-0,4	1,5	-0,2	0,4	-0,2
L	n.a.	n.a.	-0,2	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
NL	21,0	-2,9	-1,2	7,4	-1,2	4,1	-0,7	3,2	0,2
A	19,8	-0,6	-0,5	3,3	0,3	2,0	0,4	1,2	-0,1
P	12,7	0,7	0,1	3,4	-0,1	2,3	-0,2	1,0	0,0
FIN	19,6	-4,3	-1,9	7,4	-2,5	3,4	-0,9	3,5	-1,6
S	19,6	-3,5	-0,7	6,2	-1,2	2,6	-0,4	2,9	-0,8
UK	17,8	-1,3	-1,0	3,7	-0,8	2,8	0,0	0,9	-0,8
EU-15 (3)	18,8	-0,4	-0,5	4,0	-0,6	1,8	-0,1	1,9	-0,5

Source: Eurostat, Social protection database, ESSPROS

(1) Includes unemployment + disability benefits + social assistance.

(2) Source: Ameco, DG ECFIN, European Commission.

(3) Weighted by real GDP share 1997, excluding L.

In 1997, total transfers were some 19% of GDP in the EU as a whole. Only in the lower income countries (EL, E, IRL, P) was the share of total transfers in GDP considerably lower than the average (table 4.2). Overall, one quarter of social transfers goes to working-age people in the form of disability, unemployment and social assistance. Of the three items, the latter is relatively marginal. Unemployment benefits accounted for more than 3% of GDP in B, DK, the NL, and FIN. Disability benefits above 3% of GDP are only found in the NL and FIN.

The level and duration of unemployment benefits in relation to earnings are important in determining the take-up of jobs to the extent that job seekers have some choice. Net

replacement rates[8] for low-paid workers are relatively high in several countries (see table 4.3) and this may lead to unemployment traps[9]. In the case of families with children, the out-of-work income in the first month of unemployment is 80% or more of in-work income in eight countries (DK, FIN, NL, S, L, P, F and UK). The net replacement rate after five years out of work remains close to that of the first month. In some countries (FIN, NL, S, L, UK and I), it is even higher than in the first month, and only in EL (and F) is it markedly lower. For single earners, the net replacement rates are somewhat lower than for families with children, and they fall more rapidly if they stay unemployed.

Economic incentives to take up low-paid or part-time jobs are rather low in most countries. In 1997, the amount of incremental earnings which were "taxed away" when the unemployed person moved from being unemployed and in receipt of benefits to part-time employment (a 40% work effort) was very high in most countries: over 100% in half of countries (L, P, A, FIN, D, B, EL) and 80-90% in the rest of the countries (except in France: 70%). In addition, the effects that tax and benefits have on household income vary in function of family characteristics. In most countries, the incentives for the second earner to take up a job are higher when the principal earner works compared with when he/she is on unemployment benefits. Yet, even when the principal earner works, around 50% of the income increase is taxed away in B, DK and D.

Table 4.3. Net replacement rates of the employed at low (67% of APW) wage level, 1997

	Married couple, 2 children,1st month of unemployment	Single earner, 1st month of unemployment	Married couple, 2 children, 60th month of unemployment	Single earner, 60th month of unemployment
B	75	84	79	61
DK	95	89	92	67
D	74	69	61	75
EL	48	55	5	0
E	78	70	61	35
F	86	83	60	55
IRL	73	45	73	45
I	52	36	75	39
L	87	82	91	67
NL	90	92	94	84
A	79	57	76	54
P	86	87	86	61
FIN	94	72	100	79
S	90	77	100	84
UK	83	73	95	73
US	51	59	61	10

Source: OECD: "Benefit Systems and Work Incentives", Paris, 1999

8 Net replacement rates describe the relationship between out-of-work and in-work income, taking into account the impact of means-tested benefits and taxes paid in both situations. It is defined as a ratio of disposable income based on social benefits when out of work and disposable income earned from work.

9 It should be borne in mind that work-related costs (viz. transportation and child care) and other factors, not included in replacement rates, also reduce the take-home pay and further reduce the attractiveness of taking up employment.

4.2 The way ahead and the response by Member States

Community recommendations

The unemployment problem has been high on the EU political agenda ever since the Commission's *White paper on growth, competitiveness and employment* of 1993. The BEPG since 1998 have invited Member States to (i) review and adapt tax and benefit systems to ensure that they actively support employability and job creation, and (ii) reduce the overall tax burden and especially the tax burden on low-paid labour, within continued fiscal consolidation, i.e. via reduced spending or shifts to environmental, energy or consumption taxes. These recommendations have also been included in the Employment Guidelines since 1998, in particular in guidelines 4 and 14. Also the *Communication on a concerted strategy for modernising social protection* calls for reforms to "make work pay".

Such policy recommendations have been deemed necessary on the ground:

- The financing of increased public expenditure, including social security systems, has contributed to an excessive tax burden, particularly on labour, and, therefore, to lower growth and employment;

- the considerably lower tax and social contribution burdens in other countries, such as the US (which mirrors a lower public expenditures in percentage of GDP and higher private expenditure on social security);

- similar fiscal changes under way in other countries, which have triggered fiscal competition inside and outside the EU;

- the diversion of labour demand and supply to the informal economy, for instance, in order to evade high pressure resulting from taxes and high social security contributions;

- the growing awareness that tax/benefit systems in the EU appear to lower the work incentives faced by people with low earning potential.

This last factor, in particular, and the wide acknowledgement of the need to "make work pay" explain why one feature of many of the reforms has been (and should continue to be in the future) the reduction of taxation on labour, especially on low-skilled workers. There is also a growing perception that, at least in the near future, tax reforms should be more focused on enhancing labour supply responses, given the need for a substantial increase in the participation and employment rates in view of the ageing population. With a view to avoiding undue distortions in product markets and, particularly, in the functioning of the Internal Market, such reforms must be implemented in accordance with Community regulations on state aids.

Lowering the tax burden on both capital and labour is expected to enhance physical and human capital accumulation, increase participation and boost the demand for labour. General reductions of personal income taxes may contribute to wage moderation by reducing the tax wedge on labour. Moreover, in a number of Member States, reforms aiming at reducing the degree of progressivity of income taxes may enhance incentives to participate in the labour market at the top end of the household earnings scale . This could

particularly impact on high-skilled second earners, most of whom are women. In addition, cuts targeted at the lower end of the wage scale will mitigate risks of unemployment and poverty traps. They will have a positive effect on the demand for low-productivity workers, as long as tax reductions are effectively passed on to firms. Also, the lowering of taxes on labour will contribute to making work pay by increasing the after-tax take-home pay.

To illustrate the potential effects of various tax and benefits reforms on the economy, the report *Public finances in EMU – 2000* presented a number of simulations for the EU using the Commission services' QUEST model. These simulations are summarised in box 1. All in all, tax cuts can have sizeable effects on output, investment and employment. However, in order to ensure their durability, the need to be accompanied by offsetting spending reforms. It is also important to conduct tax reductions within the framework of comprehensive economic reforms so as to enhance the beneficial effects of shifting the tax burden away from labour to other tax bases.

Simulated long-run effects of tax reforms on GDP, employment and investment.

According to analysis presented in *Public Finances in EMU -2000*, the effects of tax cuts depend on whether or not they are accompanied by spending retrenchment (see table 4.4). A tax cut, **fully offset by a reduction in government consumption**, is likely to have a positive economic impact in the longer run. Depending on the type of tax reform a reduction of taxes in the order of magnitude of 1% of GDP, could increase GDP between 0.5 and 0.8% after 10 years. Employment could be higher between 0.5 and 1% and investment would be stimulated. The economic expansion would also lead to a reduction of government deficits of roughly 0.5% of GDP after 10 years. A tax cut, **without offsetting spending cuts**, would however lead to an increase in the budget deficit of around 0.75% of GDP. That means that the degree to which tax reforms are self financing is only about one quarter.

The impact on employment would be larger if the tax cut is targeted on labour. The long-run effects on employment of a reduction by 1% of GDP in the **tax burden on labour income offset by a reduction in government consumption**, amount to 1% (1.5 million jobs). This contrasts with the 0.5% increase obtained for general tax cuts. That result must, however, be interpreted with caution, as it depends strongly on the assumed benefit rule. Overall, employment effects are larger if the reservation wage is constant in real terms than if unemployment benefits are linked to net wages. In the first case, the tax cut is partially passed onto firms and in the form of lower wage costs. As a result, employment increases without lowering net wages.

Another strategy to reduce taxation on labour, in line with the Employment Guidelines, is a **tax shift from labour income to indirect taxes**, such as taxes on consumption, energy and polluting activities[10]. Consumption taxes are less distortionary than labour income taxes because they fall on all production factors and not only on labour. In the case of a consumption tax on environmentally damaging goods, the tax will help reduce an existing distortion. The positive effects are not however straightforward since the impact of a tax shift from labour income to consumption depends very much on the benefit system and especially on the **accompanying policies towards recipients of social transfers and unemployment benefits**. All in all, the key issue is whether the tax shift is passed onto firms and results in a lowering of gross wages. This, in turn, depends on whether benefits change to compensate the impact of value added taxes on consumer prices. A reduction of labour taxes by 1% of GDP, coupled with an increase in value added taxes, would increase employment by almost 0.7% in the long run if transfer recipients are not compensated for their income loss. However, if transfer recipients were fully compensated for the increase in value added taxes, the employment effect would be half that figure.

[10] Tax shifts away from labour towards energy are sometimes expected to generate a "double dividend" y reducing simultaneously pollution and unemployment. Shifting taxes on consumption is expected to generate positive employment effects

Table 4.4. The long run GDP, Employment and Investment Effects of Tax Reforms (1% of

Tax Experiment	GDP	Labour	Investment
(1) Reduction of Labour, Corporate and Value Added Taxes *)	.54	.54	1.28
(2) Reduction of Labour and Corporate Taxes only *	.65	.57	1.88
(3) Reduction of Labour Taxes only (*)	.81	.97	1.24
(4). Tax shift from Labour to VAT (**) (without compensating transfer recipients)	.66	.82	.73
(5). Tax shift from Labour to VAT (***) (with compensating transfer recipients)	.37	.48	.32

(*) The simulations in row (1) – (3) are conducted under the assumption that unemployment benefits are kept constant in real consumption terms, i. e. the reservation wage is assumed to remain constant. In this case the labour tax reduction is partly shifted onto firms in the form of lower wage costs. Under the assumption that unemployment benefits are linked to net wages, the real output and employment effects of a labour tax reform would be less strong and could even be absent.
(**) The experiment reported in row (4) assumes that unemployed workers (and other transfer recipients) are not compensated for the increase in consumer prices, i. e., the reservation wage is assumed to fall by an amount equivalent to the rise in consumer prices.
(***) Unemployed workers (and other transfer recipients) are compensated for the increase in consumer prices.

The main features of tax reforms in Member States

In the updates of the stability and convergence programmes, in the national action plans for employment, as well as in more recent announcements in the context of the budget plans for 2001, Member States have indicated their intention to reduce the overall tax burden and to reform their tax systems. These proposals together with a number of reforms already applied during the last three years are summarised in annex A. While reforms vary in coverage and depth, most Member States are reducing the total tax burden mainly by cutting direct taxation on personal and corporate income. Nevertheless, several countries have reduced SSC in recent years.

Annex A suggests that there is a common direction in EU tax policies towards lowering the tax burden on labour. Most Member States have already implemented and others have just announced personal-income-tax-cutting initiatives (reduction in marginal rates, increase in both family allowances and minimum exempted income) and reductions in both employers' and employees' social security contributions. Some of the initiatives are clearly across-the-board tax cutting measures (D, ES, F, I, NL). Many consist of lowering marginal tax rates at the top and the bottom of the income scale, (D, IRL), or sometimes on all the income brackets (NL, F, L, ES, ES, FIN, S, I). Reforms also provide higher family allowances and higher thresholds for income tax (UK, I, ES) so that fewer wage earners pay tax. In some cases (UK, NL), family allowances have been transformed into tax credits. In other Member States, tax-cutting measures appear to be more targeted at reducing fiscal pressure at the low-to-middle end of the income distribution (B, , DK, EL, A, IRL, and UK).

Cuts in social security contributions are targeted more at employers than at employees in most Member States (B, EL, ES, F, IRL, I, NL, FIN). Some Member States are granting tax

rebates to employers for providing new jobs (I, P, EL), or more specifically for recruiting young workers (B), long-term unemployed or low-paid workers (FIN, NL, S). In the UK, subsidies are granted to the employers when they recruit young formerly unemployed workers.

Reforms of personal income taxes are also reducing the burden on capital, albeit to a lesser extent than that on labour, because personal income taxes are also paid on capital income. In addition, measures implemented by many Member States also concern corporate income. In a majority of Member States, the reduction of capital taxes is carried through a lowering of corporate taxation and taxes on capital gains[11]. In other countries, the reforms are more limited and aim at improving the functioning of capital markets and at creating incentives for risk, venture and intangible capital.

Under the growing pressure of the liberalisation of goods, services and capital markets, Member States are facing increasing tax competition. Although improving the functioning of capital markets seems to be a major aim of reforms, tax competition may also have been a driving force for lower taxes on capital. In the absence of tax co-ordination at the EU level, the constraints stemming from tax competition may remain a medium-term obstacle to targeting tax reforms in the Member States at those areas where reforms would be most beneficial for growth and employment. The adoption of the fiscal package proposed for saving and business taxation, will help broaden the tax base and enable future reductions in tax rates.

As regards indirect taxes, measures announced to date have been rather scattered. Leaving aside I and NL, where general increases in VAT rates have been announced, changes in indirect taxes in other Member States only affect a small share of the total taxes base (e.g. lowering VAT on certain labour-intensive sectors). Therefore, the tax-shifting away from labour to other tax bases such as consumption has been very limited.

The main features of benefit reforms in Member States

The most recent reforms of benefit schemes are presented in annex B. Reforms of unemployment benefit schemes have mainly involved the control of eligibility requirements and the improvement of the way benefit schemes are administered. No country has recently carried reduced benefit levels or duration (DK is an exception where the duration still remains one of the longest). There has been some tendency to increase in-work or employment related benefits, such as targeted wage subsidies, tax credits, and/or benefit transfers to the employer recruiting an unemployed person. These reforms seem to provide support to active labour market programmes. However, they have been undertaken mainly by giving additional benefits if the unemployed decide to take up a job or labour market training. Measures include enabling workers to keep unemployment benefits during training, back-to-work schemes and transferring benefits, or providing other wage subsidies to the employer when an unemployed person has been recruited (B, D, E, NL, P, FIN, S, UK). Some countries (B, P, A, FIN), have also made efforts to encourage part-time work instead of unemployment, mostly by means of loosening conditions for part-time unemployment benefits.

[11] However, it is worth mentioning that FIN has increased corporate income taxes this year.

Even though there is some tendency to increase the use of in-work and employment-related benefits (B, F, IRL, UK), the shift from passive to active measures has been limited. Passive benefits remain important and particularly the introduction of in-work benefits on a larger scale has not taken place. Moreover, many reforms, especially in favour of young and long-term unemployed, seem to provide only temporary help in terms of better incentives for work. It remains to be seen whether this is sufficient to keep these people in permanent employment, or at least significantly beyond the period when the extra bonuses are paid.

After a long period when early retirement was the norm, most Member States (B, DK, D, F, I, NL, A, FIN, S, UK) have been determined in reforming schemes so as to induce older workers to prolong their working life. Among the means used for this purpose are also the tightening of eligibility rules and making early retirement less attractive (B, DK, F, I).

When interpreting the changes described in annex B, one has to keep in mind that the starting positions of countries and reforms less closely related to the functioning of the labour market, have not been considered in the table. Therefore, very firm conclusions on reform efforts are not possible. In addition, the implementation of a comprehensive reform strategy takes a long time and results can be seen only after a number of years. The experiences of some Member States (e.g. DK, NL) show that unemployment can be significantly reduced by pursuing long-term reform strategies.

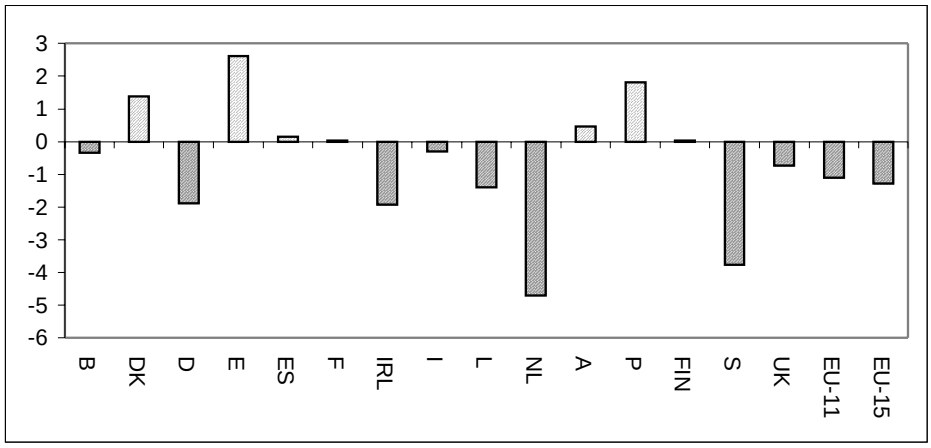
Overall assessment

All in all, the tax reforms implemented in the past three years represent a move in the right direction. Many Member States have made progress in rendering the tax system more employment friendly, by lowering the fiscal burden on labour as well as by reducing marginal tax rates. However, overall taxation on labour still remains very high by international standards in many Member States. Furthermore, the reform effort has been unequal across Member States. Some countries have undertaken a more comprehensive approach while in others the reforms of the tax system have been piecemeal.

As shown in graph 4.2, already implemented or planned tax reforms are lowering the tax burden on labour in most Member States. On the basis of Autumn 2000 Commission Forecast, the implicit tax rates on employed labour are expected to fall by more than 1 percentage point in the EU as a whole as well as in the euro area. Quite large reductions are projected for D, IRL, L and NL[12]. The reforms introduced or announced to date mainly concern direct taxes, which typically have large distortionary effects.

[12] Changes shown in the graph should be interpreted with care, since they may not only reflect structural changes in the tax burden on labour, which will be due to tax reforms, but also cyclical developments independent of such reforms.

Graph 4.2. Changes in implicit tax rates on employed labour, 1998-2002 (pps)

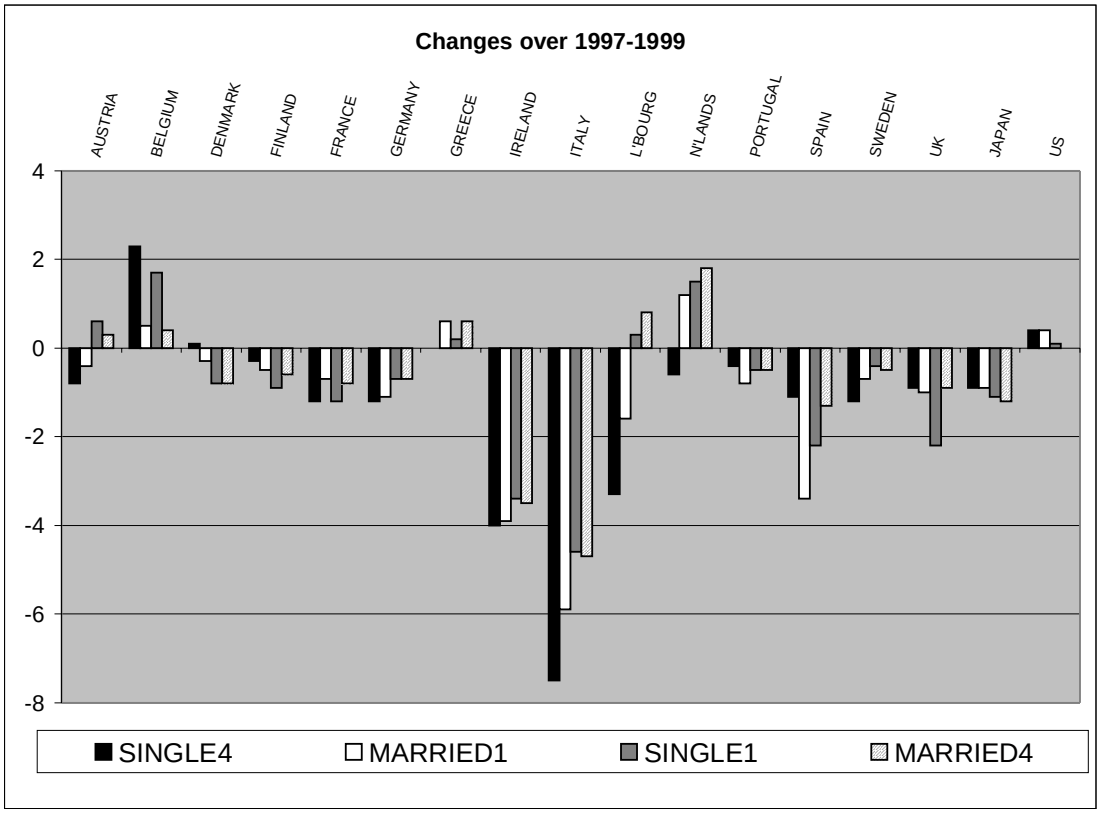


Source: Commission services

Where the tax burden on low-paid labour is concerned, early effects of the reforms can be observed in the evolution of the tax burden on low-paid labour between 1997 and 1999 (graph 4.3). Except in B, and the NL, where taxes on average and low wages slightly increased, the tax burden was reduced across the EU. Especially significant are the reductions observed in IRL, I and E. Further reductions directed at the low end of the wage scale are expected as a result of more recent tax cutting measures, especially in France, Germany, Italy and the Netherlands. All in all, it is still fair to say that, in most countries, the tax reductions on labour have been more general than targeted.

As regards benefit systems, efforts to improve work incentives have focused more on benefit eligibility than on net replacement rates, where changes have been relatively small, without any clear pattern of targeting. In most countries, unemployed people still face few economic incentives to take up job at low wage levels. There has been some tendency to increase employment-related benefits, thereby supporting active labour market programmes. As shown in the Joint Employment Report, there has been a growing emphasis on active labour market policies, but these efforts in shifting the balance from passive policies must be speeded up, reinforced and intensified.

Graph 4.3. Changes in average tax rates on low wages, 1997-1999



Source: OECD, Taxing wages 1998-1999

5. PUBLIC FINANCES FOR THE KNOWLEDGE-DRIVEN ECONOMY

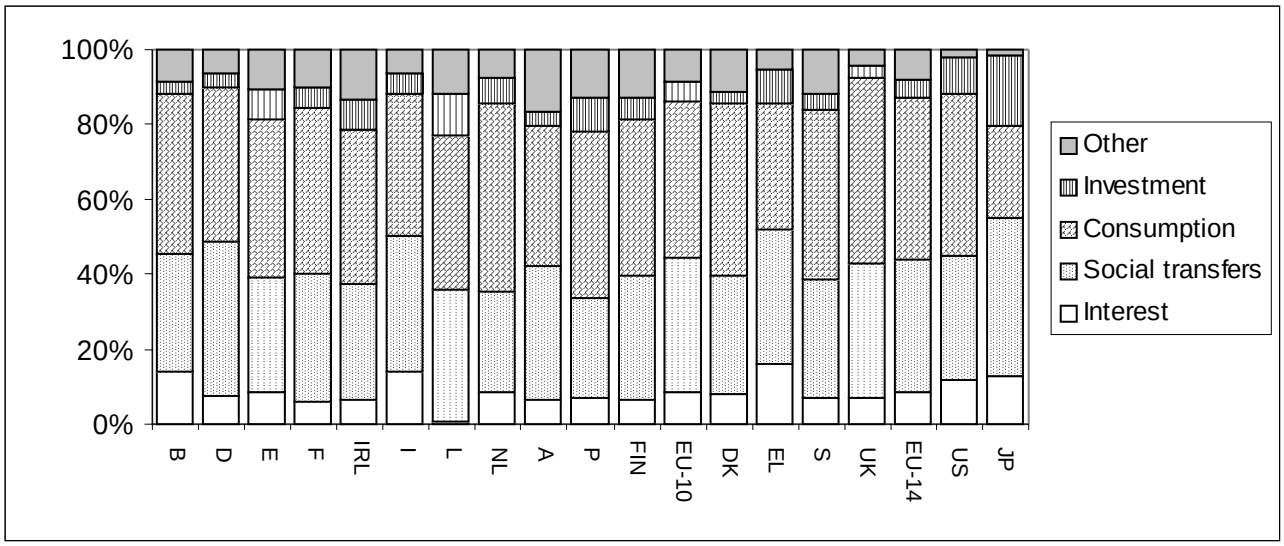
5.1 Comparing the structure of the government spending

Considerable differences in the structure of public spending across Member States

Public expenditures account for between 40% and 50% of Member States' GDP. The total share of government expenditure in GDP varies considerably across Member States. It ranges from some 50% of GDP in B, DK, F, A, and S, compared with less than 40% of GDP in IRL and the UK. However, at 31% of GDP, the size of the public sector in the US is much lower than in any Member State.

In most Member States, government consumption represents almost half of total government expenditures, while social transfers account for around a quarter (see graph 5.1). Significant differences are recorded across countries as regards the respective shares of public investment and interest payments. The share of public investment in total spending is highest in EL, E, IRL, P and L. Regarding interest paid on debt, the share in total government spending is comparatively high in B, I and EL.

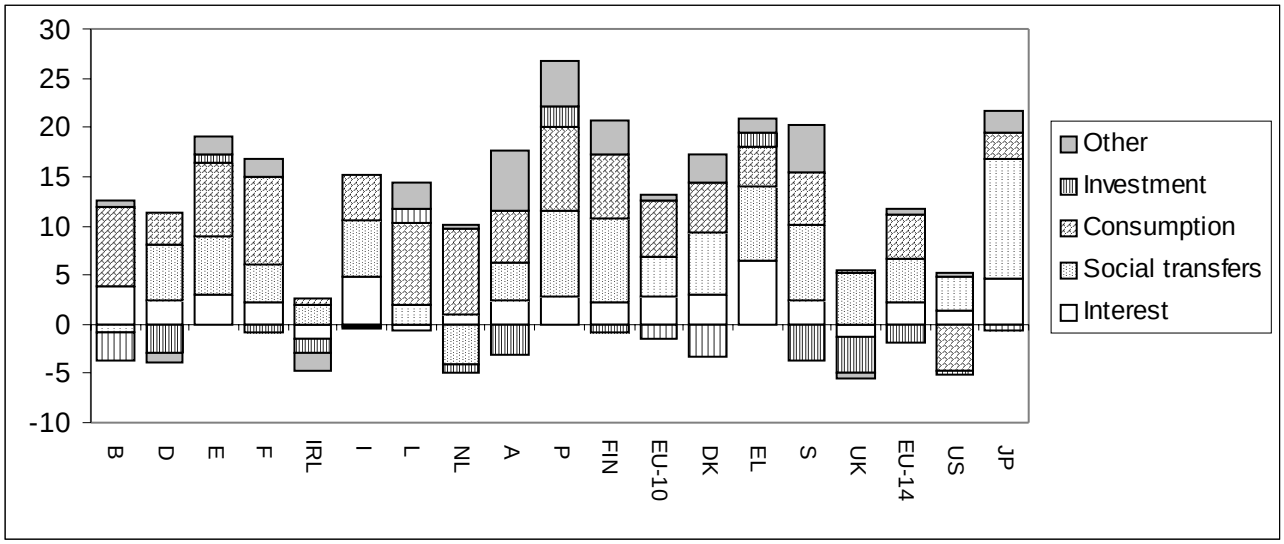
Graph 5.1 The structure of government spending, 2000



Source: Commission services

Almost every component of government spending in GDP increased in size between 1970 and 2000 (see graph 5.2), except public investment. In many countries, interest payments and social transfers account for almost half of the total increase in government expenditure observed between 1970 and 2000.

Graph 5.2. Changes in the components of government spending, 1970-2000 (% of GDP)



Source: Commission services

The difficulties in comparing public expenditures across Member States

The Lisbon European Council focussed on those public expenditure that make the most direct contribution to growth and employment, in particular those which support the strategic goal of moving towards a knowledge-driven economy. The European Council called for an assessment, on the basis of comparable data and indicators, whether adequate concrete measures are being taken in order to redirect public expenditure towards increasing the relative importance of capital accumulation – both physical and human – and support research and development, innovation and information technologies.

To this end, the remainder of his chapter examines Member States' efforts to redirect public expenditure towards capital accumulation, both physical and human, and to support research and development, innovation and information technologies. Such an examination is timely given the ongoing debate on the so-called "new" economy.

However, there are considerable difficulties making cross-country comparisons and caution needs to exercised when interpreting data. Unlike other chapters in this Communication, there is a severe lack of timely data on both inputs by the public sector (i.e. a comparable functional classification of spending) and output (the efficiency and economic benefits of such expenditures). It has also proved difficult to obtain detailed information on recent measures being taken Member States'. Consequently, it is not feasible at this stage for the Commission to fully respond to the request of the Lisbon Council, and further work will be required in the future.

Comparisons of public spending should also take account of institutional differences across countries, including the distribution of total factor accumulation between public and private sectors. In the end, what counts for growth is total rather than public capital accumulation taken in isolation. As regards fostering the "new" economy, providing a proper incentive

structure for private agents is at least as important as direct public sector intervention[13]. In this respect public spending in the form of state aids needs to be carefully controlled to ensure that it does not delay necessary restructuring or protect enterprises from the effects of market developments. Account also needs to be taken of differences across Member States in tender procedures, public procurement, outsourcing, and taxes. Unfortunately, the data available does not allow for a thorough assessment of such factors.

Notwithstanding these limitations, greater efforts are needed to increase the investment necessary to facilitate the development of the information society. Governments must also put more emphasis on education and training in order to equip European citizens with the necessary skills for an information society, while promoting the involvement of the private sector on innovation and R&D activities.

Such efforts have to be made in a framework of sound fiscal policies so as to keep the tax burden on a decreasing path and to enable countries prepare for ageing populations. To meet the objectives of the Lisbon European Council, efforts to enhance capital accumulation must come through expenditure restructuring, and not an increase in overall expenditure. Furthermore, restructuring of public spending should be complemented by institutional and structural reforms in order to optimise government spending, enhance the role of market mechanisms and introduce adequate incentive systems to promote private accumulation of physical and human capital. To some extent, higher rates of technical progress in the US are due to more research and development efforts undertaken by US companies. It needs to be assessed whether tax systems in the EU are sufficiently conducive to investment in intangible capital, such that Europe can compete with the US in the high tech sector.

It is through a balanced combination of spending restructuring, tax policies, and structural reforms that the EU can meet the challenge brought about by the new economic, technological and institutional setting.

5.2 Physical capital (infrastructure)

Despite the large increase in total public spending over the last 40 years, government investment as a share of GDP dropped from above 4% in the 1960's and early 1970's to below 2% in the late 1990s. In 2000, it is expected to reach a minimum of 1.8% of GDP in 2000. Commission forecasts projected the share of public investment in GDP to be around 2½% by 2002.

Aggregate figures for the EU conceal some important differences across Member States. Over the past thirty years, public investment increased significantly in L, P and EL, while it recorded relatively large falls in B, D, A, DK, S and the UK. This contrasts with the US, where the share has remained stable, and at 3% of GDP continues to be higher than the EU average (graph 5.3). In E, F, L, NL, P and EL, public investment as a share of GDP is comparable to or higher than in the US, while in B, D, A, DK and especially the UK, public investment represents less than 2% of GDP.

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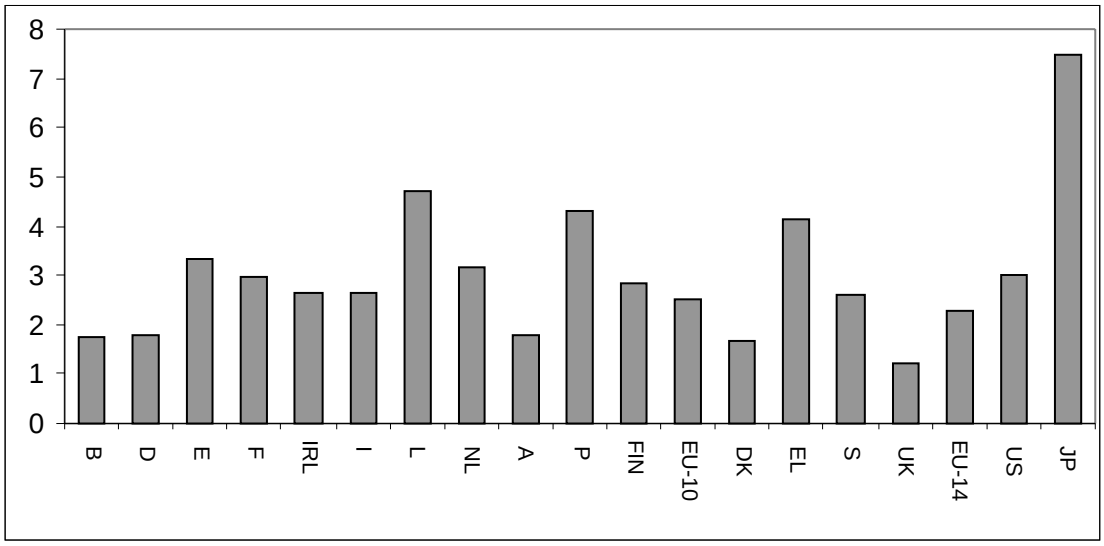
[13] This seems to be particularly relevant where investment in fixed telecom infrastructure is concerned. Such an infrastructure is financed either fully by private operators or by enterprises in which the state retains partial ownership but whose investment is classified as private not public. In particular, all investment in mobile infrastructure is private investment. In addition, mobile operators for 3rd generation mobile licences have been a source of public revenues.

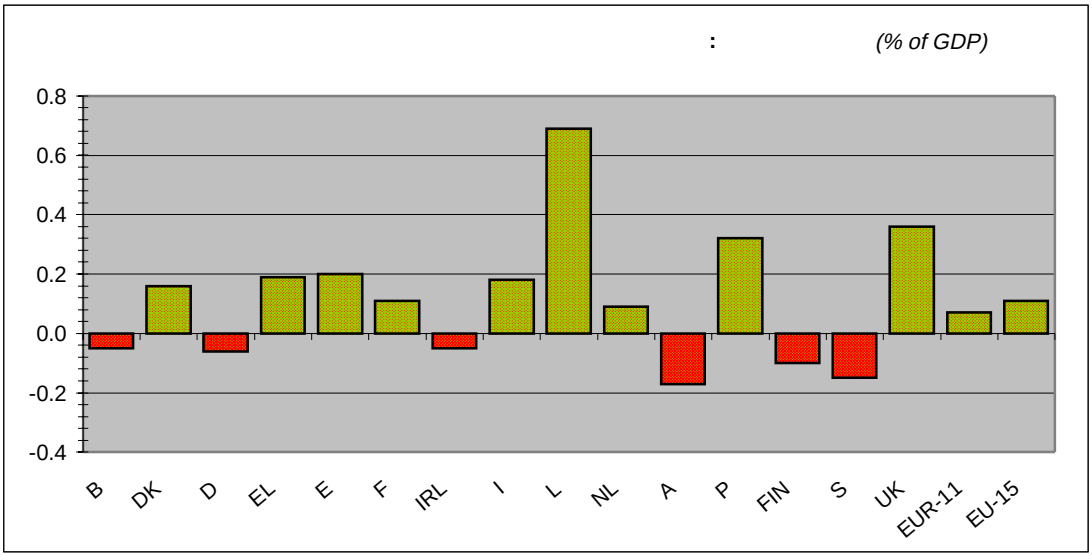
Graph 5.3. The share of public investment in GDP, 2000.



Source: Commission services

On the basis of Commission forecasts, changes in public investment levels between 1999 and 2002 are expected to be limited (graph 5.4). L is a remarkable exception. Other notable increases are projected for the UK, and in the three catching-up countries, P, EL and E (to levels close to 4% of GDP). Reductions, albeit smaller in scale, are projected for A, D and B to what are relatively low levels of public investment. Falls in the share of public investment in GDP are also expected in FIN, S and IRL, but they will remain higher than the EU average.

Graph 5.4. Expected changes in public investment 1999-2002



However, these changes in public investment should be interpreted with caution. An increasing bias in the recording of government investment might exist as a consequence of

new, more market-oriented approaches to government investment decisions. These approaches have been initiated in the search for greater efficiency and value for money. They have led to an increased use of market mechanisms in public activities, the privatisation of commercially viable operations and a more direct involvement of the private sector in the production and provision of public services.

Governments have made efforts to increase efficiency and management control by introducing market mechanisms in their operations. Methods used can be internal pricing, budgetary targeting and market price oriented fees. These methods are employed not only in public enterprises, but also in the running of government agencies in general. A more market-oriented approach can also be seen in the way large infrastructure projects are sometimes managed via enterprises partially or totally government owned and operating on a commercial basis.

Additional efficiency gains could be achieved by effectively implementing Community rules on public procurement, leading to a EU-wide and competitive public procurement markets. Although countries are coming under increased pressure to liberalise public procurement markets, the currently low levels of intra-EU cross-border transactions in such markets suggest that much effort is needed in this area. Although the figure has followed a positive path during the 1990's, public procurement published in the Official Journal as percentage of GDP is below 2%[14]. A fully effective opening-up of such markets would help optimise public spending on infrastructure.

An important element to be taken into account when assessing National Accounts figures on public investment is the increasing number of "Public-Private Partnerships" (PPP). PPPs are institutional arrangements to contract out the production of public services. They allow governments to focus more on the quality aspects of the provided service. The accounting effect of this approach is to reduce the frontload direct public investment because investments that hitherto would have been recorded in government accounts are now instead borne by buying services provided by the private corporate sector. When the government purchases the service, they are recorded as current expenditure, so that consecutive purchase of services over a number of years are a substitute for a front-loaded government investment expenditure.

Finally, when assessing and comparing developments in public spending, it should be borne in mind that increasing public investment in infrastructure may not always be growth enhancing, since infrastructure stock may be subject to the law of diminishing returns. In the richest economies, many of the basic investment needs in traditional government areas have been completed, and additional increases might be wasteful[15]. This means that the sectoral and functional composition of public investment is an important factor to be considered. Unfortunately, the information in this field is almost non-existent, and where available is scattered and difficult to compare. Further efforts are needed to assess to what extent Member States are ready to face future pressure on public investment arising from:

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[14] The figure is well below the actual size public procurement markets, which encompasses not only public investment but also the bulk of public current consumption.

[15] However, obsolescence and the need to maintain operational the existing stock of infrastructure are likely to call for sustain public investment. In addition, economic growth by itself may require additional investment even in the richest countries in order to avoid bottlenecks, which may limit its progression.

- the widespread introduction of information technologies that will oblige networks to be upgraded;

- the integration of environmental considerations. Infrastructure will have to adapt to new requirements and especially to consume less energy so as to reach Kyoto objectives: this will require more investments in mode of transport others than roads and aviation.

- enlargement, and the need to reinforce the East-West and North-South dimensions of networks.

5.3 Human capital investment

Despite being classified as current spending, education represents a direct contribution of public finances to the accumulation of human capital. Raising investment in human resources is also crucial to help in the smooth transition towards the knowledge-based economy and society. Indeed, the Employment Guidelines have made the development of human resources a priority issue seeking to extend education and training access to all and promote comprehensive lifelong learning strategies. The Lisbon European Council set clear objectives for increasing the annual per capita investment in human resources and Member States are invited to set national targets.

A detailed diagnosis of public accumulation of human capital should be done on the basis of a functional distribution of public spending, which as stressed above is not readily available.

In the EU, education has been traditionally funded by governments. Public resources allocated to all levels of education represented on average 5% of EU GDP in 1997 (table 5.1). While total public expenditure on education as a percentage of GDP tends to remain fairly stable within Member States over the period[16], the data show some significant variations across Member States. In 1997, the range is defined by DK and S at the top end and EL at the bottom. FIN and A are also significantly above the average. The remaining Member States do not differ significantly from the EU average, especially if one excludes pre-primary education.

[16] The total figures for 1997 are not completely comparable to previous years because GDP figures for 1997 are compiled according to ESA95. In addition, OECD figures indicate that spending as a share of GDP has increased between 1990 and 1996.

Table 5.1. Public expenditure on education (% of GDP)*

	Total 1995	Total 1996	1997				
			Pre-primary + Not allocated	Primary	Secondary	Tertiary	Total
B (1)	n.a.	n.a.	0,7	1,2	2,7	1,2	5,7
DK	8,0	8,8	1,2	1,8	3,2	1,8	8,0
D (2)	4,8	4,7	0,6	:	3,0	1,1	4,7
EL (3)	2,9	3,1	:	1,1	1,3	0,8	3,2
E	4,9	4,8	0,3	1,2	2,2	0,9	4,6
F	6,0	6,0	0,7	1,2	3,0	1,1	6,0
IRL	5,2	5,0	0,1	1,6	2,0	1,3	4,9
I	4,7	4,9	0,5	1,1	2,2	0,7	4,5
L	4,4	4,3	0,0	1,9	2,1	0,2	4,1
NL	5,2	5,3	0,4	1,2	1,9	1,4	4,8
A	5,6	6,5	0,6	1,3	2,9	1,7	6,4
P	5,8	5,7	0,6	1,7	2,4	1,0	5,7
FIN	7,3	7,4	0,8	1,6	2,3	2,0	6,7
S	7,8	8,0	0,5	2,1	3,2	2,1	7,9
UK	5,2	5,1	0,4	1,1	2,1	1,1	4,7
EU-15	5,2	5,3	0,5	0,9	2,5	1,1	5,0

* Includes public institutions and government-dependent private institutions.

Source: Eurostat, UOE data collection.

(1) The data for B are for 1994.

(2) The data for D include primary and secondary combined.

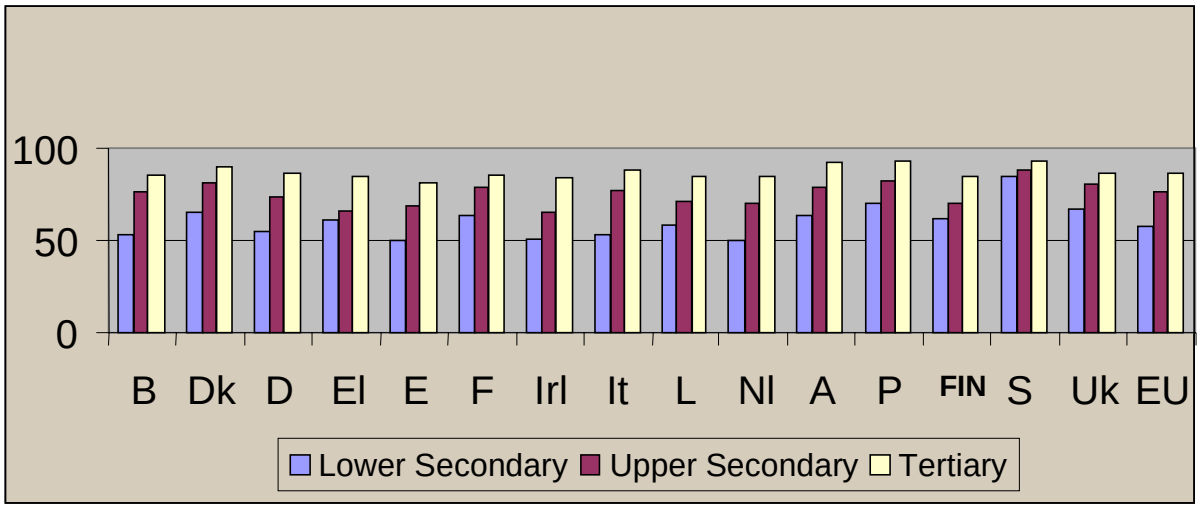
(3) The data for EL include pre-primary and primary combined.

Regarding the different levels of education, public expenditure in the EU during 1997 on primary education and tertiary education each amounted to approximately 1% of GDP, while spending secondary education amounted to 2.5% of GDP: as shown in table 5.1, there are large variations across Member States.

Governments must put more emphasis on education and training in order to equip European citizens with the necessary knowledge, skills, and competence, for them to be able to adapt to the rapidly changing patterns of living, learning and working environment. Several initiatives undertaken towards this direction include the Employment guidelines, the Memorandum on Lifelong Learning, the Community action programmes Leonardo and Socrates, Strategies for jobs in the information society. The Employment Guidelines (13, 14 and 16) invite Member States to set targets regarding increased per capita investment in human resources.

The Commission has undertaken one step in this direction by launching the eEurope initiative in 1999 and the *eLearning* initiative in 2000. Member States have decided to work together to harmonise their policies in the field of educational technology and share their experience. *eLearning* aims to support and coordinate their efforts and to accelerate the adaptation of education and training systems in Europe.

Graph 5.5: Employment rates (%) by educational attainment in 1995 (30-59 year olds)



Source : Labour Force Survey, Eurostat.

Figures on educational attainment reveal the magnitude of efforts in Member States to increase the stock of human capital during the last twenty five years. In 1996, 44% of EU citizen aged 30-34 had attained the upper secondary level, compared with only 30% of the 55-59 year-olds, who were educated 25 years earlier. Similarly, 21% in the 30-34 age class attained a tertiary education degree, compared with only 13% in the 55-59 class. Moreover, women's attainment levels are very close to men's in the 30-34 age-class, whereas they are much lower than men's in the 55-59 age class.

Human capital accumulation also greatly increases the chances of employment. Higher education and literacy levels improve the citizen's prospects on the labour market. As shown in graph 5.5, there seems to be a positive correlation between educational attainment levels and employment rates. Similarly it can be shown that there is a direct relationship between estimated literacy and educational attainment levels on the one hand and unemployment rates, vulnerability to unemployment and earnings on the other.

The challenges ahead call for a deep assessment of the role of governments in enhancing human capital accumulation. Where the provision of education is concerned, although nobody questions the need for public intervention, a reflection is needed as regards the boundaries of intervention. Overall, while there seems to be a broad consensus that free and compulsory primary and secondary education is needed, direct and free provision of tertiary education should be assessed in the light of possible mismatches between the available study courses, labour market opportunities and student preferences.

Addressing such mismatches does not imply a withdrawal of the public sector or lower public spending, but rather a change in the way public money is spent and in the form of public intervention. Some countries are introducing new financing approaches in the form of

tuition and loans rather than of free provision and grants. Such schemes try, at the same time, to influence student behaviour in order to optimise spending, while ensuring the participation of low-income households is not discouraged.

But education is not the only means to increase human capital accumulation. Continuing training in enterprises constitutes one of the main elements of human capital development, and is paramount in times of fast technical progress. Information on labour market training, largely including non-formal training, is scattered and less reliable. Government support is provided both by direct financing of education and training and through various incentives, including tax incentives, to enterprises and individuals. An indication on private financing for labour market training is channelled mainly through employer's contributions to company related training. Estimates on employers' expenditure in 1993 accounted for only 1.6% of total payrolls costs for the EU 12. Such an average value hides wide variations among Member States from 0.7% in Portugal to 2.7% in the UK, due to diverging training intensities and unit costs.

Most Member States have increased their efforts since then, and training has become a key element in the European employment strategy, as set up in the Employment Guidelines where vocational training and a comprehensive approach to life-long learning is a major goal. Such efforts are assessed every year in the Joint Employment Report. Although the shift from passive to active labour market policies is a reality, further efforts are needed on both sides, public and private, to promote life-long learning and ongoing upgrading of professional skills.

Table 5.2. Participation rates in education and training for age group 25-64

	1998	*1999*
B	4,4	6,9
DK	19,8	19,8
D	5,2	5,3
GR	1,0	~
E	4,1	4,9
F	2,7	2,6
IRL	~	~
I	4,8	5,5
L	5,1	5,3
NL	12,8	13,6
A	~	~
P	3,0	3,2
FIN	16,1	17,6
S	10,9	24,1
UK	11,1	18,5
EU-15	6,0	8,0

Source: European LFS

According to the 2000 Joint Employment Report, there was a growing emphasis in 1999 on active labour market policy in most Member States, while the numbers of registered unemployment declined. In this context, evidence from the National Employment Action Plans shows that all Member States increasingly promote education and lifelong learning activities. Several Member States point out existing education and training deficits and recognise the need for adapting training provisions and undertake specific measures to improve qualifications. Available statistics on participation in labour market related training and education activities give a rather disappointing picture. In particular participation rates among adults (25-64 years old) remains very low in the EU, although it has somewhat increased in recent years from 6.5% in 1997 to 8% in 1999. The highest participation rates was achieved in SW, DK and UK with an average of 20.8% in 1999 (see table 5.2).These data indicate that only a small proportion of GDP was allocated to labour market training. Such programmes are more developed in the Nordic countries with S and DK allocating respectively 2% and 1.9% in 1998 (table 5.3).

Table 5.3. Total active expenditure 1990-1998

	1990	**1998**
B (1997)	1,21	1,29
DK	1,13	1,89
D	1,04	1,27
GR (1994)	0,36	0,30
E	0,85	0,72
F (1997)	0,82	1,37
I (1996)	1,43	1,08
IRL (1996)	1,44	1,66
L (1997)	0,30	0,31
NL	1,28	1,76
A	0,31	0,44
***P**	0,62	0,87
FIN	1,01	1,23
S	1,68	2,01
****UK**	0,61	0,37

* Total active expenditure for Portugal is from 1997

** For Sweden year 1990 refers to 1990-1991

** For UK year 1990 refers to 1990-1991, year 1998 to 1997-1998

Source: OECD, Labour Market Expenditures,1999.

5.4 R&D and innovation

As in the case of education, public expenditure on research and development (R&D) is classified as current spending, whereas it actually contributes to capital accumulation in the form of knowledge, as well to productive processes and outputs. Table 5.4 presents figures on R&D executed by the public sector as a percentage of GDP (column II), and government R&D spending as a percentage of total public spending (column III). The EU is well behind the US in terms of the percentage of general government expenditure accounted for by R&D, 1.7% compared with 2.9%. However, in terms of GDP, the amount of R&D executed by public sector is relatively similar, although government budget appropriations have declined in real terms more noticeably in the EU compared than in the US over the past decade.

Table 5.4 Public spending on R&D

	I Latest Year	II As % of GDP (5)	III As % of Gen. Gov. expenditure (6)	IV Annual avg. real growth in 1990-1999 (7)
B	p 1997	0,5	1,36	3.3
DK	e 1998	0,7	1,44	5.4 (1)
D	e 1998	0,7	1,86	-1.2 (2)
EL	1997	0,4	0,80	4.8
E	1998	0,4	1,82	5.3
F	p 1998	0,8	1,96[4]	-3.1 (3)
IRL	1997	0,4	0,89	8.0
I	p 1998	0,5	1,38	-1.5
NL	1997	0,9	1,88	1.4
A	1993	0,7	1,32	3.4
P	1998	0,4	1,39	8.7
FIN	p 1998	0,9	2,28	6.6 (4)
S	1997	0,9	1,45	-7.2 (4)
UK	1998	0,6	1,85	-1.2
EU	**e 1998**	***0,7***	***1,73***	***-0.7*** (2)
US	p 1998	*0,6*	2,90	-0.4
JP	1998	*0,7*	1,80	5.2

Source*:* European Commission, DG Research "Towards a European Research Area - Science, Technology and Innovation Key figures 2000".

Note: p = forecasts, e = estimates

(1) 1993-1999: (2) 1991-1999: (3) 1992-1998: (4) 1995-1999; (5) Government Intramural Expenditure on R&D + Higher Education Expenditure on R&D; (6) Government Budget Appropriations or Outlays for R&D (GBOARD) in % of General Government Expenditures; (7) of GBOARD

Nevertheless, and according to the Communication from the Commission on *Innovation in a Knowledge-Driven Economy (COM(2000) 567)*, the differences in terms of private expenditures on R&D are much more striking and relevant for the development of the "new" economy. The industrial research effort in the EU is only 60% that of the US, and the Federal Government funds 13% of the R&D expenditure of American companies, while in the European Union only 9% of private R&D expenditure is publicly funded. The total research effort in the US is close to 3% of GDP, whereas the corresponding figure in the EU is lower than 2%.

Where the situation across Member States is concerned, only in F, the NL, FIN and S is public spending on R&D higher than in the US. At the opposite extreme, in countries such as EL, E, IRL and P, public spending on R&D is below half a percentage point of GDP.

The importance of innovation has been unambiguously highlighted in the European Council of Lisbon as a response to the challenges of globalisation and the knowledge-driven economy.

In January 2000 the Commission proposed the creation of a *European Research Area (COM(2000) 6)*. The Commission recalled the importance of sustained research and technological development for economic growth, competitiveness and employment through the creation of new products, processes and markets and the modernisation of European companies.

Conceived in order to help establishing strong partnerships among the Member States and between them and the Union, the orientations presented by the Commission at the beginning of October 2000 to implement the European Research Area (COM(2000) 612) foresee in particular the following: using new instruments such as the Union participation in national research programmes jointly implemented, as well as networks of excellence and large scale targeted projects allowing to build critical masses of competence; increasing and diversifying the actions at European level on infrastructure, mobility and at the interface between research and innovation; concentrating the Union efforts on selected priority themes and areas with a clear European added value.

The Commission Communication on *Innovation in a Knowledge-Driven Economy* has extensively assessed the trends in European innovation policy and has set the broad policy lines for enhancing innovation in the Union.

In order to offer an environment supportive of innovation, the Commission has highlighted the relevance of the regulatory, administrative and financial environment to research and innovation, while putting emphasis on the need to improve the interfaces in the research and innovation system. This will allow firms to have access to knowledge, skills, financial banking, sources of advice and market information.

Such a policy strategy explicitly acknowledges that a major problem resides in institutional and regulatory arrangements which do not provide adequate incentives for the private sector to innovate and invest in R&D. Nevertheless, as mentioned previously, in some Member States the provision of publicly financed R&D is very low, while the involvement of the

private sector is far from optimal by international standards. In addition, in most countries public and private efforts go hand in hand. Therefore, such institutional and structural reforms should be complemented by strengthened cooperation between the public and the private sector in order to increase the total effort in R&D spending. It needs to be investigated whether tax systems in the EU are conducive to investment in intangible capital, such that Europe can compete with the US in the high-tech sector.

6. LONG-TERM SUSTAINABILITY OF PUBLIC FINANCES

6.1 Overview of the budgetary implications of ageing populations

Many factors will affect the long-term sustainability of public finances

The Lisbon European Council called for the report to the contribution of public finances to growth and employment to assess whether concrete actions are being taken to "*…ensure the long-term sustainability of public finances, examining the different dimensions involved, including the impact of ageing populations, in the light of the report to be prepared by the High Level Working Party on Social Protection*"[17].

The mandate recognises that factors other than ageing populations affect the long-term sustainability of public finances. For example, changing household structures and increased female participation will affect public spending and taxation. Also, as economic integration deepens, governments may find it increasingly difficult to raise tax revenues on mobile tax bases due to tax competition. This Communication concentrates on the budgetary impact of ageing populations, in particular on public pensions and to a lesser extent on health care spending. As such, it does not address other equally important policy implications of ageing populations, such as the implications for the adequacy of social protection systems which are being examined by the High Level Working Part on Social Protection.

Demographic developments

In the coming decades, the population of EU Member States will continue to change due to continuing trends of low fertility rates below the level needed to achieve a natural replacement of the population and increasing life expectancy. One particularly significant factor affecting the balance between working-age and retired people will be the fact that the large cohorts born after World War II will be reaching retirement age. Updated Eurostat population projections for the period 2000 to 2050 show that the EU working age population (aged between 20 and 64) will stay broadly stable at some 230 million until 2015. Thereafter, it will decline to 224 million by 2025 and 192 million by 2050. At the same time, the numbers of elderly persons aged 65 and above will rise from 61 million in 2000 to 86 million in 2025 and 103 million by 2050. The largest increase will take place amongst the very old (aged 85 and above), whose numbers will almost triple from 7 million in 2000 to 19 million in 2050.

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[17] As part of goal of modernising social protection, the Lisbon European Council requested "*…the High Level Working Party on Social Protection, taking into consideration the work being done by the Economic Policy Committee, to support this co-operation and, as its first priority, to prepare, on the basis of a Commission communication, a study on the future evolution of social protection from a long-term point of view, giving particular attention to the sustainability of pensions systems in different time frameworks up to 2020 and beyond, where necessary".* A progress report should be available by December 2000." . The High Level Working Party on Social Protection has prepared progress report on *The future evolution of social protection – pensions* for the European Council of Nice in December 2000 (Council Document 2949/00 of 06.1100). This progress report was prepared the basis of a recent a Commission Communication *The Future Evolution of Social Protection from a Long-Term Point of View : Safe and Sustainable Pensions* (COM(2000) 622 final).

Overall, the size of the total population can be expected to start to fall after 2020, see table 6.1. The total population in the EU is forecast to increase from its 2000 level of 376 million to 386 million in 2020, after which it gradually declines to 364 million by 2050. However, considerable differences are forecast between Member States. Large population falls are forecast for I, D and E, whereas it is expected to grow in F, UK, NL, IRL and P.

Table 6.1 Total population in EU Member States 2000-2050 (millions)

	2000	2010	2020	2030	2040	2050
B	10.2	10.4	10.5	10.5	10.4	10.1
DK	5.3	5.5	5.6	5.6	5.6	5.6
D	82.1	83.4	83.3	82.0	79.6	76.0
EL	10.5	10.8	10.8	10.7	10.6	10.2
E	39.4	39.9	39.5	38.6	37.3	35.1
F	59.2	61.4	62.8	63.7	63.5	62.2
IRL	3.8	4.1	4.4	4.6	4.7	4.8
I	57.6	57.3	56.0	54.0	51.5	48.1
L	0.4	0.5	0.5	0.5	0.5	0.6
NL	15.9	16.7	17.3	17.7	17.9	17.7
A	8.1	8.1	8.2	8.1	7.9	7.6
P	10.0	10.3	10.5	10.7	10.8	10.7
FIN	5.2	5.3	5.3	5.3	5.1	5.0
S	8.9	9.0	9.1	9.3	9.2	9.2
UK	59.5	60.9	62.2	63.2	62.9	61.8
EU-15	376.2	383.4	386.0	384.6	377.6	364.5

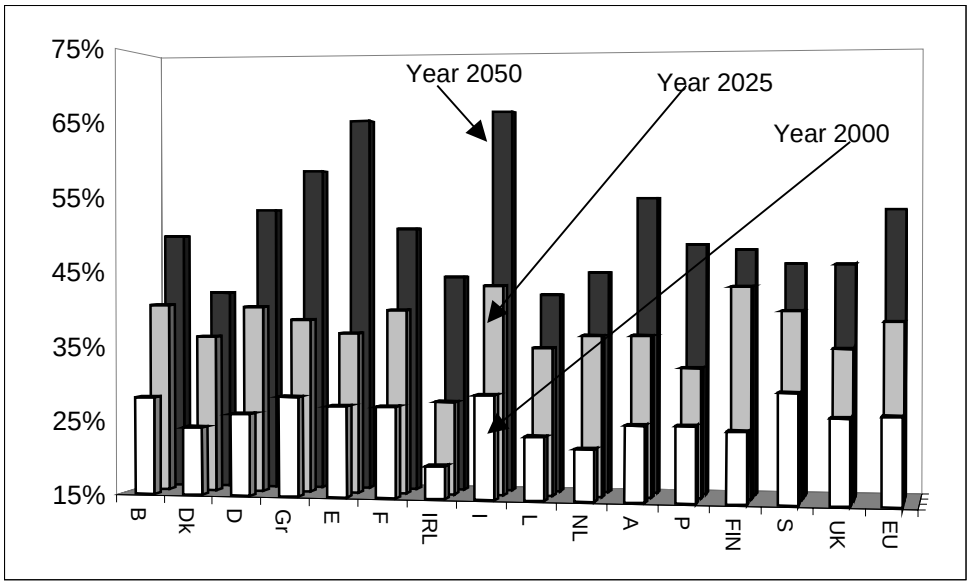
Source: Eurostat, baseline scenario

The old-age dependency ratio (defined as persons aged over 65 as a percentage of working age population 20-64) will rapidly increase from some 27% in 2000 to 39% in 2025 and to 53% in 2050 for the EU, see graph 6.1. Increased immigration could stabilise the total population, but to mitigate some of the increase in the old-age dependency ratio, it would have to reach unprecedented (and possibly politically unacceptable) levels to maintain ratios at or close to their current levels.

Again, there are sharp differences between the Member States. In terms of starting position in 2000, IRL has the lowest old-age dependency ratio at 19% compares with ratios of close to 30% in B, EL, I and S. The timing of the demographic changes also differs. Steep increases in the old-age dependency ratio start to occur after 2005 in D, EL, I, NL and A, and somewhat later around 2010 in B, E, F, FIN and S. In most Member States, the old-age dependency ratio will reach a new plateau around 2040, with the highest ratios in 2050

forecasts for EL, E and I. The scale of the changes are impressive, with the old-age dependency ratios increasing by nearly 40 percentage points in I and E.

Graph 6.1 Old age dependency ratio 2000-2050*



There is uncertainty with long-term demographic projections. However, demographic projections over the medium term are broadly reliable for people who are already born as is the case with pensioners in the next 30 to 40 years. From the perspective of public finances, there are two particular down-side risks. Firstly, the anticipated rise in fertility rates from their historically low levels may not materialise, which would imply fewer entrants to the labour market in coming decades. Secondly, a significant increase in life expectancy above current predictions, due to say advances in medical technologies or medicines, could further raise old-age dependency ratios and add to the pressure on public pension and health care systems. These risks suggest the need for careful monitoring of demographic developments and their implications for public finances.

How ageing populations affect public finances

Pensions[18]: ageing populations will cause a fall in the ratio of contributors to pensioners between now and 2050. Public pension schemes account for the largest share of retirement income in Member States. However, there are considerable difference between Member States as regards the nature and financing of public pensions, see table 6.2. Public pensions

18 The Treaty provides a number of safeguards which prohibit the liabilities of one Member State being passed on to other EU countries. In particular, Article 103 has a no bail-out rule which states *"The Community shall not be liable for or assume the commitments of central governments, regional, local or other public authorities, other bodies governed by public law, or public undertakings of any Member State..."*.

are normally financed on a pay-as-you-go (PAYG) basis, i.e. they are directly paid from the contributions of the current working population and employers. In some Member States, the PAYG pensions only provide a minimum pension to cover basic needs. It is left to the social partners or individual employers and employees to supplement these with occupational and private pension provision, which normally are full funded. In other Member States, the PAYG pensions operate on an insurance basis, with pensions linked to past earnings.

There are large differences in the size of current public spending on public pensions. It is highest in A and I accounting for some 15% of GDP, which compares with levels of 5% of GDP in IRL, NL and the UK. In other Member States, spending on public pensions is in the order of 10% of GDP. There are also marked differences in the size of pension fund assets across countries; they are highest in the NL (87% of GDP), the UK (75%), DK (75%) and IRL (45%). In contrast, pension fund assets are low, well below 10% of GDP, in a majority of Member States including the four largest economies of the euro area.

Table 6.2: Overview of pension systems in EU Member States

	Statutory retirement age		**Indexation**	**Public pensions % 1998 GDP[1]**	**Pension fund assets as % 1996 GDP[2]**
	Men	**Women**			
B	65	61	Prices	9.5	4.1
DK	67[8]	67	Wages	11.8	75
D	65	60[3]	Net wages	12.4[4]	5.8
EL	55/65[5]	55/60	Wages	12.1	12.7
E	65	65	Prices	9.6	3.8
F	60	60	Prices	12.7	5.6
IRL	65/66	65/66	Discretionary	3.0	45.0
I	65	60	Prices	14.2	3.0
L	65	65	Wages/prices	10.6	19.7
NL	65	65	Wages/prices	5.0	87.3
A	65	60	Net wages	15.0	1.2
P	65	65	Discretionary	9.8	9.9
FIN	65	65	Wages/prices	11.5	40.8
S	65[6]	65	Other	11.1	32.6
UK	65	60	Prices	5.3	74.7

Source: Report of the EPC working group on ageing populations

Notes: (1) Definitions of public spending on pensions dare not identical, and hence not strictly comparable. For IRL, the figures are set of social insurance contributions: (2) Source OECD, except DK which comes from national authorities. .In some countries these funds usually do not form part of the public pension system: (3) Will be 65 as of 2005: (4) General statutory and special civil servants regime: (5) Public sector: same applies for women: (6) The retirement age is 61 and flexible upwards. The system is contribution defined so every additional working year increases pension benefits

accordingly. The guarantee pension has the requirement age of 65: (7) Formula based on nominal GDP growth: (8) 65 as of 2004.

Making long-term budgetary projections requires a number of assumptions on variables such as interest rates, productivity growth and labour market developments. Whereas projections should be able to identify serious budgetary imbalances, the results should be treated with caution. A further difficulty is that national projections are usually not comparable as they use different demographic and economic assumptions along with different model specifications and definitions. International organisations have overcome some of these problems by using standard demographic and economic assumptions, but at the cost of less accuracy in the modelling of the institutional detail of national pension and social security systems.

This trade-off between comparability/transparency prompted the Economic Policy Committee to take a new approach in a report on the budgetary implications of ageing populations examined by the ECOFIN Council on 7 November 2000.[19] National authorities were invited to run their national models using standard EUROSTAT demographic and economic assumptions. These assumptions provide some flexibility to cope with specific national circumstances.[20] The results presented below are not strictly speaking comparable, but nonetheless represent an important advance in producing quasi-comparable estimates of long-term pension projections.

The starting point was a so-called "current policy scenario", which aimed at projecting pension expenditures on the basis of legislation already enacted. Various sensitivity tests and policy simulations have been also been conducted, which are set out in full in the EPC report.

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19 *Report of the impact of ageing populations on public pension systems, EPC/ECFIN/581/00-EN*. The work of the EPC is proceeding in parallel with an exercise underway in the OECD (Working Party 1). The demographic and economic assumptions were drawn up in collaboration with the OECD Secretariat to ensure consistency between the two exercises.

20 For example, participation rates were based on ILO projections, but adjustments to 2010 were allowed to reflect cross-country differences in labour markets policy reforms and legislated reforms to social institutions. Unemployment is assumed to fall to its structural level by 2005 as defined by the OECD and held at that rate to 2050. However, this rate could be adjusted to reflect reforms to the labour market already enacted, provided the adjustment does not exceed one third of the estimated structural rate of unemployment in 2005. Labour productivity should converge towards 1.75% annually between 2020 and 2030

Table 6.3 Pension expenditure projections 2000-2050 (as % GDP, before tax)[21]

	2000	*2005*	*2010*	*2020*	*2030*	*2040*	*2050*	*Change 2000-peak year*
B	9.3	8.7	9.0	10.4	12.5	13.0	12.6	***3.7***
DK	10.2	11.3	12.7	14.0	14.7	13.9	13.2	***4.5***[22]
D	10.3	9.8	9.5	10.6	13.2	14.4	14.6	***4.3***
EL	NA	NA	NA	NA	NA	NA	NA	***NA***
E	9.4	9.2	9.3	10.2	12.9	16.3	17.7	***8.3***
F	12.1	12.2	13.1	15.0	16.0	15.8	N.A.	***3.9***
IRL	4.6	4.5	5.0	6.7	7.6	8.3	9.0	***4.4***
I	14.2	14.1	14.3	14.9	15.9	15.7	13.9	***1.7***
L	NA	NA	NA	NA	NA	NA	NA	***NA***
NL	7.9	8.3	9.1	11.1	13.1	14.1	13.6	***6.2***
A	14.5	14.4	14.8	15.7	17.6	17.0	15.1	***3.1***
P	9.8	10.8	12.0	14.4	16.0	15.8	14.2	***6.2***
FIN	11.3	10.9	11.6	14.0	15.7	16.0	16.0	***4.7***
S	9.0	8.8	9.2	10.2	10.7	10.7	10.0	***1.7***
UK	5.1	4.9	4.7	4.4	4.7	4.4	3.9	***0.0***

Source: Report of the EPC working group on ageing populations

The simulations show that public pension expenditure as a percentage of GDP is predicted to rise substantially in all Member States over the next few decades, except in the UK. However, the size and timing of the increases in expenditure differ across Member States. Only two Member States are projected to have increased spending on public pensions of less that 2% of GDP over the period 2000 to 2050, namely I and S.

In the majority of cases the effects of ageing will add between around 3 to 5 per cent of GDP to pension expenditure, i.e. B (3.7%), DK (4.5%), D (4.3%), F (3.9%), IRL (4.4%), A (3.1%), and FIN (4.7%).Even higher upwards pressure on public pension spending is projected for P, NL (6.2% of GDP) with the highest increase projected for E (an additional 8.2% of GDP over the forecast period). As regards timing, public pension expenditure in DK, F, I, A, P and S should reach its peak around 2030. The peak will be reached around 2040 in B, NL and FIN, and in the remaining countries around 2050. Overall, it is also worth noting that although the projected rise in public expenditure is a significant challenge, it remains below the expected increase in dependency ratios. This suggests that reforms

21 Estimates for Greece and Luxembourg will be provided by national authorities in January 2001

22 For Denmark, net of the supplementary, semi-funded scheme, ATP, the increase from 200 to the peak year is only 3.1 % of GDP

undertaken in the 1990s have gone some way to addressing the impact of ageing populations on public pension schemes.

However, other factors should be borne in mind apart from the size of the increase in spending on public pensions. Account needs to be taken of the starting level of spending on public pensions, which in 2000 ranges from some 5% of GDP in IRL and UK to over 14% of GDP in I and A. It is also necessary to take account of taxes on pension income, i.e. net public expenditure on pensions. Another relevant factor is that contributions to funded pension schemes, such as in NL, are usually tax deductible i.e. deferred until entitlements are paid out. This means that of the increased spending on public pensions in such countries will be offset by increased tax revenues on income from funded pensions.

Health care: on average, public spending on health care in the EU is just over 6% of GDP, which accounts for approximately three quarters of all spending on health care. It is a major component of all public spending, and is central to the debate on the budgetary implications of ageing populations.

Studies on the pattern of health expenditure for different age-groups reveal that as people age they generally tend to spend increasing amounts on health care. In fact, profiles of average health expenditure for persons of different age groups tend to be U-shaped, with high levels of expenditure characterising childhood and old age. The projected increase in the number of older people therefore fuels concern about rising health care expenditures.

However, measuring the impact of demographic changes on overall health expenditure is not as straightforward as it might first appear. Some recent studies suggest that as life expectancy (as well as the number of elderly people) increases in the future, individuals will enjoy a higher number of years in good health than previous generations. That is to say that although there will be increased numbers of elderly people in the future, this might not lead to a proportional increase in health expenditure. Moreover, a significant proportion of health care services are consumed in the final months of life prior to death, and are therefore not directly age related .

Over the past three decades, ageing has not been a significant driving force in the increase in health expenditure in Member States. As reviewed in annex C, OECD studies on the evolution of health expenditure between the 1960s and the 1990s suggest that the following factors have been more important: increased coverage of public provision of health care or health insurance; increased demand/consumption of health care in line with increased prosperity; and supply-side factors such as the increased use of new and more expensive technology, and medical price inflation higher than overall price inflation. There is little consensus as to whether these factors will continue to be important in the future. Other factors, might also start to play a role in increasing the demand for formal health provision, such as increased household fragmentation as a result of increased female participation in the labour force. On the other hand, an increased awareness of the link between individuals' behaviour and their health status, or more importantly the effect of past reforms in the health sector, might serve to contain pressures for increases in health expenditure.

The existence of many different factors driving health care expenditure considerably complicates the process of projecting future trends in health expenditure and of predicting the particular role of demographic changes. Moreover, cross-country projections for

expenditure for health expenditure are further complicated by the nature of health systems. Health systems by their very nature are extremely complex and their structure can vary considerably between different countries. However, the detailed organisational structure of health systems, and the incentives that they create for different types of agents, can have an extremely important role to play in determining supply and demand pressures for expenditure. As a result, similar trends in medical technology or in medical prices, might lead to very different implications for the evolution of health expenditure in different Member States.

Despite these difficulties, there have already been some attempts to project health care expenditures. The OECD estimate that the direct effects of ageing on public expenditure on health will be an increase of 3% of GDP in the EU and in Japan, and 2% in the US. Several Member States have attempted to quantify future increases in public expenditure on health associated with ageing populations. These point to an increase in public spending in the order of 2 - 3% of GDP. On balance therefore, there is a consensus that health care expenditure will rise, but there is still some debate as to the scale of the increase. This underlines the need for effective cost-containment measures, a review of which is contained in annex C.

One important issue in the budgetary impact of ageing is the issue of long-term care for the elderly. This type of expenditure will be one of the key sources of increased public expenditure due to ageing. However, in many Member States, long-term care is no longer a formal part of the health sector – this spending is often covered by social budgets. Projections of health care expenditure excluding this type of care are likely to seriously underestimate the impact of ageing populations on overall public expenditure.

Education: The scope for any reduction in public spending on education on account of fewer young people is likely to be modest, and probably much smaller than increases in spending on pension and health care. Increased per-capita spending may be required to increase investment in human capital and to promote lifelong learning which enables elderly workers to return to or remain in the labour force.

Overall assessment of the implications for public finances

While caution must be exercised in interpreting the above projections, the combined impact of ageing populations on public pension and health care systems suggests, in the absence of further reforms, an increase in public spending of between 5 to 8 percentage points of GDP in most Member States, and possibly larger amounts in less favourable scenarios. Although this pressure will emerge over several decades, it nonetheless represents a major challenge to the sustainability of public finances. The budgetary challenge of ageing populations will be most acute in countries having a large stock of outstanding public debt and that rely on PAYG pension systems.

Clearly, such large expenditure increases could not be financed by running up large structural deficits and public debt. A return to large structural deficits would undermine all the fiscal consolidation efforts undertaken in the run up to EMU, and would be contrary to the Stability and Growth Pact. Unsustainable public finance positions would complicate the implementation of the single monetary policy by the ECB and undermine confidence in the EMU process possibly resulting in interest rates being higher than they otherwise would be.

Addressing the challenge simply by raising additional finance for increased pension and health care spending may run contrary to the conclusions of the Lisbon European Council. For example, *raising contribution rates to public pension systems (*which are already very high in many Member States) would widen the wedge between labour costs and net wages, and create disincentives to hire workers and participate in the labour market. Moreover, it would widen inter-generation imbalances. Similarly *increasing the overall tax burden* could exacerbate disincentives towards employment and investment, which could over time worsen rather than improve the sustainability of public finances. Finally, *cutting back on other essential public expenditure items* such as infrastructure , education and training, information technology and R&D could be counter-productive as such expenditures contribute to raising the potential output of the EU.

At the same time as pressure mounts to increase age-related expenditure, economic integration may 'erode' mobile tax bases, i.e. tax competition. Governments may find it increasingly difficult to support higher tax burdens necessary to finance increased age related expenditures. Alternatively, governments may have to shift the tax burden way from mobile tax bases (e.g. on capital) towards immobile tax bases (e.g. labour), a development which could distort the functioning of the labour market.

6.2 The way forward and the response by Member States

A comprehensive reform process is required to address these challenges. It should include steps to further consolidate public finances prior to 2010 when the budgetary impact of ageing takes off, labour market measures to increase employment and participation rates especially amongst elderly workers, and reforms to place public pensions on a sound financial footing. Policy responses should be decided well in advance of the increase in old-age dependency ratios, so that people can make the necessary adjustments to their old-age provision.

Further consolidation of public finances

Member States should take advantage of the current favourable economic climate to pursue fiscal consolidation and reduce public debt levels at a faster pace. This will enable them to meet the changing demographic situation with a smaller public debt and a lower interest burden. Illustrative calculations in table 6.4 show what would happen to public debt in 2010 and 2020 if Member States stick to the medium-term targets for 2003 set down in their 1999/2000 stability or convergence programme.[23] It clearly shows that sticking to the medium-term target would allow countries to substantially reduce their stock of debt and achieve a fall in the interest burden: this would partly cover the extra budgetary costs of ageing. This effect is particularly strong for high-debt countries. Maintaining budgetary

[23] Several Member States have already submitted their updated stability and convergence for 2000/2001. However, the medium-term targets in the table have not been modified accordingly. It will be possible to include a revised table in the Commission-Council report taking on board the targets contained in 2000/2001 programmes of all countries. These calculations are based on an assumption of a growth rate-interest rate differential of some 2.25%, which is close to the long-run solution of the Commission's QUEST model.

positions at the 2003 target levels would bring about a fall in their interest burden by 2020 of around 3 percentage points of GDP.

A further lasting improvement of the structural balance by 1% point of GDP over these targets would bring about an additional reduction in public debt of some 12 percentage points of GDP by 2010 and 2020 in most Member States. All countries would be below the 60% Maastricht threshold and, in the case of Nordic countries, the debt would be turned into an asset. The new debt levels imply an additional fall in the interest burden by 0.4% of GDP by 2010 and 0.6% points of GDP by 2020. All countries would have a lower burden of more than 1% of GDP compared with their 2000 level, and in eight Member States the reduction would be above 3% of GDP. These significant savings highlight the contribution that strong fiscal discipline can make in pre-empting the budgetary consequences of ageing populations. However, in light of the projections above, the potential saving are unlikely to fully compensate for additional age-related expenditures.

Table 6.4. Pre-empting ageing: reduction in interest burden (% of GDP)

			Medium term targets				Medium term targets – 1%			
	"Medium term Targets" (def:+; surpl: -)	Debt ratio 2000	Debt ratio 2010	Change in Interest burden	Debt ratio 2020	Change in Interest burden	Debt Ratio 2010	Change in Interest burden	Debt ratio 2020	Change in Interest Burden
B	-0.2	112	69	-2.1	44	-3.4	63	-2.5	31	-4.1
DK	-2.5	50	12	-1.9	-12	-3.1	5	-2.2	-25	-3.8
D	0.5	61	40	-1.0	26	-1.7	33	-1.4	14	-2.4
EL	-0.2	103	64	-2.0	38	-3.3	58	-2.3	26	-3.9
E	-0.2	63	37	-1.3	22	-2.1	30	-1.6	9	-2.7
F	0.5	59	43	-0.8	32	-1.4	36	-1.2	19	-2.0
IRL	-2.6	46	1	-2.3	-20	-3.3	-6	-2.6	-33	-3.9
I	0.1	112	73	-1.9	48	-3.2	66	-2.3	36	-3.8
NL	1.1	62	38	-1.2	29	-1.6	31	-1.6	17	-2.3
A	1.3	64	52	-0.6	45	-0.9	45	-0.9	32	-1.6
P	0.3	57	41	-0.8	28	-1.5	34	-1.2	16	-2.1
FIN	-4.7	43	-7	-2.5	-45	-4.4	-14	-2.9	-57	-5.0
S	-2.0	59	20	-2.0	-3	-3.1	13	-2.3	-16	-3.7
UK	0.3	44	24	-1.0	18	-1.3	17	-1.3	5	-1.9

Medium term targets correspond to the budget balances in 2003 (EL, F, A & S: in 2002) projected in the 1999 Stability and Convergence Programmes.

Source: Commission Services.

Reforms to raise employment levels

An increase in employment rates would help offset the negative impact of demographic developments on the size of the labour force. From a public finance perspective, it would raise income tax receipts and contributions to PAYG pensions, lower expenditure on public pensions and other entitlements, and raise the overall level of output. For these reasons, the recent Commission Communication on safe and sustainable pensions and the report of High Level Working Party on Social Protection (HLWPSP) has drawn attention to the imperative of raising overall employment rates, especially amongst older workers, as a key part of the strategy to deal with ageing populations. The report calls for mobilising society's full potential as proposed in the Lisbon European Council which implies vigorous reform as regards economic, social and labour policies.

An essential question for the financial equilibrium of pension systems is the early departure from the labour market of the older workers. Currently, in most Member States, the effective retirement age is appreciably lower than the statutory retirement age provided for by the obligatory pension schemes. This translates into a rapid fall in employment rates beginning with the age of 55 in most Member States (see table 6.5). One of the principal reasons for this trend has been poor age management practices in labour markets, whereby early retirement schemes were used for dealing with redundancies. There is clear evidence from EU Member States that incentives embedded in pension systems, together with early retirement packages (see chapter 4.1), have served to lower the effective retirement age well below the statutory retirement age. Reforms are required to introduce neutrality back into the retirement incentives.

Table 6.5: Employment rates by age group in 1999

	B	DK	D	EL	E	F	IRL	I	L	NL	A	P	FIN	S	UK	EU15
50-54	60.3	80.4	73.4	60.1	57.2	74.1	62.1	57.2	64.6	70.2	72.7	71.4	78.9	84.2	75.9	69.2
55-59	36.9	70.9	55.1	47.4	44.8	46.8	50.5	36.6	38.2	49.6	41	59.1	54.6	77.8	62.1	50.7
60-64	12.9	34	19.6	30.4	24.7	10.1	35.9	17.9	12.9	18.6	11.7	43.6	22.2	47.9	35.6	22.3
65-69	3.8	6.2	5	11.5	3.9	2.1	14.3	6.2	n.a.	5.2	4.9	24.8	4.4	10.7	11.6	6.5

Source: Survey on work forces – Eurostat, Reproduced from report of HLWPSP

If effective retirement ages are to be raised to achieve higher employment rates amongst older workers, a variety of actions are required. It will be necessary discourage early retirement (except where justified, for example, on account of dangerous or heavy work), and to improve opportunities for older workers in labour markets. On one hand, barriers and disincentives to working longer must be removed. On the other hand older workers must have equal access to lifelong learning and upgrading of skills and to keep attractive working conditions in work place and to well-targeted active employment measures in the general labour market. Making pension schemes employment friendly entails limiting the access to

early retirement, introducing more flexible rules governing the transition into retirement, and ensuring that labour market policies for older workers are turned truly active. Resources that have been used to take workers out of labour markets should instead be committed to retaining and reintegrating them into employment.

In many Member States, an increased participation by women in the labour market constitutes another route for improving the employed/retired ratio. To this end, however, it is necessary to facilitate the relationship between professional life and family life, such as the provision of affordable child care facilities. The lack of support services for families acts as a brake on women staying in the labour market. It may also lead to a reduction in fertility rates, further aggravating the problem of ageing in the long term.

Evidence of the need to raise employment rates to address the budgetary impact of ageing populations is found in the report of the EPC working group on ageing populations. Pension projections were made on the basis of a macroeconomic scenario consistent with the conclusions of the Lisbon European Council which called for the EU to ".. *raise the employment rate from an average of 61% today to as close as possible to 70% by 2010* and to *increase the number of women in employment from an average of 51% today to more than 60% by 2010*."[24] The results of this so-called "Lisbon scenario" projections show that pension expenditures in some countries (P, DK, UK, S, F) would be below those described in table 6.3 based on a "current policy scenario". Achieving a higher employment rate will require appropriate policy measures to be taken and alone cannot fully compensate for the economic and budgetary consequences of ageing populations. In many Member States, some adjustments to the benefit/contribution formula in public pension systems may also be needed.

Reform of public pensions systems

Reforms have been under way in many Member States for several years. Essentially they involved modifications to eligibility, contribution and entitlement rules. At the same time, this has left more scope for private pension provision, the development of which have been encouraged through public policy measures such as granting tax exemptions on contributions, making private provision compulsory and encouraging social partners to conclude agreements on occupational pension provision. Annex D provides an overview of pension reforms currently under way at Member State level. Progress is uneven across Member States and negotiations are at a key juncture in several countries. A number of common features of the reform process can, however, be identified:

[24] The assumptions provide for both male and female participation rates gradually converge to 83 per cent by 2045, and for male and female unemployment rates to 4 per cent by 2045, the projections for working age population being taken from the high scenario provided by EUROSTAT, and productivity levels and productivity growth converging across European countries and to the level and growth registered in the US by 2050.

- most Member States are gradually equalising the retirement age for men and women, and in some cases have raised the mandatory retirement age, although they have been less successful in raising the effective retirement age.

- in some countries, the overall benefits of pensions has been reduced by increasing the number of years used to assess entitlement derived from the contributory records of an individual (e.g. pension benefit based on life-time earnings rather than final salary), altering the accrual factor, increasing the number of years required in work to receive a maximum pension rights, and indexing pension benefits to price inflation rather than to net wages.

- changes have also been implemented to improve actuarial fairness of pensions, i.e. establish a closer link between contributions and entitlements.

- in some Member States (UK, NL, IRL, DK), funded pension schemes play a relatively important role in the provision of income to older people. In others, measures are under consideration to encourage the development of private provision.

These reforms have undoubtedly improved the sustainability of public pension systems. However, as discussed above, spending on public pensions in many Member States is still expected to grow significantly in the coming decades, so further reforms will be needed. Reforms must take account of the expectations of people who may have paid contributions over several decades, and require a large consensus in order to avoid future governments undoing the reforms carried out by their predecessors.

A wide consensus exists on the need for a comprehensive approach to retirement income provision. The responsibility of policy makers is not limited to a first pillar PAYG schemes. Public policy also influences the development of second pillar occupational schemes that provide a link with earnings during a persons working life, and third pillar private savings. Moreover, it is important to bear in mind that the living standards of older people are also determined by other policies in areas such as housing, health and long-term care or the provision of free or subsidised services (transport, culture etc.).

In many EU Member States funded pension provisions will be expected to play a greater role in light of ageing populations. In the face of a requirement to curb the growth of public pension spending the promotion of occupational and personal pensions can help ensure the adequacy of income during retirement. A transition to greater funding can improve the sustainability of public finances in the long-term, and make an important contribution to the development of capital markets in the EU. This makes it important to put in place a legislative framework that guarantees high standards such that supplementary pension schemes are widely accessible and well adapted to the needs of an increasingly mobile workforce. The EU is playing a role in this process, with the adoption in October 2000 of a proposal for a Directive the activities of institutions for occupational retirement provision[25]. Further measures are required to co-ordinate national rules on the taxation of supplementary

[25] COM(2000)507 of 11 October 2000

pension products. Obstacles to the mobility of workers arising from supplementary pension schemes are being examined in the European Pensions Forum.

The contribution at EU level

Ageing populations pose a wide range of social, economic and budgetary challenges. This chapter has focussed on the budgetary impact of ageing populations on public pensions and to a lesser extent on health care spending. Measures to address the long-term sustainability of public finances must form part of a comprehensive reform package along the lines set down by the Lisbon European Council.

As a first step, the ECOFIN Council has invited the EPC working group to extend its analysis to cover the impact of ageing on health care. The Commission will actively participate in this work. At the same time, work will continue in the High Level Working Party on Social Protection along the lines proposed in the Commission Communication and the Group's progress report to the Nice European Council.

Secondly, the work of the EPC illustrates the diversity of possible approaches when it comes to analysing the impact of ageing populations. A wide variety of models (e.g. CGE models, generational accounts) and indicators are available, and projections differ in the time span they cover. Some Member States produce reports of pension spending regularly and present these to legislative bodies, whereas others only do so on an ad hoc basis. The Commission proposes to promote an exchange of views on methodologies used to simulate the future evolution of pension and other age-related expenditures.

Thirdly, as proposed in the Commission Communication on sustainable pensions of 11 October 2000, European statistical surveys could be used, inter alia, to gauge public awareness and expectations as regards the modernisation of social protection systems.

Fourthly the analysis above has illustrated the increased role which supplementary pension schemes may have to play as public pension schemes are adapted in light of the budgetary pressure of ageing population. This underlines the need for the rapid adoption of the proposed Directive on the activities of institutions for occupational retirement provision.

Further reflection is required as to how sustainability could be introduced into the Stability and Growth Pact. The BEPGs and Council opinions on the stability and convergence programmes already contain general recommendations on the need to prepare for the future burden on the budget of demographic developments. However, the scale of the challenges highlighted and potentially large cross-border spillover effects in EMU suggest that the implications of ageing populations on public finances need to be addressed more systematically at European level. In its report to the Helsinki European Council on the co-ordination of economic policies, the ECOFIN Council called for *"a broadening of the scope of public finance issues covered in the stability and convergence programmes and more emphasis on medium to longer-term sustainability issues."* It is now time to implement this conclusion. Member States agreed to ensure that future stability and convergence programmes contain a section on the long-term sustainability of public finances. It should outline the overall strategy of the government to address the budgetary consequences of ageing populations, and present long-term budgetary projections.

Finally, the Commission will examine the possibility of establishing, in cooperation with Member States, a European Longitudinal Ageing Survey.[26] This would provide essential data necessary for the design of effective policies in fields such as health care and social protection systems which cater for the changing needs of an ageing population. The utility of longitudinal ageing survey has already been demonstrated by the Health and Retirement Survey in the US and the English Longitudinal Ageing Survey (ELSA). There would be significant benefits in organising a longitudinal ageing survey at European level, both in terms of cost saving and ensuring that data is of high quality and comparable across countries. Moreover, it would mark an important step in promoting the process of open co-ordination advocated by the Lisbon European Council on the basis of comparable data and indicators.

[26] Such a survey would focus on a representative sample of older persons, say aged over 50, and encompass data on health, economic status (such as income, education, employment, pension rights etc.) as well as information on social support (assistance within families, transfers of assets etc..).

ANNEX A: REFORMS OF TAX SYSTEMS

	Social security contributions	Personal income taxes	Corporate and capital taxes	Consumption taxes	Others (Energy. environment)
B	Lowering of SSC, specially for the low-paid in 2000 (lump sum reduction of SSC paid by employers and employees). Aligning of the regime of white-collar workers to that of blue-collar workers.	From 1999 onwards a full indexation of tax brackets has been restored. Crisis levy to be eliminated by 2004.		Lowering of VAT on labour-intensive services.	
DK	The temporary contribution to ATP (Labour Market Supplementary Pension), corresponding to 1% of the wage sum was made permanent with effect from 1999. Increased contribution to early retirement scheme.	Gradual reduction of marginal tax rates, in particular for low and middle income earners (1999-2002). For low wage earners, marginal tax rates are being reduced by up to 8 percentage points.	A proposal for lowering corporate tax rates (from 32% to 30%) included in the budget for 2001.Simplification of tax-rules on shareholdings for individuals. Introduced a 5% tax on stock-return to pension funds. Reduction of tax deductions for interest payments (1999-2001).		Increase in energy taxes in 1999-2000.
D	Reduction of SSC to the pension system by 1 pp. between 1998 and 2000	Across-the board reduction of income taxes: Minimum marginal rate from 22.9% (2000) to 15% (2005); maximum from 51% (2000) to 42% (2005). Minimum exempted income will be raised.	Corporate tax rate cut to 25% (from 40% and 30% for non-distributed and distributed profits, respectively, from 2001 onwards. No taxes on capital gains when shareholdings are sold between companies (from 2002 onwards).		Ecological taxes introduced in 1999 and will gradually increase to finance reductions in SSC.

	Social security contributions	Personal income taxes	Corporate and capital taxes	Consumption taxes	Others (Energy. environment)
GR	Reduction of employers' SSC (50%) on new staff.	Increased income tax allowances, increase in tax credits for children, abolition of presumptive criteria.	Tax relief for venture capital. Lowering of tax rates for general partnerships. Interest receipts from corporate bonds taxed in the same way as interest receipts from government bonds	Lowering of VAT on labour-intensive services. Reduced VAT rate on electricity. Adjustment to the average rates in the EU of indirect taxes on cars and heating oil.	
E	General cuts in SSC for permanent contracts (0.2 pps for the employers and 0.05 for the employees in 2000) Targeted cuts in SSC for new permanent contracts since 1997.	Thorough reform of the personal income tax in 1999: A new single tax rate schedule was established; minimum and maximum marginal tax rates cut by 2 and 8 pps respectively. The concept of taxable income was redefined, which is obtained after the deduction of a tax-free personal allowance.	No withholding tax on securities. Tax incentives for venture capital. Reduction of withholding tax on dividends	Lowering of VAT on labour-intensive services: hairdressers and small house repairs.	
F	Employers' SSC cuts at the lower end of the wage scale (in association with the reduction of working week). .	General tax cuts between 2001-2003 (0.5% of GDP; FRF 22bn in 2001). CSG ("contribution sociale généralisée") and CRDS ("contribution pour le remboursement de la dette sociale") will be gradually reduced in the next three years for workers earning up to 1,3 times the minimum wage.	Tax incentives for young innovative companies. Removal of the surcharge on corporate profits in 2000. Creation and extending of a tax to finance the reduction of the working week. Reduction of taxes on dwellings. Gradual reduction of corporate tax rates from 36.6% to 33,3% between 2001 and 2003. For small and medium companies, reduction of the corporate tax rate to 15% for the first 250,000 francs of SMSEs	General cut in the VAT rate (1 percentage point) Reduced VAT rates on household repairs and services. Elimination of the "vignette" for non-business cars.	Progressive rises in environmental taxes. Reduction of excises on petrol products in some sectors.

	Social security contributions	Personal income taxes	Corporate and capital taxes	Consumption taxes	Others (Energy. environment)
IRL	New National Training Fund Levy payable by employers from 2000 onwards. This is offset by cuts in the employer PRSI contribution rates (from 12% and 8.5% to 11.3% and 7.8%).	Reduction of the standard (24 to 22%) and top rates (46 to 44%). Increase in the standard rate band. Generalisation of standard-rating and increase in personal allowances.	Reduction of the standard corporate rate from 28% in 1999 to 24% in 2000 and further to 12.5% by 2003. Housing market: introduction of a new anti-speculative tax of 2%.	Increase in indirect taxes on tobacco. Abolition of transport taxes on air and sea travels to overseas destinations in 2000.	Cut in excise duty on kerosene in 2000.
I	Total SSC relief for new jobs in the South introduced in 1999 for a duration of three years. SSC rebates at the lower end of the wage scale. SSC cuts: 0.82% in 1999, 0.70% in 2000, additional cuts planned for 2001.	With the 1998 tax reform, revision of the personal income tax (reduction of tax brackets from 7 to 5, increase in the minimum rate from 10 to 19%, decrease of the maximum rate from 51 to 46%). In 2000, reduction of the rate on the second bracket from 27 to 26%. Reduction of tax pressure on lower pensions. Increase in allowances for poorer households. Adjustments in tax rates and further increases in allowances planned in 2001.	Regional tax on production activities (IRAP) with a flat rate of 4.25% and Dual Income tax (DIT), both introduced by 1998 tax reform. DIT initially applied only to corporate taxpayers; in 2000 extended to insurance and banking and implementation accelerated; further extension to other types of businesses planned in 2001. Reorganisation of tax rules on capital gains in 1998, broadening tax base and reducing rates to two (12.5% and 27%); further fine tuning planned in 2001.	Following the 1998 tax reform, increase in the minimum VAT rate to 20% , intermediate VAT rate of 16% abolished. In 1999, reduction of VAT on labour-intensive services (home renovation, etc.), measure extended to 2000.	Some excise duties were reclassified as CO2 taxes in 1999. The CO2 tax was suspended temporarily in 2000. Possible freeze also in 2001.

	Social security contributions	Personal income taxes	Corporate and capital taxes	Consumption taxes	Others (Energy. environment)
L		Between 2001 and 2002, reduction in tax scales from 16 to 14. Marginal rates cut by 2 (2001) and 4 pps (2002). Increase in the minimum taxable income	Reduction of the effective taxation of business from 37.5% to less than 35% in 2002. Elimination of the local business tax.	Reduced VAT rates on some labour-intensive services.	
NL	Reduction of SSC for workers above 65.	Reduction of direct taxes on all income brackets by 2001. Top rate down from 60% to 52%, intermediate rate down from 50% to 442%, lower rate down from 4.5% to 2.8%. Changes in the tax brackets. Increase in the minimum exempted income. Employment tax rebate (max 803 euro for minimum wage).	Capital gains tax (with flat 30% tax on imputed rate of return of 4%) will replace existing tax on net wealth by 2001. Income from substantial business interest will be taxed at 25%.	The standard VAT rate will be raised from 17.5% to 19%.	Increase of environmental levies.
P	Harmonisation of SSC for the self-employed and the employed.	Conversion of deductible allowances into tax credits (since 1999). In the 2001 budget project: new simplified regime for the self-employed; general reduction of tax rates; lower tax rates for low work incomes; minimum collectable income is consolidated; spouses can be taxed separately; more favourable tax credits for savings, housing and health and education expenses. Equal treatment for personal taxes on capital gains	ncrease of payments on account on income taxes (from 75% to 85%) in 2000. In 2001, reduction of tax rates on firms' profits (from 32% in 2000 to 30% in 2002 and 25% in 2006) Introduction of a simplified regime for small firms (volume sales below 150,000 euro –20% tax rates). Elimination of double taxation over dividends. Increased tax credits for R&D related investments. Property tax reform to be presented to the Parliament by end 2000	Reduced VAT on some labour-intensive services.	Review of the subsidised mortgage lending scheme as to favour housing investment during downturns. Environmental tax reform to be presented to the Parliament in the 1st quarter of 2001.

	Social security contributions	Personal income taxes	Corporate and capital taxes	Consumption taxes	Others (Energy. environment)
A	A pension reform is scheduled to take effect in 2001. It will lead to a 0.8% rise in the pension contributions made by active and retired civil servants.	Increase in family allowances. Reduction of tax rates on low and middle incomes.	Assistance for business start-ups. Reduction of taxes on business transfers	Hikes in tobacco and vehicle insurance taxes in 2000. VAT flat rate turnover tax scheme changes for farmers.	
FIN	Downwards adjustment of contributions to unemployment and pensions.	Rates reduced by 1.7 pps since 1997. Cumulative reductions for 2000-2001 for all income brackets, but lower incomes focused through the abolition of the lowest income tax bracket	Rates increased from 28 to 29% in 2000.	Taxes and duties on cars alcohol and tobacco may be reduced in the medium term as trade restriction exemptions related to EU accession expire.	Increase of energy and environmental taxes.
S	Neutral revision of employers' SSC: Old age retirement fees up by 3.8 pps to 10.21%; health insurance fees up by 1 pps. General wage fees down by 4.95 pps. Tax rebate of 25 per cent of the employees' contribution from 2000	Lowering of income tax rates at the bottom and the middle of the income distribution in 1999. Increasing the minimum exempted income (the proportion of income earners paying national tax expected to fall from 18% to 15%). Further reductions planned for 2001-2002.	Reductions in corporate taxes in 2000. Coupon tax on dividends to foreign companies partly abolished in 2000. New tax relief in 2000-2001. Rise in taxes on real state in 2001.	Taxes and duties on alcohol and tobacco will be reduced because of expiration, in 2004, of exemptions related to EU membership.	Increase in energy taxes on diesel oil and electricity from nuclear power in 2000.

	Social security contributions	Personal income taxes	Corporate and capital taxes	Consumption taxes	Others (Energy. environment)
UK	Abolition of the NIC entry fee. Increase in the threshold above which employees pay NICs and Reduction in employers NIC rate by 0.3% and 0.1% in 2001 and 2002 respectively.	Increases in Working Families Tax Credit, under 16 child credit and income related benefits from June 2000 . Employment Tax Credit (ETC) from 2003. Lowering of income tax rates: starting tax rate down from 20% to 10% on the first £1520 of taxable income. Basic rate down from 23% to 22%.	Capital gains tax reform. Permanent first year capital allowances for SMEs at 40%. Increases in stamp duty on property transfers above £250,000	5% real increase in tobacco duty	Levy on aggregates. Introduction of graduated vehicle excise duty for new cars from 2001. Introduction of a climate change levy.

ANNEX B: REFORMS OF BENEFITS SYSTEMS

	Unemployment benefits: benefit level, duration, eligibility and job availability rules	**Means-tested schemes: housing allowances, social assistance, child care subsidies**	**Older workers : disability, early retirement schemes**	**Employment-conditional benefits**	**Employment subsidies**
B	Introducing an allowance for training attendance to young job seekers (1999). Adapting unempl. benefit rules to take into account new provisions related to temporary unempl. and voluntary work (1999).		Increase in the minimum age (to 58 years) for full-time early retirement and extending part-time early retirement schemes (1999).	Introducing an income support threshold for employed under back-to-work scheme (1998). Enabling workers in back-to-work scheme and young in training to receive allowances paid from unemp. Insurance (1998). Providing lump-sum payments to long-term unemployed lone parents or compensate moving costs when taking up jobs (1999-).	Transferring unemp. benefits to employers for promoting hiring of long-term and other unemployed and exempting the whole salary from SSC payments (1999).
DK	Reduction of the duration of unemployment benefit from 5 to 4 years (1999) Strengthening of job availability requirements (1999)	Tightening the eligibility rule on "guaranteed minimum (social assistance)" for under 25 (1998). Extension of the right and duty to activation to all people in receipt of social assistance (1999)	Modifying the early retirement law to be less attractive for under 62 and increasing incentives to remain longer in work through more flexible combinations of retirement and part-time work (1999) . Softening the reduction of the basic pension when pensioners have earnings from professional activity (1999).		

	Unemployment benefits: benefit level, duration, eligibility and job availability rules	**Means-tested schemes: housing allowances, social assistance, child care subsidies**	**Older workers : disability, early retirement schemes**	**Employment-conditional benefits**	**Employment subsidies**
D	Making the unemployed eligible for active measures (subsidised jobs) after 6 months (instead of 12 months before) (1999) **.**	Increase in child benefit and allowance (1999-2001), after ruling of constitutional court. Tighter means-testing of the part-time work in the social security system (so-called 630 DM law), 1998.	Promoting empl. of age 55 and older up to 5 years in New Länder and regions with high unempl. (1999)**.** Introducing the "Act on Part-time Work in Old Age" allowing older workers to halve their working time without high income losses (2000-).		Some projects include subsidies for social charges of employers to improve the incentives for the recruitment of the low-skilled.
GR	Extending subsidies to unemployed above 20 for encouraging training and job search in a fixed-term program (1998-2000).				
E		Introducing parental leave with a right of transferring 10 weeks to the father and drawing up rules for work contract termination to avoid dismissal due to pregnancy and family-care leaves (1999) .			Providing bonuses and incentives for recruiting unemployed young (under 30), older (45 or more) or long-term (1999) .
F			Tightening rules for making elderly employees redundant by increasing fine for lay-offs of over 50.	Enabling workers to keep certain allowances during the 1st 12 months. of regular empl. (1998-).	

	Unemployment benefits: benefit level, duration, eligibility and job availability rules	Means-tested schemes: housing allowances, social assistance, child care subsidies	Older workers : disability, early retirement schemes	Employment-conditional benefits	Employment subsidies
IRL		Allowing the retention of Rent and Mortgage Supplement for those who are in the Community Employment Scheme, Back to Work Allowance Scheme and Revenue Job Assist (99).		Extending Back-to-Work Allowance to long-term unemployed taking up self-empl. (98) Enhancing Back to Work Scheme (e.g., travel allowance, bonus for starting training, 1999).	
I			Speeding up the increase of retirement age from 53 to 57 as from 2002, instead of 2008 (1998-).		
L		Introducing parental leave and leave on family grounds with a guarantee of re-employment (1999-)			
NL		Setting up scheme for expanding child care facilities (1999).	Introducing co-payment scheme for unempl. benefits for employees laid off after 57.5 years old.		Reintegrating the Work-Disabled Act for promoting employment of persons with disability (1998). Introducing premium differentiation for first 6 months of unempl. Benefits to discourage short-term/seasonal empl.
P	Creating a partial unempl. benefit to promote part-time jobs (1999).	Appointment of recipients of Minimum Guaranteed Income to match job vacancies (refusal implies discontinuity of the subsidy	Creation of an "extra solidarity complement" to reinforce older workers' pensions.		

	Unemployment benefits: benefit level, duration, eligibility and job availability rules	**Means-tested schemes: housing allowances, social assistance, child care subsidies**	**Older workers : disability, early retirement schemes**	**Employment-conditional benefits**	**Employment subsidies**
A	Deducting only a portion of income from temporary work from unempl. benefit/assistance (1998-).		Introducing allowances for elderly workers taking up part-time jobs (2000-2001).		
FIN	Improving partial unempl. benefits for taking up part-time jobs (1997-). Tightening of empl. Condition from 6 months to 10 months for insurance-based unempl. benefit (1997-).	Modifying the Social Assistance Scheme to reduce the wage floor (1998).	Providing a safeguarded pension amount for taking up lower paid jobs (1998-). Cutting unempl. Pension by 4% and raising early retirement age from 58 to 60 (2000-). Increasing employers' responsibilities for unempl. & disability pension costs (2000-). Increasing the age for elderly long-term unemployed to be entitled for receiving allowances during an additional period from 55 to 57 (1997-).		Providing subsidies to employers to hire long-term unemployed (1997-).
S	Increasing requirements in terms of occupational and geographical mobility in umempl. Insurance (2000-)		Providing employer tax reductions corresponding to 75% of wage costs over 2 years for recruiting persons 57 or older (2000-).		Providing employers tax reductions for hiring long-term unemployed (1999-).

	Unemployment benefits: benefit level, duration, eligibility and job availability rules	**Means-tested schemes: housing allowances, social assistance, child care subsidies**	**Older workers : disability, early retirement schemes**	**Employment-conditional benefits**	**Employment subsidies**
UK	Introducing a work-focused interview to benefit system (ONE, 1999-)	Introducing the national minimum wage to support the "make work pay" policy (99). Introduction of a 10p rate/£ of income tax on the first £ 1500 of taxable income (1999).	Providing the tax-free allowance and in-work training grant for unemployed aged 50 or over as a New Deal initiative (2000-).	Linking the receipt of benefits more strictly to participation in New Deal initiatives for young (18-24) unemployed, disabled, lone parents and spouses of unemployed. Introducing tax credits for families with children and disabled to provide guaranteed minimum income when employed (1999).	Offering subsidy to cover payments up to 6 months (and training costs for taking on young unemployed) for hiring those in the New Deal initiatives.

Sources: *Joint Employment Report 2000 (2000-07-28)*, *MISSOC INFO: Evolution of social protection in the Member States of the European Union* (2/99, 2/2000, DG EMPL), *National Action Plans for Employment 1998, 1999 and 2000*

ANNEX C: REFORMS OF HEALTH CARE SYSTEMS

Introduction

In analysing the overall evolution of public expenditure and in evaluating its quality and contribution to growth, it is essential to consider the health sector. As well as providing an essential public service, the provision of health care in Member States is important from an economic perspective. Data from the OECD suggest that the total expenditure on health care in 1998 ranged from 5.9% of GDP to 10.6% of GDP for EU Member States. The average share of health care expenditure in GDP in Member States has been around 8% throughout the 1990s. Similarly, public expenditure on health is one of the most important expenditure items for public budgets. The average share of public expenditure in GDP is around 6%. Moreover, the health sectors of Member States are generally important sources of employment.

National health care systems: similarities and differences

Health care systems in Member States differ considerably as regards the methods of provision of services, the means of financing the overall system, and payment systems for hospitals and doctors. Other differences not reported in this annex are the supply of doctors, the provision of out-patient care and dental care, the extent of patient choice, and the regulation systems.

Financing systems[27]*:* Essentially, there are two philosophies guiding the financing of and provision of health care. One group of countries has chosen general taxation as a main source of financing whereas some other countries rely primarily on social insurance. Additionally, in all EU countries, there exist supplementary financing systems such as voluntary health insurance and user charges.

General taxation is the principal source of financing in eight countries (DK, UK, S, IRL, I, FIN, E, P). Earmarked taxes represent a significant share only in Italy. Other Member States rely more heavily on insurance, notably F, NL, D, A and L. These are compulsory social insurance systems, except in the Netherlands where there is a mixture of social and private insurance. In Belgium, both taxes and social insurance are equally important sources of financing. In Greece, the largest share is financed by user charges and the rest by general taxes and social insurance.

Over the last 15 years, there have been some significant changes in financing systems. In Spain, general taxation has replaced social insurance as the dominant source of funding. In most countries the role of voluntary health insurance has increased somewhat, and user charges have increased significantly in many countries (B, FIN, S and P).

Provision of services: in the past tax-financed systems tended to be characterised by mostly public providers of services. In these countries the public sector still generally acts as the principal agent of service delivery in some areas, such as hospitals, primary care centres and ambulance services. However, many of these countries have introduced

[27] Source: Mossialos and Le Grand (1999)

and continue to experiment with models of contracted services, most notably the UK. This means a separation of purchasers from providers including more independence for public providers, and greater use of private and non-profit providers operating in market. In this sense, the pattern of service provision is approaching that applied in insurance-based systems.

Payment systems: The methods of financing hospitals in Member States have changed significantly over the last 15 years. There is a clear move from open-ended retrospective funding of hospital activities to the establishment of prospective budgets and purchaser-provider contractual agreements. The main types of hospital financing are prospective budgets mainly based on historical spending (DK, EL, F); prospective budgets based on hospital activities or functions (D, IRL, L, NL, P); prospective budgets combined with activity-related payments (B, E, A); and activity-related payments with case-mix-based payments (S, I) and purchasing packages of hospital services (UK, FIN). There are also different methods for paying doctors including: capitation, i.e. payment per numbers of patients (IRL, I, UK); a salary (EL, P, FIN and S); and /or a fee-for-service (B, D, F and L). In some countries payment for doctors is characterised by a mix of the above three payment systems. Payment systems may be applied differently to general practitioners from specialists; capitation or salary are more often applied to general practitioners whereas fee-for-service payment systems apply more often to specialists.

Trends in health expenditure

Since 1960 expenditure on health care in Member States has generally shown a steady upward trend; health expenditure as a share of GDP roughly doubled over the period 1960-1990. Moreover, public expenditure on health grew at an even faster rate as a result of increased coverage by public insurance.

More recent data for the 1990s reveal that growth of total health expenditure as a share of GDP generally continued in Member States up until the mid-1990s albeit at a slower pace than in earlier years. However, in the second half of the 1990s, health expenditure as a share of GDP has either been stabilised, or been reduced. (See Table C.1.) Unfortunately, there is no comparable data since 1999, and so it is not possible to see whether policies have changed in the light of the most recent economic upturn.

Table C.1 Total expenditure on health as a share of GDP

	1990	1993	1996	1998
B	7.4	8.1	8.6	8.8
DK	8.4	8.7	8.3	8.3
D	8.7	9.7	10.6	10.6
EL	7.6	8.3	8.3	8.3
E	6.9	7.6	7.1	7.1
F	8.8	9.7	9.7	9.6
IRL	7	7.8	7.2	6.4
I	8.1	8.6	8.1	8.4
L	6.6	6.7	6.4	5.9
NL	8.8	9.4	8.8	8.6
A	7.2	8.1	8.9	8.2
P	6.4	7.5	7.7	7.8
FIN	7.9	8.3	7.7	6.9
S	8.8	8.9	8.7	8.4
UK	6	6.9	7	6.7
EU*	***7.6***	***8.3***	***8.2***	***8.0***

* unweighted average
Source OECD Health Data 2000

Nominal health spending per capita (in Euro PPS - see Table C.2) also reveals an upward trend for the 1990s. Between 1990 and 1998 nominal expenditure per capita increased in all countries, with growth rates ranging from 2.1% to 9.2%. The trend for expenditure for Sweden and Finland is somewhat different from that of other Member States, as these two countries saw a decline in nominal terms in health expenditure per capita in the early 1990s.

Table C.2 Total expenditure on health per capita Euro PPS (nominal prices)

	1990	1993	1996	1998	avg. % growt 1991-98
B	1177	1496	1761	1974	6.7
DK	1360	1600	1850	2023	5.1
D	1515	1709	2111	2298	5.4
EL	667	855	1028	1108	6.6
E	769	941	1034	1151	5.2
F	1457	1724	1860	1968	3.9
IRL	752	1040	1223	1377	8.0
I	1246	1429	1560	1691	4.0
L	1402	1750	2011	2099	5.2
NL	1329	1558	1779	1965	5.0
A	1137	1440	1818	1863	6.5
P	581	815	1002	1172	9.2
FIN	1217	1242	1371	1425	2.1
S	1409	1405	1583	1654	2.1
UK	904	1119	1289	1378	5.5
EU*	***1128***	***1342***	***1552***	***1676***	***5.4***

unweighted average
Source OECD Health Data 2000

Table C. 3 Public expenditure on health as % of GDP

	1990	1993	1996	1998
B	6.6	7.2	7.6	7.9
DK	7	7.2	6.8	6.8
D	6.7	7.5	8.3	7.9
EL	4.8	4.8	4.9	4.7
E	5.4	6	5.5	5.4
F	6.7		7.4	7.3
IRL	5	5.7	5.2	4.8
I	6.3	6.3	5.5	5.7
L	6.1	6.2	5.9	5.4
NL	6.1	7	6	6
A	5.3	6	6.3	5.8
P	4.2	4.7	5.1	5.2
FIN	6.4	6.3	5.8	5.3
S	7.9	7.7	7.4	7
UK	5.1	6	5.9	5.6
EU*	***6.0***	***5.9***	***6.2***	***6.1***

unweighted average
Source OECD Health Data 2000

Table C.3 contains data on public expenditure on health care as a share of GDP throughout the 1990s, and Table C.4 contains data on the share of public spending in total spending. In most countries, the share of the public sector in health expenditure has been falling throughout the 1990s. The decline of the public share has been most marked in Italy, where it fell by 10.1% between 1991 and 1998. However, some countries have shown an increase in the public share of health expenditure – this is notably the case for Ireland where expenditure increased by 4.1% between 1991 and 1998.

Table C.4 Public expenditure on health care as a share of total expenditure %

	1990	1993	1996	1998
B	88.9	88.7	88.8	89.7
DK	82.6	82.6	82.4	81.9
D	76.2	77.5	78.3	74.6
EL	62.7	58.2	58.7	56.8
E	78.7	79.7	78.5	76.9
F	76.9		76.3	76.4
IRL	71.7	72.8	72.5	75.8
I	78.1	73.1	67.8	68.0
L	93.1	92.9	92.8	92.3
NL	68.7	74.7	67.7	70.4
A	73.5	74.2	70.5	70.5
P	65.5	63.0	66.7	66.9
FIN	80.9	76.1	75.9	76.3
S	89.9	85.7	84.8	83.8
UK	84.2	85.9	83.7	83.7
EU*	***78.1***	***77.5***	***76.4***	***76.3***

*unweighted average for EU-14 excl. F for 1991-1994
Source OECD Health Data 2000

Factors affecting the evolution of health expenditure

There are a number of different demand and supply factors which have driven the increase in health expenditure per capita over the last years, although it is unclear whether these same factors are likely to continue to drive health expenditure. On the demand side, several factors have influenced the evolution of health care expenditure:

- *Increases in income levels:* as income levels rise consumers demand more health care. Empirical analysis reveals that the income level for different countries are significant determinants of overall levels of health expenditure per capita. However, there is little consensus on the value of the income elasticity of health expenditure - some studies estimate it to be greater than unity and some less.

- *Extensions of health cover:* compulsory insurance coverage was extended significantly in past decades. By the end of the last century, universal coverage of populations was practically achieved in almost all Member States. However, certain types of treatment are usually excluded from this coverage.

- *Ageing populations:* people tend to consume more health care as they get older. Studies of past expenditure indicate that ageing did not play a significant role in driving health expenditure in the last century. However, population projections suggest this is likely to change during the first half of this century. Nevertheless, the likely impact of population ageing on health expenditure is not completely clear as some literature suggests that as life expectancy increases people can expect to enjoy a greater number of years in good health. The overall impact of population ageing on public expenditure will depend crucially on policies for long-term care of the elderly.

On the supply side, several factors affect the evolution of health care expenditure:

- *Technological change:* advances in medical technologies covering drugs, equipment and medical procedures have generally led to increases in medical costs. Some advances have been cost-saving, but others have led to the introduction of more expensive technologies (usually with improved benefits for the patient), or to the treatment of previously untreatable conditions.

- *Supply–induced demand:* many health systems in Member States have experienced an over-supply of physical capital such as beds. This over-supply, combined with inappropriate payment systems, may well have led to the supply-induced use of facilities (e.g. longer hospital stays).

- *High medical price inflation:* many countries have seen medical inflation consistently higher than general price inflation, leading to an increased share of health expenditure in GDP. High levels of medical price inflation generally reflect a low level of competition in the provision of health care.

Cost containment reforms[28]

Cost containment has been a dominant theme for most Member States since the mid-1970s. Almost all Member States have introduced measures aimed at directly or indirectly containing public expenditure on health care, but the emphasis of these reforms has changed considerably over time. From the mid-1970s to the mid-1980s, the emphasis of reforms was on direct and indirect controls on health expenditure. These included: control over facilities such as hospital beds and staff; control over investment decisions in capital and technology; as well as control over the entry to medical education.

From the mid-1980s, the emphasis shifted to budget setting measures. Initially this involved budgetary ceilings and targets for different sectors, but later this evolved to setting budgets for individual providers which were often combined with activity-related payments. Payment systems for doctors were also often changed Direct and indirect control measures continued during this period, but evolved into price controls (pharmaceuticals, reference price systems, alternative models for reimbursement of pharmaceuticals) and into providing incentives for alternatives to hospital care.

Since the 1980s, Member States have also used budget shifting measures. These primarily consisted of an increased use of cost sharing (e.g. user charges) and voluntary health insurance. Additionally, restrictions in treatments (through priority setting and through limiting reimbursement for certain types of service such as dental care) and on reimbursements for certain types of pharmaceutical products have been introduced. A few countries have also adapted public budget shifting, above all, by shifting costs of long-term care of the elderly to the social services budget.

From the mid-1990s onwards, the emphasis of health care reforms has been on budget shifting, rationing, and on evidence-based purchasing decisions. Indirect control mechanisms such as assessment of health technology, and the introduction of management and information systems, have also been used increasingly in the 1990s. The reforms carried out between the 1970s and the early 1990s[29] have had some success in containing overall costs. However, there is insufficient information to be able assess the long-term effects of the measures taken. Notably, macro measures to contain costs can often have important repercussions for the micro-level efficiency of health care provision. Nor is it possible to distinguish the effects of individual measures either because new measures have quickly followed previous ones, or because many countries have implemented packages of reforms made up of a number of individual measures.

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28 The information contained below on reforms is taken from Mossialos E. and J. Le Grand (eds., 1999): Health Care and Cost Containment in the European Union, *The London School of Economics and Political Science*

29 There is little information about more recent reforms. The Commission has requested this information from Member States.

Budget setting measures appear to have been the most effective way of controlling public expenditure on health care. In particular, these measures have been most successful in countries where the health care is mainly tax-financed and where there is monopsony power through single purchasers of health care. Insurance-based systems on the other hand, have usually succeeded better in controlling costs when regulating providers' fees and implementing direct controls. However, the overall result seems to be less uniform and inferior to countries with tax-financed systems.

Overview of reforms to health are systems

MID-1970s/MID-1980s	MID-1980s/MID-1990s	LATE 1990s
Emphasis: Direct and indirect controls	*Emphasis*: Budget setting	*Emphasis*: Budget shifting, rationing and evidence-based purchasing decisions
Purchasing/provision of services: Public integrated model dominant in systems mainly financed by taxation (Beveridge type); public contract model dominant in systems financed by statutory insurance (Bismarck type). Payers gradually transformed into purchasers in some social insurance-based systems.	*Purchasing/provision of services*: Public contract model replaces the public integrated model in Denmark, Sweden and the UK. Also the predominant model for the hospital sector in Finland and in Italy. Purchasers in some insurance-based systems set budgets for each of the contracted sectors, negotiate doctors' fees, prices and volume of services.	*Purchasing/provision of services*: Public contract model dominant in most countries. The role of private finance, but not necessarily private provision, increases.
Budget shifting • Role of cost-sharing still small • Voluntary health insurance negligible except in the Netherlands, Germany, Austria and France • Exclusion of services from reimbursement limited but spa treatment excluded in Italy. Elsewhere, negative lists for drugs introduced and parts of dental care no longer covered in several countries	*Budget shifting* • Significant increases in co-payments • Increasing role of voluntary health insurance • More drugs included in negative lists and even more switched to over-the-counter (OTC) status • More services excluded from reimbursement (mainly dental care, cosmetic surgery, ophthalmic care)	*Budget shifting* • Increases in user charges • More pharmaceuticals switched to OTC status • Reduction in the number of those exempted from paying co-payments (e.g., wealthy pensioners) • Reduction in the number of diseases exempted from co-payment • Explicit rationing decisions • A greater role for voluntary health insurance • Alternatives to hospital care and long-term care coverage schemes are further developed, but mainly financed by private sources

MID-1970s/MID-1980s	MID-1980s/MID-1990s	LATE 1990s
Budget setting • Budget ceilings for hospitals (prospective global budgets in France, historical budgets in Denmark) • Target budgets for each contracted sector (Germany and the Netherlands) • Relative value scales for payment of doctors (Germany) or hospital services (diagnostic tests in Belgium) • Changing doctor payment systems (capitation payments in Italy, salaried GPs in Portugal, salaried specialists in Irish hospitals)	*Budget setting* • Introduction of fixed or target budgets for overall or public expenditure on health • Sectoral budgets for health services, mainly for hospitals and pharmaceutical care • Individual fixed or target budgets for doctors (UK, Ireland) • Relative value scales for payment of doctors (Luxembourg and the fee-volume trade-off payment system in France) • More countries introduce capitation for payment of first contact doctors • Fee-for-service payments are introduced in capitation-based systems to encourage preventive medicine (immunisations, screening) and day surgery • Performance-related payment systems for hospitals are introduced in several countries (Diagnosis Related Group (DRG) type or activity-related)	*Budget setting* • Fixed budgets replace target budgets • Budgets are combined with activity-related payments • Sectoral budgets are replaced by budgets for individual providers

MID-1970s/MID-1980s	MID-1980s/MID-1990s	LATE 1990s
Direct and indirect controls • Controls of hospital staff numbers (Ireland, Spain) • Controls on prices (pharmaceutical products, per day payments in hospitals) • Controls on volume (e.g. maximum number of items per prescription) • Controls on hospital beds (most countries) • Controls on capital investment and new technology • Incentives to develop alternatives to hospital care (Northern European countries) • Manpower controls (numerous clauses in medical and dental schools, controls over entry to specialist training) • Sanctions for excess prescribing	*Direct and indirect controls* • Price control systems for pharmaceuticals in all countries except in Germany and the UK • Reference price systems for non-patented pharmaceuticals in Germany, Sweden and Denmark and for all pharmaceuticals in the Netherlands and Italy • More incentives to develop alternatives to hospital care (mainly in Belgium and Denmark) • Further reduction in hospital beds • Practice guidelines for office-based doctors with financial penalties (France and Austria) • Technology Assessment Institutions were established in several countri²es	*Direct and indirect controls* • A greater role for Health Technology Assessment in coverage and purchasing decisions • Further controls on capital investment and new technology • Further reduction in hospital beds • Development and use of sophisticated information systems • Further manpower controls (mainly doctors) • More investment in developing management competence

Source: E. Mossialos and J. Le Grand "Health Care and Cost Containment in the European Union", London School of Economics, 1999.

ANNEX D: REFORM OF PUBLIC PENSION SYSTEMS[30]

B	Building on important reforms introduced in 1997 for private sector employees, the government together with social partners is reflecting upon further reforms to cover for public sector employees and the self employed. Consideration is also being given to the promotion of private funded pensions.
DK	The transformation of a largely unfunded system to one with a much higher degree of funding has been under way for some years. 1999 saw a temporary contribution to the ATP (Labour market supplementary pension) amounting to 1% of the average wage made permanent and a tightening up of early retirement rules.
D	Pension reform is still high on political agenda. A tax reform package was agreed enabling increased revenues from energy taxes to partially offset a reduction in the contribution rate to pensions by employees and employers. Changes were also agreed for 2000 and 2001 linking increases in public pensions to inflation rather than the rise of net wages; in the ongoing discussions on pension reform, the federal government has, however, offered to link the rise in public pensions due on 1 July 2001 to net wages again (adjustment for the increase in net wages due to income tax reform). A planned pension reform has the target to restrict the increase in social charges due to demographic changes so as to secure an appropriate level of pensions to 2030 and beyond. An additional capital funded pension is being envisaged. Pending these reforms, the reforms agreed by the preceding government in 1998 and suspended by its successor would take effect.
EL	A two phase reform strategy was announced in 1998. The first phase was largely organisational, involving for example the introduction of a single social security number. The second phase will require a major overhaul of public pensions, and could involve the consolidation of retirement ages in different pension regimes, adjusting contribution and eligibility rates to sustainable levels, and the introduction of compulsory occupational pension scheme. Announcements on the second phase are still being awaited.
E	Important reforms were introduced in 1997 (based on the 1995 Pacto de Toledo) which placed public pensions on a more sustainable footing. Further reforms are scheduled for 2000. They will need to address measures to increase the effective retirement age and discourage early retirement, and special pension regimes (e.g. covering self-employed, agricultural workers). During 1999, a disagreement broke out between the Central Government and the regions as to whether the latter's non-contributory pensions should be increased by above the inflation rate. In 2000 a Social Security fund reserve has been created to address the problem of the ageing population . The initial fund amounts to 0.1% of GDP and there is a commitment in the Updated Spanish Stability Programme to further increase this fund reserve

[30] The table is based on the report on the implementation of the BEPG. The process of updating the table is not yet complete.

F	After postponing reforms adopted in 1997, a report was presented in 1999 to serve as a basis for dialogue between authorities and social partners which is now taking place. Prime Minister announced in March 2000 broad reform guidelines, including boosting the assets of the pension reserve fund, the establishment of a monitoring body on pensions (Conseil d'Orientation des Retraites) and, for civil servants, the possible extension of the minimum contribution period needed to receive a full pension.
IRL	In May 1998, the Government outlined its plans for creating a fully developed pension system. On foot of a government decision in July 1999, an annual provision of 1% of GNP is made to pre-fund future public pension costs. Part of the proceeds from the privatisation of the State telecom company will also go into the National Pensions Reserve Fund (to be established 2000; legislation pending). Part of the proceeds were also used to buy-out the State's future pension liabilities to pre-privatisation staff.
I	A series of reforms were undertaken in the 1990s, the last in 1997. Although these reforms have succeeded in bringing down the rate of growth of pension outlays to GDP compared to the pre-reform situation, public pension expenditure remains high and might weaken long-term public finance sustainability. The main shortcomings of the present system are an excessively long transition period and rather generous benefits from an actuarial point of view. Moreover, there is still a high degree of uncertainty about future reforms. No changes to the system were made in 1999 and in 2000. A revision of the parameters of the system is scheduled to take place in early 2001.
L	Reforms were introduced in 1998 to align the pension regime for new public servants with that applying in the private sector.
NL	With a large proportion of pensions already funded, the impact of ageing populations is being addressed via the reduction of public debt and measures to increase employment rates.
A	Large reform packages were adopted in 1993 and more recently in 1998. The latter reform addressed incentives for early retirement, tightened up eligibility for disability pensions, and aligned the pension system for civil servants to the general system. Also an annual adjustment formula was introduced making an adjustment for the financial impact of increased life expectancy. This however was suspended in 1998 and 1999 and must be addressed in 2000.
P	A new framework law was approved by Parliament in July 2000 in response to a White Paper presented in 1998. It should be implemented in the near future. The novelties are: the retirement

	age will be made more flexible, the pension formula will be altered (instead of using the best 10 out of the last 15 years, the whole contribution history will be used) making the system much less generous, and the Stabilization Fund will be engrossed to almost 50 per cent of the current annual private sector pension outlays. The Fund, at the end of 1999, had about 3 per cent of GDP accumulated assets
FIN	During 1999, agreement was reached between labour market organisations on measures to postpone retirement and extend active participation. Together with a large primary balance, this will make it easier to meet increased age-related expenditures in coming years. However, questions remain about the long-term sustainability of existing public pension schemes, and further reforms may be required to tackle imbalances at source.
S	Reforms adopted in 1998 are currently being phased in. They are increasing the degree of funding of pensions. They also establish a closer link between contribution paid and benefits received, i.e. taking into account the full working career, and indexation clauses were adjusted.
UK	Estimates released in 1999 show that the public finance implications of ageing populations for the UK are relatively favourable. Extensive reforms proposed in late 1998 were adopted in 1999. They provide for a 'minimum income guarantee' and a replacement of SERPS (state earnings related pension scheme) with a second flat rate pension.