

Taking stock of the European Employment Strategy (EES): the evidence behind improved performances of EU labour markets

1. Introduction

1.1. The European Employment Strategy (EES)

The European Employment Strategy (EES) was launched in November 1997 at a special European Council in Luxembourg. Since the late 1970s, labour market developments in Europe, characterised by both persistently high unemployment and correspondingly low employment creation, were widely felt to be unsatisfactory. As a result, the launch of the EES was intended to send a strong signal that the EU considered employment to be a top priority. The Lisbon European Council (March 2000) gave further impetus to the EES by linking it to the broader economic and social agenda for the EU.

The basic role of the EES – *the promotion of more and better jobs* – was

set out in the Employment Guidelines approved by the Council in 2003 for the period 2003-2005¹. These employment guidelines set three overarching objectives: i) full employment; ii) quality and productivity at work; and iii) strengthening social cohesion and inclusion. They comprise ten specific guidelines plus guidance on improving the governance of employment policies.

The main aim of this chapter is the evaluation of the EES, focusing on each of the three overarching objectives². As regards the labour market, although the analysis in this chapter and elsewhere strongly suggest that structural improvements have occurred in recent years, the situation (in a number of Member States) is far from satisfactory. Employment rates in many Member States and in the EU as a whole remain significantly below targets and overall progress has been

slow in recent years, while both actual and structural unemployment rates remain high, at 9.0 percent and 8.5 percent, respectively, in 2004.

In a Communication to the Spring European Council³, the European Commission called for the renewal of the Lisbon Strategy, to refocus it on growth and jobs. In a subsequent Communication⁴, the European Commission set out the first integrated guidelines for growth and jobs⁵ for the period 2005-2008, which are presented in one comprehensive document with two parts, taking account of the interrelations and synergies between micro/macroeconomic and employment policies. The adoption of this revitalised strategy is also considered to be a necessary condition⁶ – although not wholly sufficient – for securing the environmental sustainability of growth and for modernising and advancing Europe's social model.

1 In this chapter all references to employment guidelines refer to the 2003 set: OJ L197/13, Council Decision of 22 July 2003 on guidelines for employment policies of Member States. The employment guidelines should be fully reviewed only every three years (i.e. the next round is scheduled for 2005), while in the intervening years their updating should remain strictly limited.

On 12 April 2005, the Commission published its recommendation for *Integrated Guidelines for Growth and Jobs* for the period 2005-2008, COM(2005) 141 final, which for the first time, and in order to improve governance, put together in a single document both the Commission Recommendation on the Broad Policy Guidelines and the proposal for a Council Decision on the Employment Guidelines.

The new set of integrated guidelines was approved at the European Council of June 2005, leading to the Council Decisions of 12 July 2005 on guidelines for employment policies of Member States (OJ L205/21), and on the broad guidelines for economic policies of the Member States and the Community (OJ L205/28).

2 This is part of a second review of the European Employment Strategy. A first review took place in 2002, leading to Communication COM(2002) 416 final of 17/7/2002, entitled *Taking stock of five years of the EES*. This Communication was accompanied by a technical document containing the main findings of an evaluation programme initially drafted by the Commission and then endorsed by the Employment Committee. The evaluation programme included: i) *national impact evaluation studies*; and ii) *an aggregate assessment of employment performances at the EU level*.

3 Communication to the Spring European Council *Working together for growth and jobs – a new start for the Lisbon Strategy*, Communication from President Barroso in agreement with Vice-President Verheugen, COM(2005) 24.

4 Communication of the European Commission *Integrated Guidelines for Growth and Jobs*, Communication from the President Barroso, in agreement with Vice-President Verheugen and Commissioners Almunia and Špidla, COM(2005) 141.

5 Including both the Broad Economic Policy Guidelines and the Employment Guidelines.

6 *Achieving higher growth potential and more jobs will provide an essential contribution to sustainable development and cohesion*, COM(2005) 141.

1.2. Labour markets in a rapidly changing environment

The 1990s witnessed a series of far-reaching changes in Europe, with a potentially large impact on labour markets, principally: i) the single market programme; ii) the introduction of the single currency; iii) the accession of three new Member States; iv) German reunification; v) deep transformations in a number of Central and Eastern European countries.

All this turbulence makes it difficult to isolate the impact on labour markets of the launch of the EES in 1997. Moreover, the EES is also part of a wide range of policies for strengthening economic governance in the EU in general and in the euro area in particular. Since the second half of the 1990s⁷, several

rounds of the “guidelines package” have recommended a policy-mix judged more favourable to sustainable economic growth, better labour market outcomes, social cohesion and inclusion, as well as environmental sustainability. These instruments involve the coordination of three major policy strands: microeconomic, macroeconomic and employment.

2. General macroeconomic developments

2.1. Retrospective

The Lisbon European Council of 23 and 24 March 2000 agreed on a new strategic goal for the EU in order to

strengthen employment, economic reform and social cohesion as part of a knowledge-based economy. At that time, the EU was experiencing its best spell of economic performance since the mid-1970s in terms of economic growth, employment creation, low inflation, and fiscal consolidation. There was a clear sense of optimism following the successful introduction of the single currency, progress achieved with the single market project, and the opportunities arising from the (then) imminent enlargement of the EU. However, the Council, having realised that the situation in some areas was far from satisfactory, agreed on a number of policy measures leading in some cases to the setting of quantified targets that subsequently turned out to be rather challenging. The need for action was identified in a number of areas: employment creation – *the creation of more and better jobs* – with the setting of ambitious employment rate targets in order to move EU economies towards full employment; the modernisation of social protection⁸; and the promotion of social inclusion in order to reduce the incidence of poverty.

In order to assess the progress made towards meeting these quantified targets, and in particular those for the employment rate (table 10), it is important to point out that at the time of the Lisbon Council a realistic average economic growth rate was assumed to be around 3%⁹. In reality, actual GDP growth was considerably lower (table 11).

Table 10 – Employment rate^{a)} targets for the EU

	2005	2010
Overall employment rate (aged 15 to 64)	67.0	70.0
Employment rate for women (aged 15 to 64)	57.0	60.0
Employment rate for older workers (aged 55 to 64)	---	50.0

Note: a) The ratio between employment and working age population.

Table 11 – Average annual percentage changes in the period 2001-2004 (except for the unemployment rate which are period averages)

	GDP	Employment	Unemployment rate
EU-15	1.5	0.8	7.7
EU-10 ^a	3.4	-0.5	---
EU-25	1.6	0.6	8.8

Source: DG ECFIN, Ameco and Eurostat.

Note: a) CZ, EE, CY, LV, LT, HU, MT, PL, SI, SK.

7 Since 1996 for the Broad Economic Policy Guidelines, and since 1998 for the Employment Guidelines.

8 According to the presidency conclusions, the major aims for the modernisation of social protection systems were: i) to adapt them in order to ensure that work pays; ii) to secure their long-term sustainability in the face of population ageing; iii) to promote social inclusion and gender equality; and iv) to provide quality health services.

9 The presidency conclusions of the Lisbon European Council of March 2000 state the following: “If the measures set out below are implemented against a sound macro-economic background, an average economic growth rate of around 3% should be a realistic prospect for the coming years.”

In the period 2001-2004, the average annual GDP growth rate for the EU-15 turned out to be around half of what had been initially anticipated. Obviously, given the strong relationship between economic growth and labour market performance, this had a negative impact on employment creation.

Moreover, the weakness of domestic demand in some EU Member States, especially in Germany since 2000, is

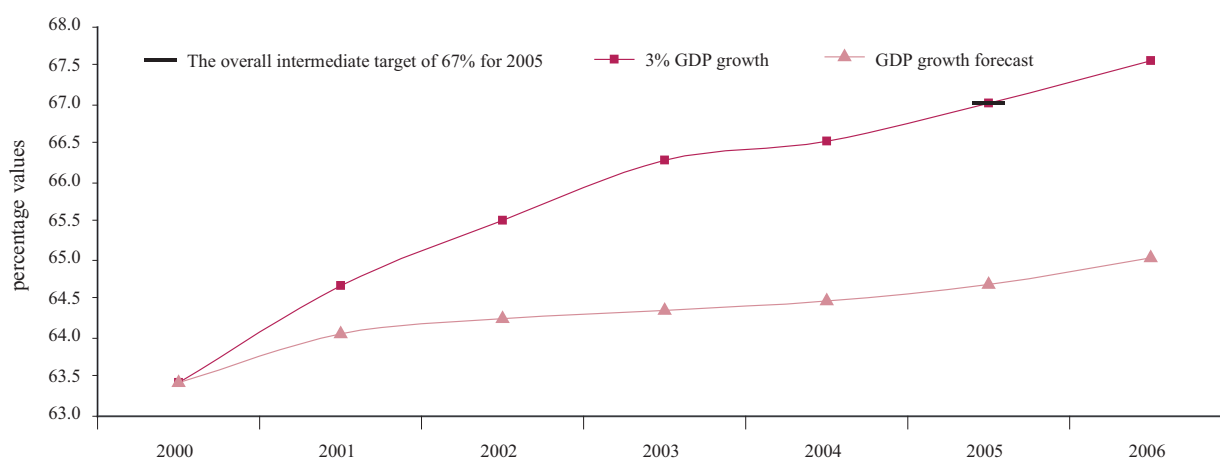
worrying not only in itself, but also because of the potential knock-on effects in the rest of Europe (further explored in Chapter 3 of this report), which represents a major downward risk to the current economic recovery in Europe in general, and job creation in particular. Given the low levels of economic confidence, firms might not want to expand in the present circumstances (early on in the upswing), fearing a possible "double-dip" economic

downturn. However, given the sustained improvement in price-competitiveness and the introduction of substantial reforms in the labour market, Germany is now in a better position to take full advantage of the next economic upswing than in recent years, especially as regards employment creation.

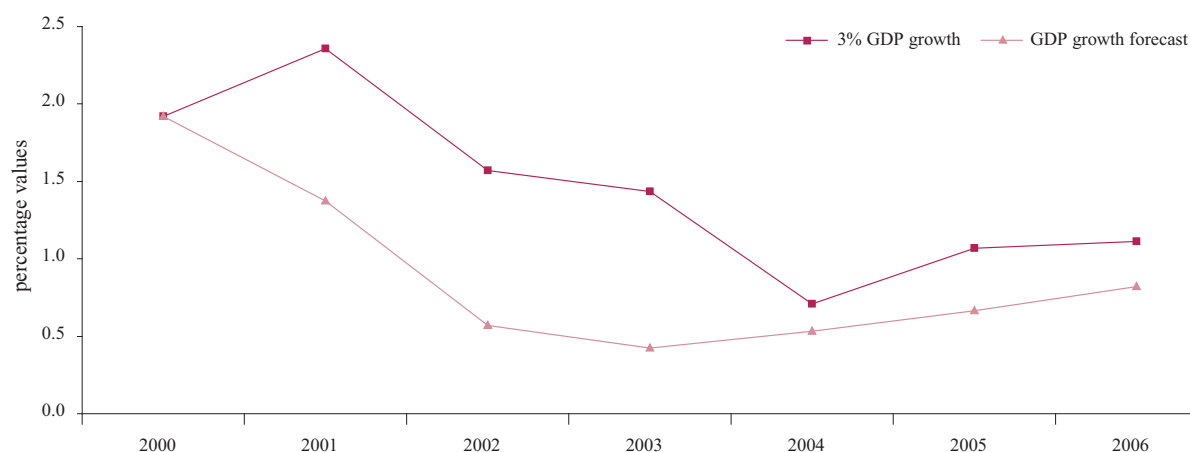
A major aim of this chapter is to evaluate the relative importance of a num-

Chart 67 – The jobs cost of weak growth

Estimate of the impact on the total employment rate of GDP growth below 3% in the EU-15, assuming the implicit employment elasticity of the Commission's Spring 2005 forecast



Employment growth rates



Source: DG ECFIN, Ameco.

ber of factors contributing to labour market development. They include: the economic cycle, the relatively poor progress in raising productivity/growth, and factors of a more “structural” nature some of which can be directly linked to the functioning of labour markets, such as the efficiency of job matching, active labour market policies, etc.

Since 1997 (the start of the EES) and then 2000 (the setting of the first employment rate targets in the Lisbon Council), the lack of progress in raising long-term growth and also the economic slowdown have clearly played a major role in labour market developments. In order to assess the impact of low growth (due either to cyclical change or to low productivity growth) it would be helpful to answer the following question: how many additional jobs could have been created had average economic growth remained close to 3% as envisaged at the outset of the Lisbon agenda?

A comprehensive (and potentially more satisfactory) answer to this question is beyond the scope of this chapter. However, a rough, but also conservative estimate of the cost in terms of jobs for the EU-15 of economic growth below the 3% threshold can be provided up to 2006, the latest year for which the Commission has published an economic forecast (Spring 2005). This estimate basically applies the (implicit) employment/growth elasticity assumed in the Spring 2005 forecast to a hypothetical GDP growth rate of 3%. Given the responsiveness of employment to cyclical economic

change, it can be argued that this represents a conservative (or lower) estimate of the actual employment loss associated with low growth.

According to these calculations, economic growth below 3% during the period 2001-2004 cost, in cumulative terms, over 5 million jobs in the EU-15, which represents a decline in the average annual employment growth rate from a hypothetical value of 1.5% to the projected value in the Spring 2005 economic forecast of just 0.7%. This exercise also suggests that an average economic growth of 3% during the period 2001-2004 would have yielded a total employment rate of about 67.5% in 2006 (67% in 2005), thus closer to meeting the 70% target by 2010¹⁰ (chart 67).

2.2. Prospects

In the second half of 2004, economic activity in the EU, although remaining positive, slowed down unexpectedly¹¹. This reflects in part the increase in the price of oil and the strength of the euro. During 2004, the main driver of growth in the EU shifted from the external sec-

tor in the first half of the year, to domestic demand in the second half. According to the Commission's Spring 2005 economic forecast, GDP growth in the EU as a whole is expected to decline from 2.4% in 2004 to 2.0% in 2005 (which basically reflects the lower carry-over into 2005) and to increase in 2006 to 2.3% (i.e. closer to the potential growth rate) as the effects of high oil prices and euro exchange rate appreciation gradually work their way through and eventually taper off (table 12). The continuation of the economic recovery over the period of the forecast is driven by the acceleration in domestic demand.

In line with the lower than expected reaction of labour markets to cyclical fluctuations in the recent economic slowdown of 2001-2003¹², together with the usual lagged response of labour markets, employment creation is only expected to pick-up gradually from 0.9 million jobs in 2004 (for the EU-25) to about 1.5 million in 2006. According to the Spring 2005 *Economic Forecasts*, the overall employment rate is (implicitly) projected to rise from 64.4% in 2003 to 65.0% in 2006. The unemployment rate is forecast to remain relatively stable

**Table 12 – Average annual percentage changes
in the period 2005-2006
(except for the unemployment rate which are period averages)**

	GDP	Employment	Unemployment rate
EU-15	2.0	0.7	7.9
EU-10 ^a	4.4	0.7	---
EU-25	2.2	0.7	8.9

Source: DG ECFIN, Ameco.

Note: a) CZ, EE, CY, LV, LT, HU, MT, PL, SI, SK.

10 The intermediate target for the total employment rate in 2005 is 67%.

11 At the time of writing, the Commission's Autumn 2005 economic forecast had not yet been published.

12 In the EU-15, during the 1992-1993 recession the unemployment rate rose by about 3 percentage points (pp) to above 10%, while employment declined by approximately 3 pp. This contrasts with labour market outcomes in the 2001-2003 period, where the average unemployment rate increased by only 1 pp, peaking at 9% in the first quarter of 2004, while employment levels actually increased by about 2 pp in cumulative terms.

throughout the period 2005-2006 at close to 9%, before edging downwards in 2006.

3. Taking stock of the three overarching objectives of the EES

3.1. Progress made towards the employment rate targets/full employment

The period of economic slowdown between 2001 and 2003 had a markedly negative impact on labour market outcomes in general, halting (or holding back) progress towards the employment rate (ER) targets. In order to restore a satisfactory situation that would allow the ER targets to be reached, an economic recovery is essential – but will not suffice by itself. *Europe's underlying economic potential depends on its ability to boost employment and productivity growth simultaneously. This will rely on further structural reforms not just in the labour market but also in the services, product and financial markets*¹³.

As explained in Chapter 1, in 2004, the total employment rate increased by 0.4 percentage points, reaching 63.3% in the EU-25 (table 14), after having stagnated at around 63% in the cyclical downturn of 2001-2003. The employment rate for women continued its gradual rise, approaching 56% of the female working age population in 2004, largely on account of the increased labour market participation of younger age cohorts. The employment rate of older workers

(table 15) has increased significantly in recent years reaching 41.0% in 2004. This remarkable rise partly reflects the delayed impact of past reforms of pension and early retirement schemes in a number of Member States.

In the 2001-2003 period¹⁴, the growth rate for older workers in employment significantly outpaced that of total employment in the EU-25, increasing by an annual average of 5.5% compared with 0.3%¹⁵. A simple breakdown of employment

Table 13 – Employment rate				
Contribution to changes by gender and age groups				
	EU-25	EU-15	EU-25	EU-15
	2003		2001	
Employment rate	62.9	64.4	62.8	64.1
	2003-2001		2001-1997	
change in pp $\simeq (1)+(4)$	0.1	0.3	2.2	3.4
due to the employment rate effect				
TOTAL (1) $\simeq (2)+(3)$	0.3	0.4	1.9	3.1
Young age (15-24)	-0.2	-0.2	0.3	0.7
Prime age (25-54)	0.1	0.1	1.3	2.1
Older age (55-64)	0.5	0.5	0.3	0.4
MALE (2)	-0.2	-0.1	0.4	1.1
Young age (15-24)	-0.2	-0.1	0.1	0.3
Prime age (25-54)	-0.2	-0.2	0.3	0.6
Older age (55-64)	0.2	0.2	0.1	0.1
FEMALE (3)	0.5	0.6	1.5	2.0
Young age (15-24)	-0.1	0.0	0.2	0.3
Prime age (25-54)	0.3	0.4	1.1	1.4
Older age (55-64)	0.2	0.3	0.2	0.3
due to the population composition effect				
TOTAL (4)	-0.2	-0.2	0.3	0.2
Young age (15-24)	0.0	0.0	-0.3	-0.3
Prime age (25-54)	-0.3	-0.3	0.5	0.5
Older age (55-64)	0.2	0.2	0.0	0.0

Source: DG EMPL calculations based on EUROSTAT LFS.

13 Communication from the Commission to the Council, *Joint Employment Report 2004/2005*, SEC(2005) 64.

14 At the time of writing, a complete data breakdown for 2004 was not yet available.

15 In the same period, female employment increased on an annual average by 0.9%.

rate¹⁶ changes by gender and age group is shown in table 13¹⁷.

From an accounting perspective, table 13 highlights in a succinct way a number of significant facts:

- The rise in the female employment rate has been the dominant factor driving up the total employment rate;
- The positive contribution of older workers to the total employment rate has also been highly significant, specially given that the older age working population represents only about 17% of the total working age population;
- The contribution of young and prime-age workers to the total change in the employment rate declined substantially in the 2001-2003 period in comparison to the 1997-2001 period due to the cyclical downturn;
- The total demographic composition effect has been relatively small in absolute value, having turned negative in the 2001-2003 period.

In tables 16, 17 and 18, Member States are classified according to their employment rate in 2004 and the pace of progress since 1997. This gives a rough ranking for employment rate performance across the EU Member States. The bottom left-hand cell is the least favourable classification (i.e. low employment rate and low progress towards a target). In contrast, countries in the bottom right-hand cell are in a better situation because they have made rapid progress in

Table 14 – Total employment rate by gender in the EU-25 (persons aged 15 to 64)				
	1998	2001	2003	2004
Total	61.2	62.8	62.9	63.3
Women	51.8	54.3	55.0	55.7
Men	70.6	71.3	70.8	70.9

Source: Eurostat.

Table 15 – Employment rate by gender for older workers in the EU-25 (persons aged 55 to 64)				
	1998	2001	2003	2004
Total	35.8	37.5	40.2	41.0
Women	25.5	27.8	30.7	31.7
Men	46.6	47.7	50.3	50.7

Source: Eurostat.

Table 16 – Total employment rates (as percentages)			
Pace of progress since 1997	Low	Close to average	High
Rates in 2004			
> 70		DK, NL, SE, UK	
65-70	AT	CY, DE, FI, PT, SI	IE
< 65	CZ, EE, LT, MT, PL, SK	BE, EL, FR, HU, LU, LV	ES, IT

Source: Eurostat and DG EMPL calculations.

Note: Pace of progress is defined as the percentage point change in the employment rate between 1997 and 2004. “Low”: employment rate increase below the EU-25 average minus half of the (unweighted) standard deviation. “Close to average”: employment rate increase within a band of one standard deviation centred on the EU-25 average. “High”: employment rate increase above the EU-25 average plus half of the (unweighted) standard deviation.

recent years, though they still have a relatively low employment rate.

In 2004, only four Member States among the twenty five had already reached the total employment rate tar-

get of 70% (DK, NL, SE and the UK), while AT, CY, FI and PT were close to that value (i.e. within 3 percentage points). A number of Member States with initial low employment rates had also caught up (most notably ES and

16 The ratio of employment to population.

17 Applying a simple shift share analysis, the total employment rate change between periods one and zero can be decomposed approximately as:

$$ER^1 - ER^0 = \sum_i ER_i^1 p_i^1 - \sum_i ER_i^0 p_i^0 \approx \sum_i p_i^0 (ER_i^1 - ER_i^0) + \sum_i ER_i^0 (p_i^1 - p_i^0)$$
Where ER_i^j is the employment rate in period j of the age/gender group i ; p_i^j is the fraction of the age/gender group i in the total working age population in period j . The first term $\sum_i p_i^0 (ER_i^1 - ER_i^0)$ is the (pure) employment rate effect, while the second term $\sum_i ER_i^0 (p_i^1 - p_i^0)$ is the population composition effect.

Table 17 – Employment rates for women (as percentages)

Pace of progress since Rates in 2004 1997	Low	Close to average	High
> 60	AT, DK, EE, SI, UK	FI, PT, SE	NL
55-60	CZ, LT	CY, DE, FR, LV	IE
< 55	MT, PL, SK	BE, EL, HU, LU	ES, IT

Source: Eurostat and DG EMPL calculations.

Note: See table 16 for legend.

Table 18 – Employment rates for older workers aged 55-64 (as percentages)

Pace of progress since Rates in 2004 1997	Low	Close to average	High
> 50	CY, EE, PT	SE	DK, FI, UK
40-50		CZ, ES	IE, LV, NL, LT
< 40	AT, DE, EL, PL	IT, LU, MT, SI, SK	BE, FR, HU

Source: Eurostat and DG EMPL calculations.

Note: See table 16 for legend.

IT). In recent years, due to the cyclical downturn, the employment rate has either stagnated or declined in most Member States. Following a severe economic and labour market crisis, the total employment rate in Poland, for example, was 51.7% in 2004, down from 58.9% in 1997.

Nine Member States (AT, DK, EE, SI, UK, FI, PT, SE, and NL) already exceed the 2010 Lisbon target for the female employment rate and seven others (CY, CZ, DE, FR, IE, LT, and LV) are close to or above the 57% mid-term target for 2005. The EU average is reduced significantly by the low rates in a number of Member States, notably EL, ES, IT and PL, although there are signs of improvement in ES and IT.

As regards older workers, the Stockholm target of 50% for 2010 has been reached in just seven Member States

(CY, EE, PT, SE, DK, FI, and UK) and is within reach in another three (IE, LV and LT). In order to bridge the existing gap of 9 percentage points (between the average employment rate and the target for 2010), reliance on favourable cohort effects will not be sufficient, suggesting that a stronger policy effort is required.

3.2. The structural improvement in labour markets

Economic analyses carried out both by the European Commission¹⁸ in particular and by the academic community in general strongly suggest that structural improvements have occurred in the functioning of labour markets over the economic cycle. These improvements are reflected in a number of features, notably: i) lower structural rates of unemployment on

average, despite the marked deterioration in some new Member States; ii) lower long-term unemployment rates and shorter average spells in unemployment; iii) increased efficiency in matching between the unemployed and unfilled vacancies; iv) wage formation processes that take better account of prevailing conditions in the economy and competitiveness constraints, thus raising the employment content of growth; v) the econometric finding that a positive significant break in the aggregate labour demand function occurred in many EU Member States (but not in all) around 1997; vi) econometric evidence suggesting that the labour force and, to a lesser extent, employment have become more responsive during cyclical upturns; vii) statistical evidence indicating that the development of certain types of labour contracts, namely part-time and temporary work, are positively correlated with employment creation and rises in employment rates, especially for some usually under-represented groups; although as regards temporary work there is some evidence of market segmentation; and viii) expenditure on active labour market policies and on training has been increased and better targeted to the needs of the labour market, with positive results for, among other things, the transition between economic statuses and job matching.

On the negative side, it should be noted that, according to the available indicators to date, no significant progress has been achieved in lowering tax wedges on labour costs or the unemployment and low-wage traps. However, according to a number of empirical studies¹⁹, an increase in the

18 See recent issues of the European Economy Review and of the Employment in Europe publications (http://europa.eu.int/comm/economy_finance/publications/the_eu_economy_review_en.htm and http://europa.eu.int/comm/employment_social/news/index_en.html, respectively).

19 EIE 2004, chapter 2.

Chart 68 – The unemployment rate and the Nairu in the EU-15



Source: DG ECFIN, Ameco.

Note: For each variable, a country is classified in the "highest" group if its average for the 2004-1997 period is above the overall average for the group plus 2/3 of the unweighted standard deviation; a country is classified in the "lowest" group if its average for the 2004-1997 period is below the overall average for the group minus 2/3 of the unweighted standard deviation. Countries not classified in either of these two groups are not explicitly mentioned.

tax wedge has a limited impact on the labour cost faced by firms and thereby on short-term aggregate employment demand²⁰, although the impact on some particular groups such as low-skilled workers and second-wage earners tends to be more significant. Furthermore, a majority of empirical studies (but not all) suggest that the tax wedge leaves equilibrium unemployment unaffected in the long-term²¹. As regards the different components of the tax wedge (employers' and employees' social security contri-

butions and the income tax rate), their short-run effects on real labour costs differ but not substantially. Moreover, the temporary effects of these various components tend to disappear in the long term.

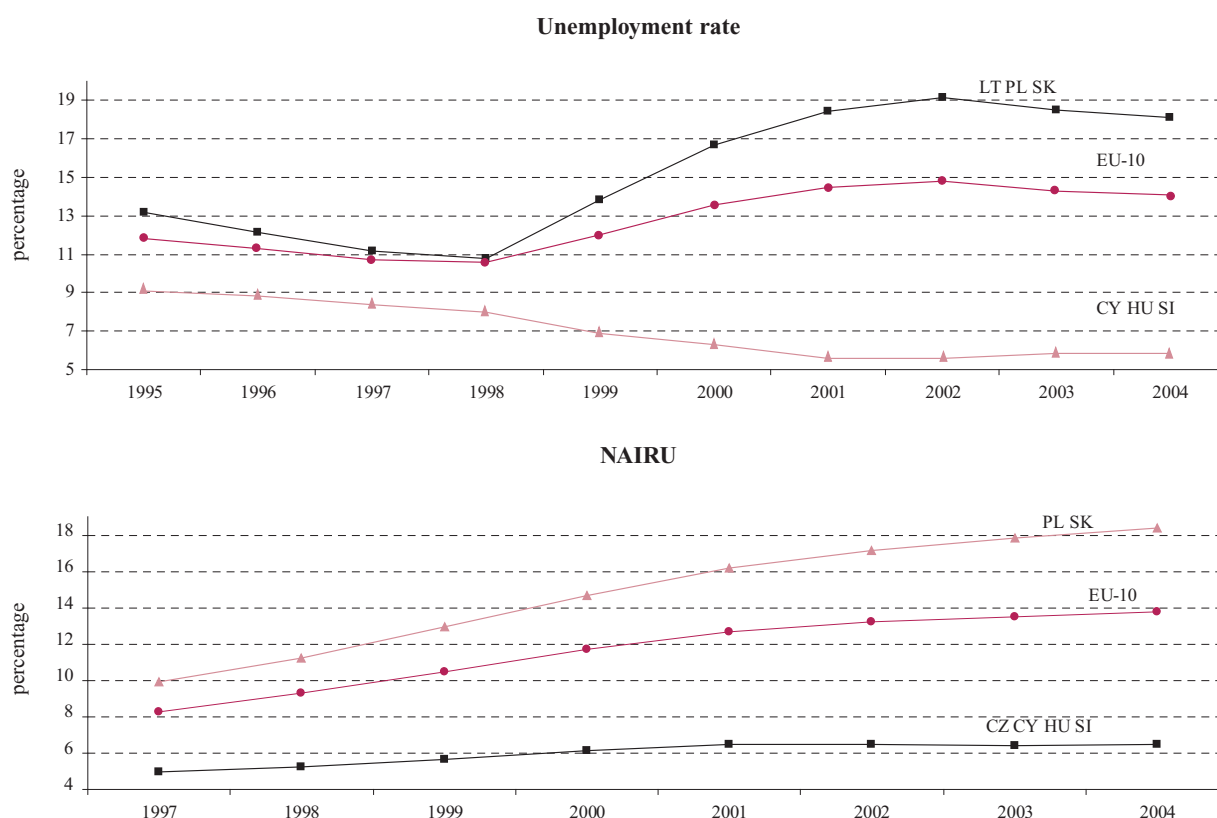
As regards strengthening social cohesion and inclusion, some estimates presented in section 3.4 and Annex II of this chapter suggest that the unemployment rate gaps for some under-represented groups, such as women, the long-term unemployed and unem-

ployed youth, compared with the aggregate unemployment rate, have on average narrowed significantly in the EU-15 since the launch of the EES in 1997.

The following points cover some structural features in the functioning of European labour markets.

20 Recent estimates suggest that a 1 percent increase in the tax wedge leads to a contemporaneous increase in real labour costs of 0.1 percent. Arpaia and Carone (2004), "Do labour taxes (and their composition) affect wages in the short and the long run?", *ECFIN, Economic Papers*, No 216.

21 Layard and Nickell (1999), "Labour Market Institutions and Economic Performance", *Handbook of Labour Economics*, vol. 3, 3029-3084.

Chart 69 – The unemployment rate and the Nairu in the EU-10^a

Source: DG ECFIN, Ameco.

Note: a) CZ, EE, CY, LV, LT, HU, MT, PL, SI, SK.

See note in chart 68.

3.2.1. The structural unemployment rate (Nairu/Nawru)²²

In Europe, labour markets are characterised by a wide diversity of institutions²³ and performance – even more so following the accession of ten new Member States in May 2004. For the

EU-15, although the unemployment rate has increased since 2001 because of the economic slowdown (chart 68), the Commission's estimates of the Nairu²⁴ suggest that a small, although significant, reduction in structural unemployment has occurred since the second half of the 1990s. To a large

extent such an improvement reflects the decline of over 2 percentage points in the average level of structural unemployment amongst the EU-15 Member States with the highest (structural) unemployment rates, notably EL, ES, FR, IT, and FI, together with a 3 percentage points reduc-

22 The non-accelerating inflation/wage rate of unemployment. The Nairu concept captures the theoretical prediction that over the long term real demand and unemployment generally tend towards the level consistent with stable inflation.

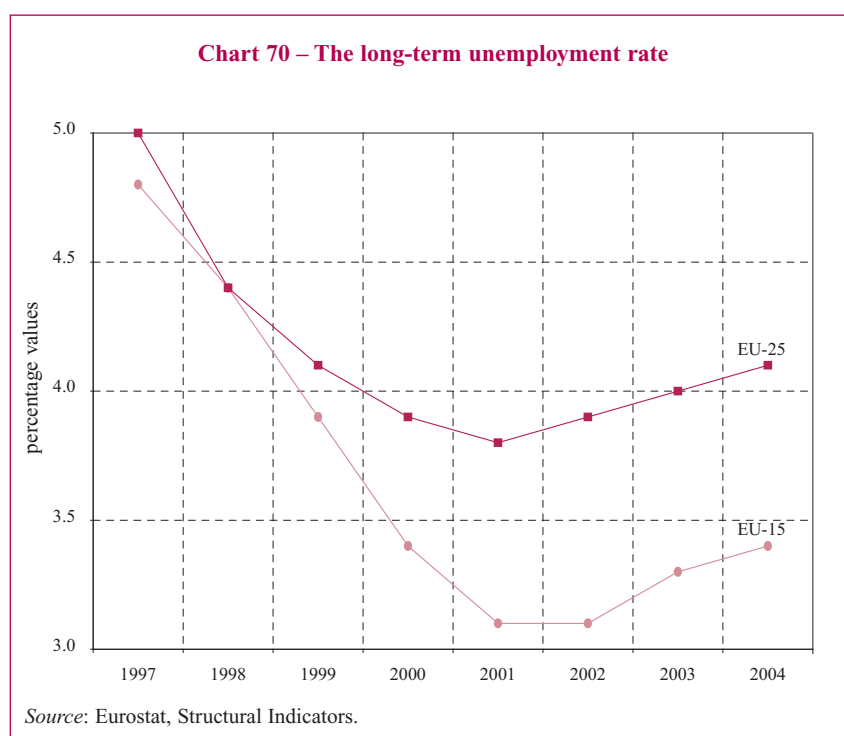
23 Under the heading of labour market institutions, economic theory understands a number of factors influencing (macroeconomic) labour market performance such as: (a) the unemployment benefit system, involving the level of benefits, the duration of entitlement, the coverage of the system, and the strictness with which it is operated; (b) active labour market policies; (c) systems of wage determination, involving the level of coordination, degree of collective bargaining coverage, union density, and the existence of extension laws; (d) employment protection legislation; (e) labour taxes; and (f) barriers to labour mobility. *Employment in Europe 2004*, chapter 2, provided a lengthy discussion of the impact of various labour market institutions on labour market performance. For a recent paper on this topic see: Nickell, Nunziata and Ochel (2005), "Unemployment in the OECD since the 1960s, What do we know?", *The Economic Journal*, 115 (January).

24 The Commission (DG ECFIN) uses a Kalman filter methodology (i.e. an *unobservable components method*) to obtain estimates for the Nairu. The basic idea is to break down the observed unemployment rate into trend and cyclical components. The trend component, after smoothing, is then taken as the Nairu.

tion in the UK. Among the larger EU-15 economies, Germany is the only one where the structural unemployment rate has increased by about 1 percentage point since 1995.

Throughout the period 1997-2004, the structural unemployment rate (the Nairu) fell uninterruptedly in the EU-15, although at a slower pace in 2001-2004 than in 1997-2001 (-0.1 and -0.2 percentage points, per year, respectively). This reflects to a large extent a deceleration in the rate of progress in a number of Member States, namely DK, ES, FR, IE, IT, FI and the UK, together with an increase in structural unemployment in NL and SE.

In the new Member States, labour market performance has on average deteriorated significantly since 1997 compared to older EU Member States. This reflects the cumulative effect of a number of factors: the continuing economic restructuring of some transition economies (especially Poland); an adverse policy-mix characterised by an overly strict monetary policy, partly compensating for the lack of fiscal consolidation²⁵; and the general economic slowdown in the EU-15. As a consequence of all of these factors, the Commission estimates that in the new Member States the structural unemployment rate (the Nairu) rose by about 5.5 percentage points on average between 1997 and 2004, reaching nearly 14% in 2004. This deterioration



is largely the result of a significant increase of approximately 8.5 percentage points in the structural unemployment rate in the three new Member States with the highest structural unemployment rates, namely LT, PL and SK²⁶.

3.2.2. Lower long-term unemployment rates and shorter average spells in unemployment

In recent years, despite the economic slowdown, the long-term unemployment rate²⁷ has decreased significantly (chart 70), especially in the EU-15.

This decline basically reflects a reduction in the average duration of unemployment spells. Using Eurostat macro-data for a breakdown of total unemployment by duration, and a simple methodology presented in Layard et al.²⁸, the average duration of unemployment spells has been calculated for sixteen EU Member States²⁹. The results suggest that the average duration of unemployment fell by about 10% between 1997 and 2003³⁰, and by close to or over 30% in a number of Member States (BE, ES, IE, HU, NL, SE and UK). Moreover, the country data suggest the existence of a significant positive correlation between the unemploy-

25 Darnaut and Kutos (2005), "Poland's policy mix: fiscal or monetary leadership?", *ECFIN Country Focus*, v.2, No 1.

26 In Poland, by far the largest of these three new Member States, the structural unemployment rate is estimated to have increased from 9.6% in 1997 to 18.7% in 2004.

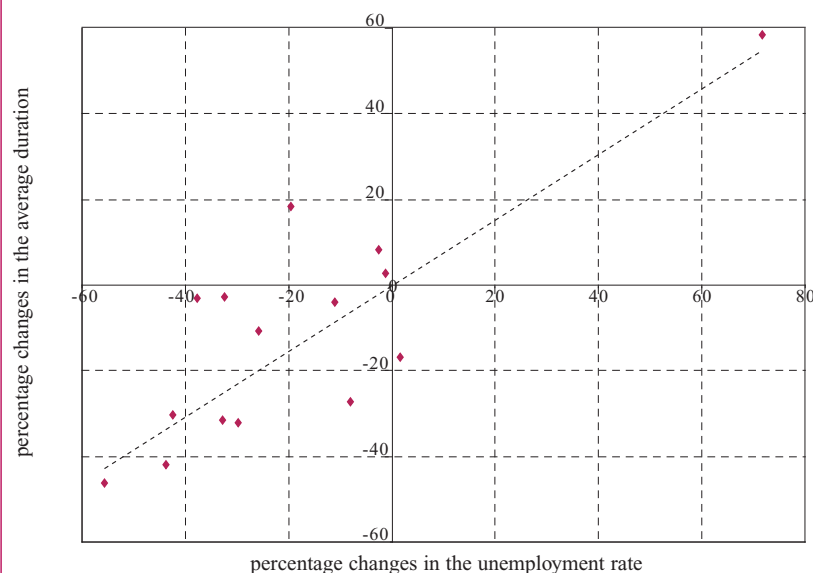
27 The long-term unemployment rate refers to those unemployed for 12 months or more as a percentage of the total active population.

28 R. Layard, S. Nickell and R. Jackman, (1991), "Unemployment, Macroeconomic Performance and the Labour Market".

29 BE, CZ, DK, DE, ES, FR, IT, HU, NL, AT, PT, FI, SE, UK, IE, EL.

30 The following equation is used to estimate the average duration of unemployment: $d = \frac{u}{i(1-u)}$, where d is the average duration of unemployment, u is the unemployment rate, and i is the inflow rate into unemployment. The above equation is only valid over the long term (i.e. in a steady state), because it requires that the number of separations equals the number of hires. This equation is basically an accounting relation (i.e. it is not a behavioural equation). The inflow rate into unemployment (i) is calculated as: $i = \frac{u_1 + 0.5u_2}{N}$, where u_1 is unemployment with a duration inferior to 1 month, u_2 is unemployment with a duration between 1 and 2 months, and N is total employment. Data are used at an annual frequency.

Chart 71 – Correlation between percentage changes in the unemployment rate and in the average duration of unemployment between 1997 and 2003



Source: Eurostat and DG EMPL calculations.

Note: The countries for which data were available are: BE, CZ, DK, DE, EL, ES, FR, IE, IT, HU, NL, AT, PT, FI, SE, and UK.

ment rate and the average duration of unemployment (chart 71)³¹.

An interesting finding is that countries registering the largest reductions in unemployment rates during the period 1997-2003 are usually also those that have had the largest reductions in the average duration of unemployment, or, in equivalent terms, have seen the largest increase in the hiring rate (i.e. the probability of an unemployed person finding a job).

3.2.3. Some signs of improved efficiency in matching (or pairing) between the unemployed and unfilled vacancies

The equilibrium level of unemployment is affected by variables that influence the ease with which the unemployed can be matched with available job vacancies. Shifts in the Beveridge Curve (i.e. the loci of unemployment and vacancy rates) are usually a sign of changes in the equilibrium level of unemployment³². Any

change that improves/worsens the matching process will shift the Beveridge Curve to the left/right and reduce/increase the equilibrium level of unemployment³³.

In what follows, two types of Beveridge Curve are calculated for a number of EU Member States (chart 72)³⁴. The first uses vacancy data from the OECD *Macroeconomic Indicators* database. The second uses a labour shortage index as a proxy for vacancies³⁵. Visual inspection of the charts roughly confirms the main conclusions reached by other studies relying both on graphical and on econometric analysis (e.g. Nickell et al.³⁶).

As pointed out in Nickell et al. (2003), the Beveridge Curve shifted to the right in nearly all countries from the early 1960s to the mid-1980s, indicating an increase in the equilibrium level of unemployment. After the mid-1980s, EU Member States can be roughly divided into two groups: (i) those for which the Beveridge Curve did not shift significantly; and (ii) those for which the Beveridge Curve has moved leftwards. The following countries belong to the former group: Belgium, Germany, France, Austria, Portugal, Finland and Sweden, and the following countries to the latter group: Denmark, Spain, Ireland, the Netherlands, Hungary and the United Kingdom.

31 According to this methodology, the average duration of unemployment is the inverse of the outflow rate (i.e. the ratio between hires and total unemployment).

32 In the steady state, the Beveridge curve is based on the existence of a matching function: $M = \varepsilon m(cU, V)$, where M is the number of matches/hires from unemployment, U is unemployment, V is vacancies, ε is the matching efficiency, and c is the search effectiveness of the unemployed. It is normally assumed that the matching function has constant returns to scale. Where s is the separation rate out of employment, sN is thus the flow into unemployment. Then in the steady state, one has $sN=M$, and hence $s = \varepsilon m(c \frac{U}{N}, \frac{V}{N})$, which is the (implicit) Beveridge Curve.

33 Economic theory also suggests that for a given downward sloping steady-state Beveridge Curve, actual unemployment/vacancy points cycle anti-clockwise around the steady state relationship. If the steady-state Beveridge Curve shifts, the anticlockwise loops described by unemployment/vacancy points during the economic cycle should also move with the underlying curve.

34 Chart 72 is incomplete due to lack of data. Note that on the left side the Beveridge Curve is plotted using the vacancy rate and on the right side using the labour shortage index. Job vacancy data from Eurostat are not used, because they are available only from 2001.

35 Source: DG ECFIN, namely the question in the European Industrial Survey about factors (labour) limiting production.

36 S. Nickell et al. (2003) "The Beveridge Curve, Unemployment, and Wages in the OECD from the 1960s to the 1990s".

Chart 72 – Beveridge Curve

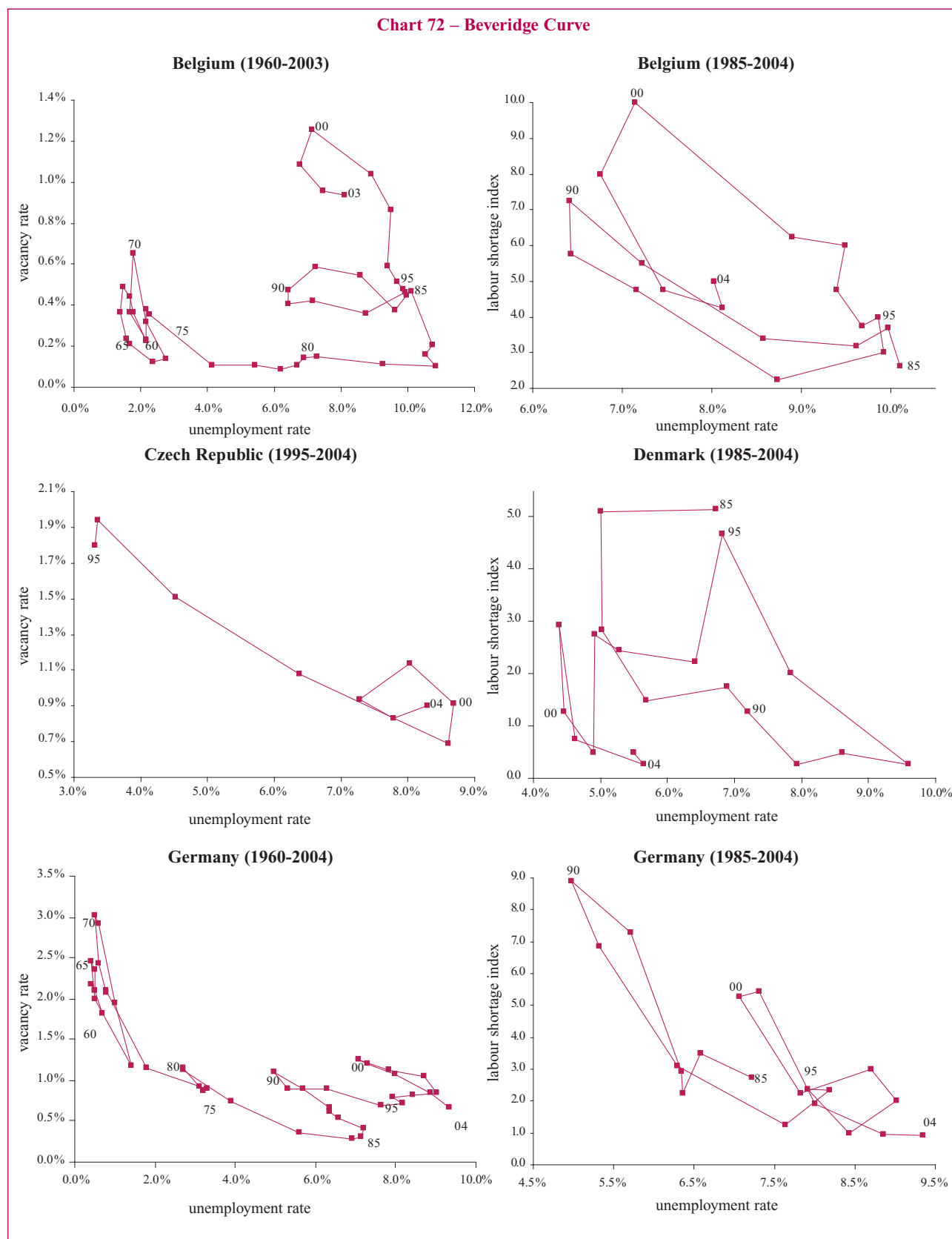


Chart 72 (cont.) – Beveridge Curve

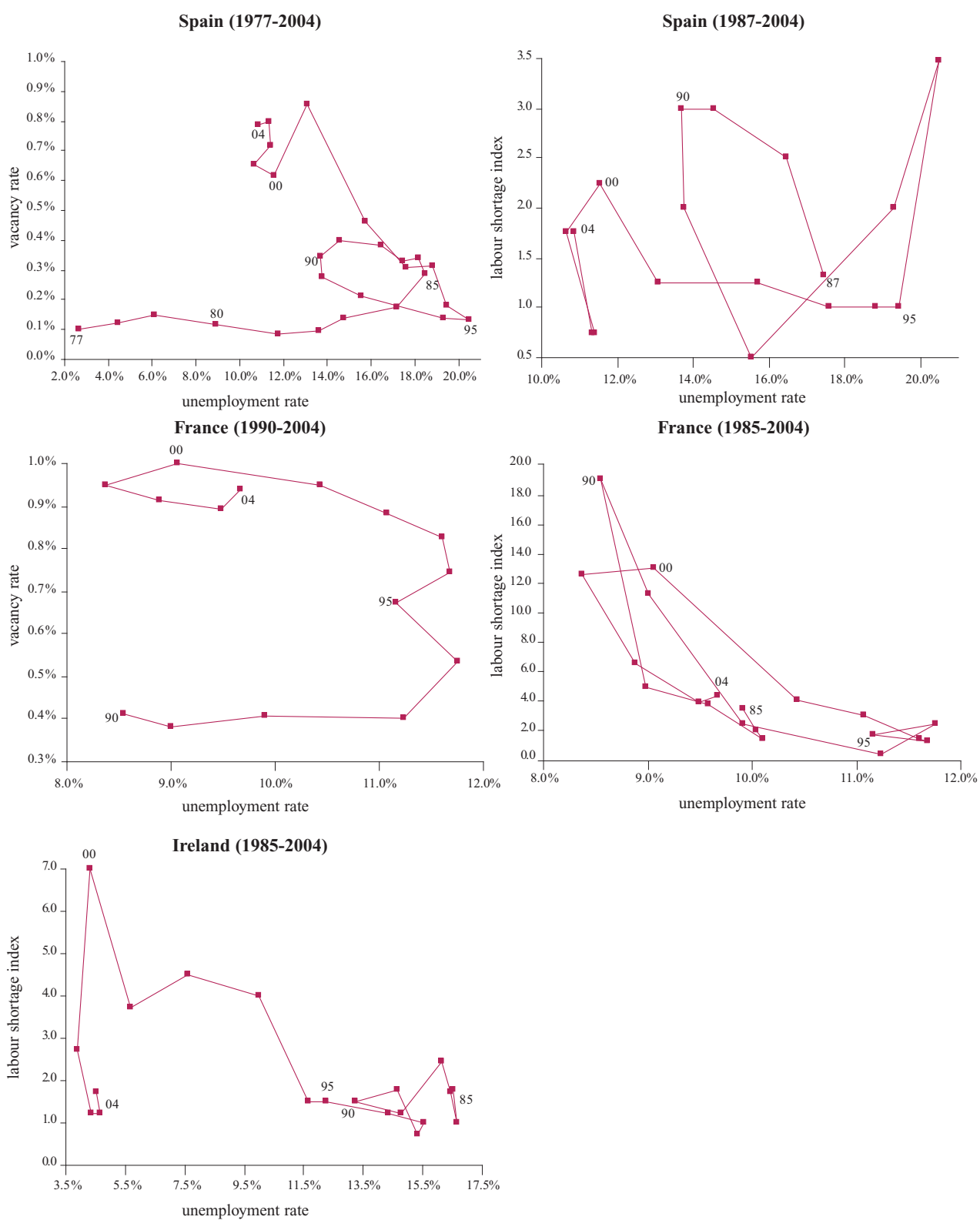


Chart 72 (cont.) – Beveridge Curve

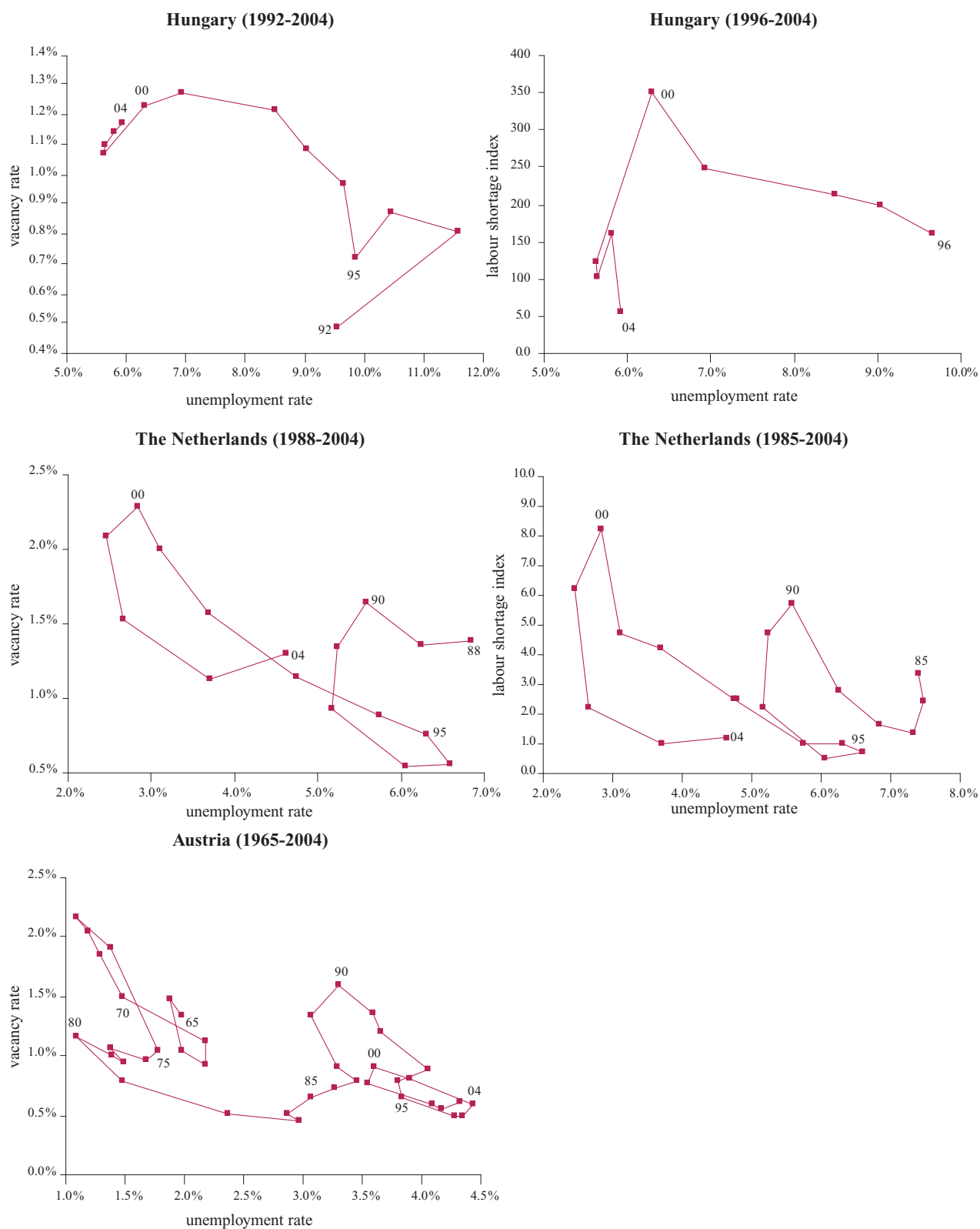
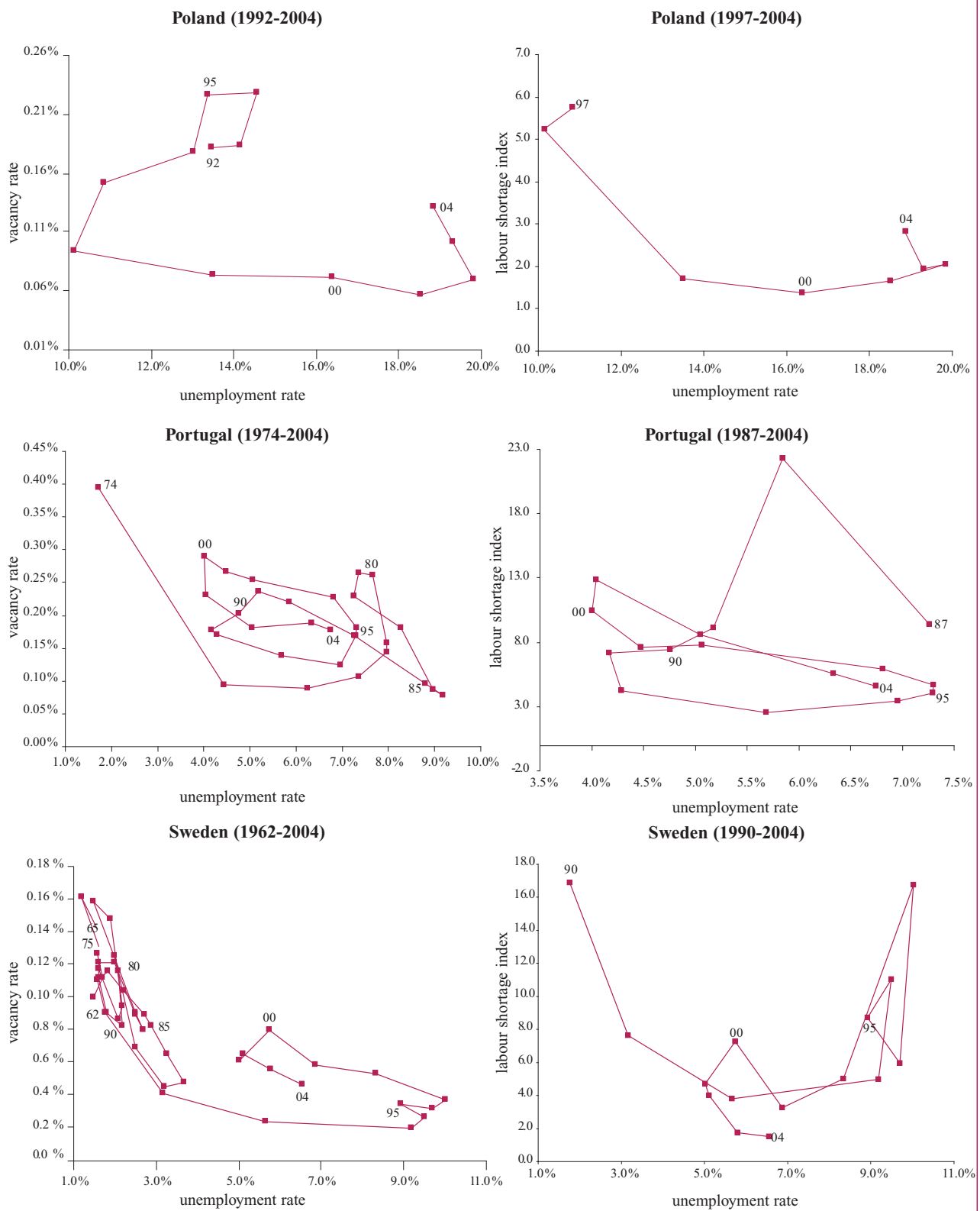
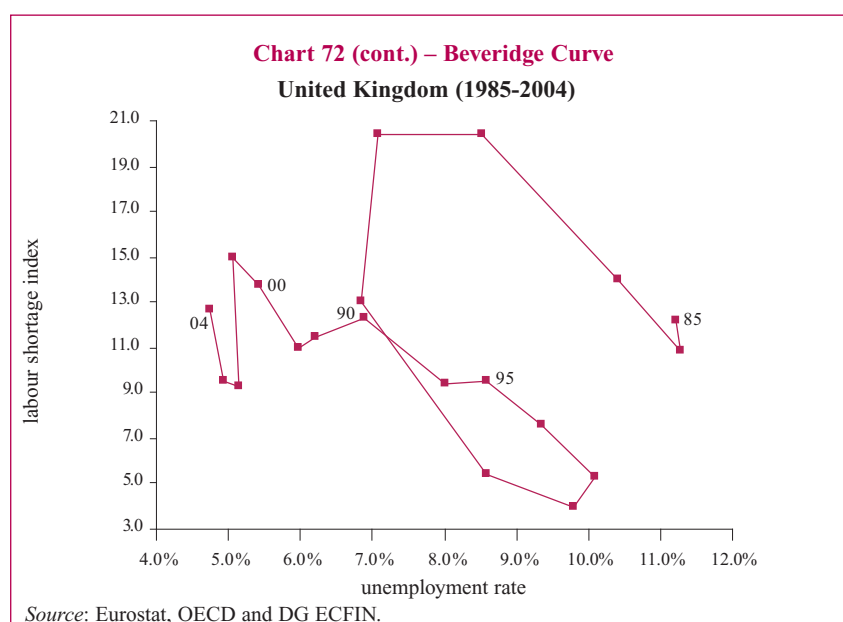


Chart 72 (cont.) – Beveridge Curve





Nickell et al. (2003) estimate an aggregate Beveridge Curve for 15 OECD countries, using pooled data and including some non-European countries, which permits an econometric evaluation of the impact of a number of variables on the efficiency of job matching. Controlling for the inflow rate into unemployment (i.e. the separation rate out of employment), the authors find that the following variables/institutions had the effect of shifting the Beveridge Curve to the right in a statistically significant way: (i) the level of owner-occupied residential housing; and (ii) the duration of unemployment benefits. In addition, the relative strictness of employment protection legislation is found to shift the Beveridge Curve to the left³⁷.

Finding (i) is considered intuitive, while (ii) is less so. A higher percentage of owner-occupied housing (as the alternative to renting) could contribute to lower geographical mobility, shifting the Beveridge Curve rightwards. In addition, other things being equal, where unemployment benefits are paid for a long period, this could be expected to contribute towards a lower search effort by the unemployed, thereby leading to a lower job matching rate (i.e. a rightwards shift of the Beveridge Curve). However, it can also be argued that a relatively long duration of unemployment benefit – at least until a certain threshold duration is reached – could also improve the quality of matches, in particular by not “forcing” the unemployed to accept undesirable jobs or outright bad matches.

The finding that stricter employment protection legislation actually raises the efficiency of job matching (i.e. a leftward shift of the Beveridge Curve) might result from firms being more cautious about the quality of proposed job matches³⁸ since the cost of a poor match would be higher in such situations. Conversely, Blanchard and Wolfers³⁹ (2000) argue that higher employment protection magnifies the effect of adverse macroeconomic shocks on unemployment.

3.2.4. A more job-friendly macroeconomic environment

A number of indicators suggest that the overall macroeconomic environment in the EU has become more conducive to job creation in recent years. On the one hand, there is evidence of increased moderation in wage-setting behaviour, and on the other, figures show that the profitability of capital has improved significantly since the mid-1990s.

3.2.4.1. Wage moderation

In line with some publications of the European Commission⁴⁰, a simple indicator can be calculated to identify potential shifts in the aggregate wage-setting curve in the EU-15. This indicator follows the work of Blanchard⁴¹ (1997, 1998) and is called a “real wage gap/pressure indi-

37 Recall that a shift to the left/right tends respectively to lower/increase the equilibrium level of unemployment.

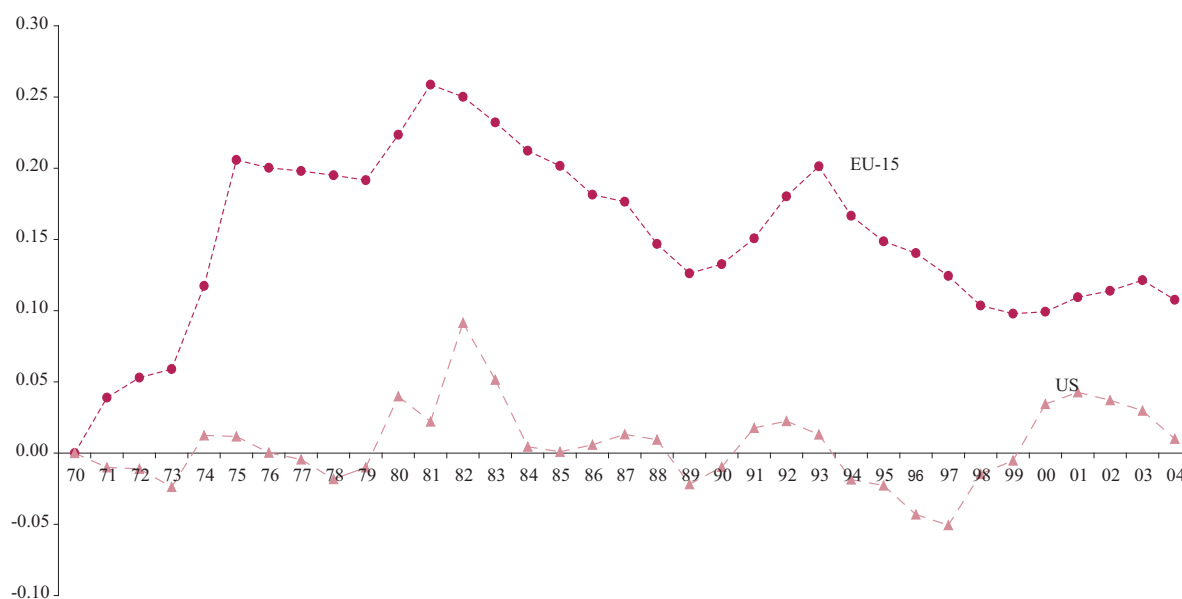
38 Economic theory considers that the net effect of employment protection legislation on job matching/level of labour demand is ambiguous as barriers to the layoff of workers are expected to hinder both job creation and job destruction (Bentolila and Bertola, (1990) “Firing costs and labour demand: how bad eurosclerosis?” *Review of Economic Studies*, vol. 57, pp. 381-420). In addition, employment protection legislation may strengthen the bargaining power of “insiders” (i.e. those who are employed), allowing them to extract higher wages to the detriment of “outsiders” (i.e. those who are without jobs).

39 Blanchard and Wolfers (2000) “The Role of Shocks and Institutions in the Rise of European Unemployment: the Aggregate Evidence”, *Economic Journal* vol. 78(2), pp. 182-187.

40 “The EU economy: 2003 review”, chapter 4, and “EMU after 5 years”, chapter 3.

41 Blanchard (1997), “The medium run”, *Brookings Papers on Economic Activity*, 2: 1997, pp. 89-158. Blanchard (1998), “Revisiting European unemployment: Unemployment, capital accumulation and factor prices”, *NBER Working Paper Series No 6566*.

Chart 73 – Real wage gap/pressure indicator (1970=0)



Source: DG ECFIN, Ameco and own calculations.

cator⁴². An increase in its value basically means that real wages are growing faster than (total factor) productivity⁴³. A significant (positive) cumulative deviation in relation to a base year⁴⁴ can then be interpreted as excessive wage pressure in the labour market.

Chart 73 plots the wage gap/pressure indicator calculated for the EU-15 and the US. The values for the EU-15 show a large increase during the

1970s, with a peak of more than 25 percent in 1981-1982. Thereafter, wage pressure gradually decreased with the exception of the period 1991-1994, which featured both high nominal and real wage growth (charts 74 and 75). The decline in the second half of the 1990s basically reflects a period of wage moderation. At present, however, the wage pressure indicator for the EU-15 is still above its level at the beginning of the 1970s⁴⁵.

Given the low growth of (total factor) productivity in the 1990s⁴⁶, the partial correction of the wage pressure gap since 1993 largely reflects a period of wage moderation.

Wage moderation was common across EU Member States during the second half of the 1990s. For the purpose of characterising wage inflation during this period, the EU Member States are divided into three groups (charts 74 and 75). The first group

42 Formally, this wage indicator is derived from a simple wage setting equation, linking the real product wage in efficiency units (w/e) to the unemployment rate (u) and a shift parameter (Z) that stands for other/omitted labour market conditions/variables affecting wage setting. This relationship can be written as: $\log(\frac{w}{e}) = Z - b \cdot u$, where b is the elasticity of real efficiency wages with respect to the unemployment rate. A real wage gap indicator can then be built from $Z = \log(\frac{w}{e}) + b \cdot u$, setting b equal to 1 and after normalisation of the series to zero in 1970.

43 After correcting for slack in the labour market using the unemployment rate.

44 The base year usually chosen is 1970, because it precedes the first oil shock and the ensuing deterioration in the performance of labour markets.

45 Bruno and Sachs (1985), "The Economics of Worldwide Stagflation", Basil Blackwell, Oxford. These authors were the first to argue that the sustained increase in the unemployment rate from the mid-1970s to the mid-1980s was mostly due to the failure of social partners to adjust wages in time to the slowdown in productivity growth. Since the early 1980s, however, wages have been increasing below the underlying total factor productivity growth, leading to a fall in the income share of wages. However, despite this extended period of wage moderation, the labour market (both employment and unemployment rates) only started to improve after the second half of the 1990s. Blanchard (1998) puts forward the idea that this unusually long lag in the labour market recovery might be due essentially to two mechanisms that have depressed labour demand. First, the rise in the relative price of labour, leading to a reduction in labour demand and, creating a labour surplus at the level of the firm (i.e. labour hoarding). Given adjustment costs and legal/administrative constraints on dismissals, it took a considerable amount of time for firms to bring down employment levels to their desired values. The second explanation, complementary to the first, states that factor price movements induced firms to progressively introduce technologies that substituted capital for labour.

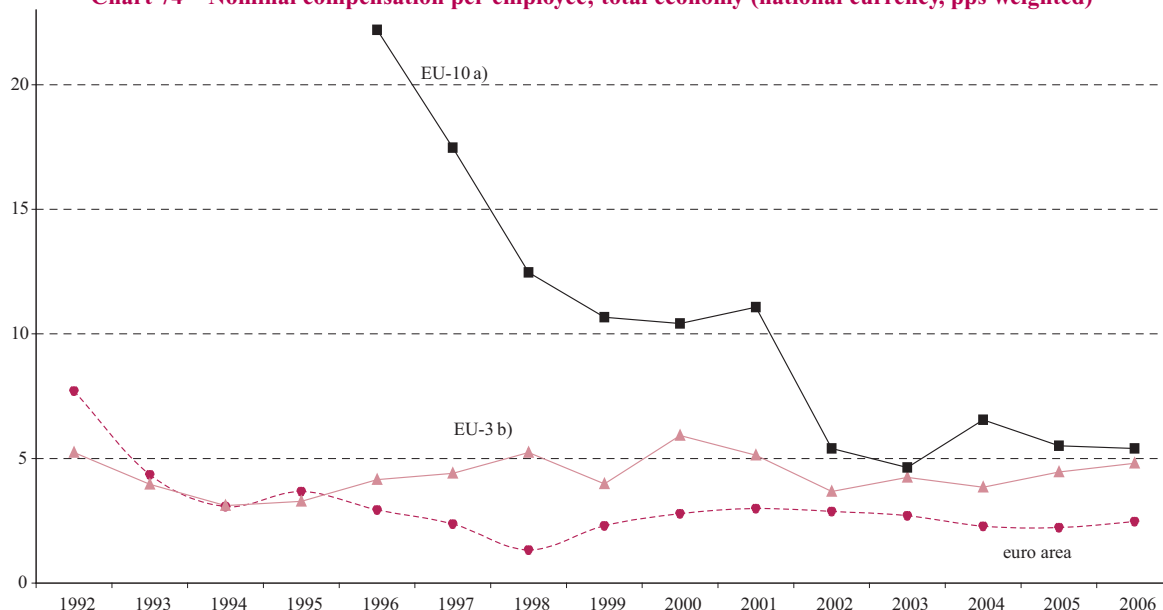
46 See point 3.3 on "quality and productivity at work".

includes the 12 euro area Member States, the second comprises Denmark, Sweden and the UK (EU-3), and the third consists of the 10 new Member States (EU-10).

In the euro area, in the run-up to European Monetary Union (EMU) and in line with a strong price disinflation trend, wage growth decelerated signifi-

cantly from 7.7% in 1992 to close to 2.5% per year from the second half of the 1990s. In addition, the dispersion of wage growth in the euro area, as meas-

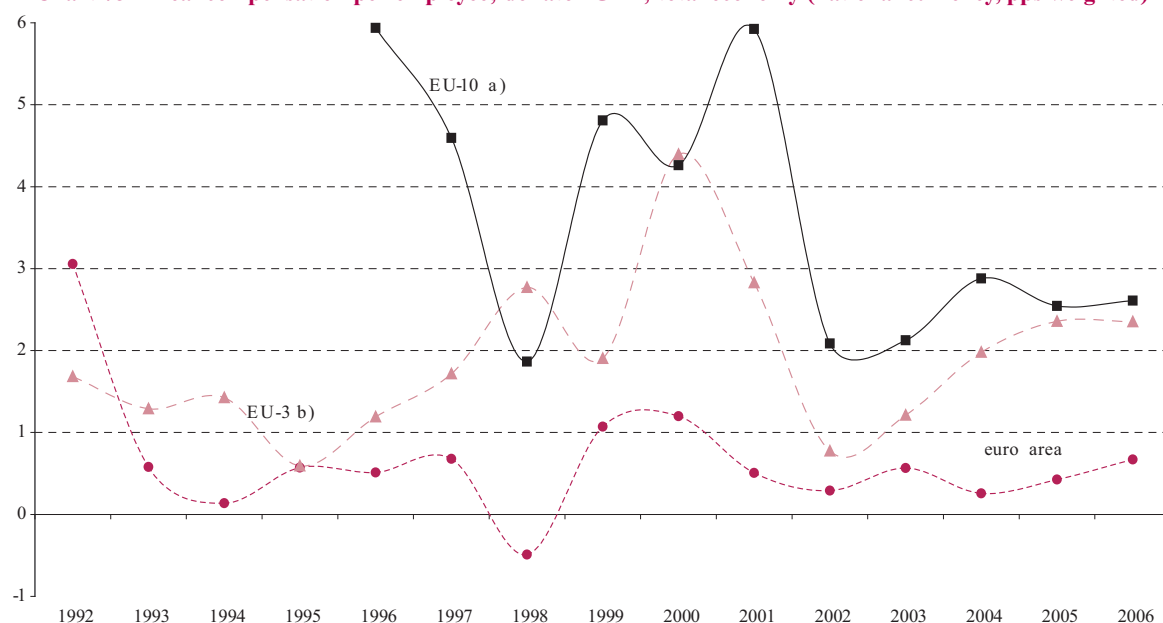
Chart 74 – Nominal compensation per employee; total economy (national currency, pps weighted)



Source: DG ECFIN, Ameco.

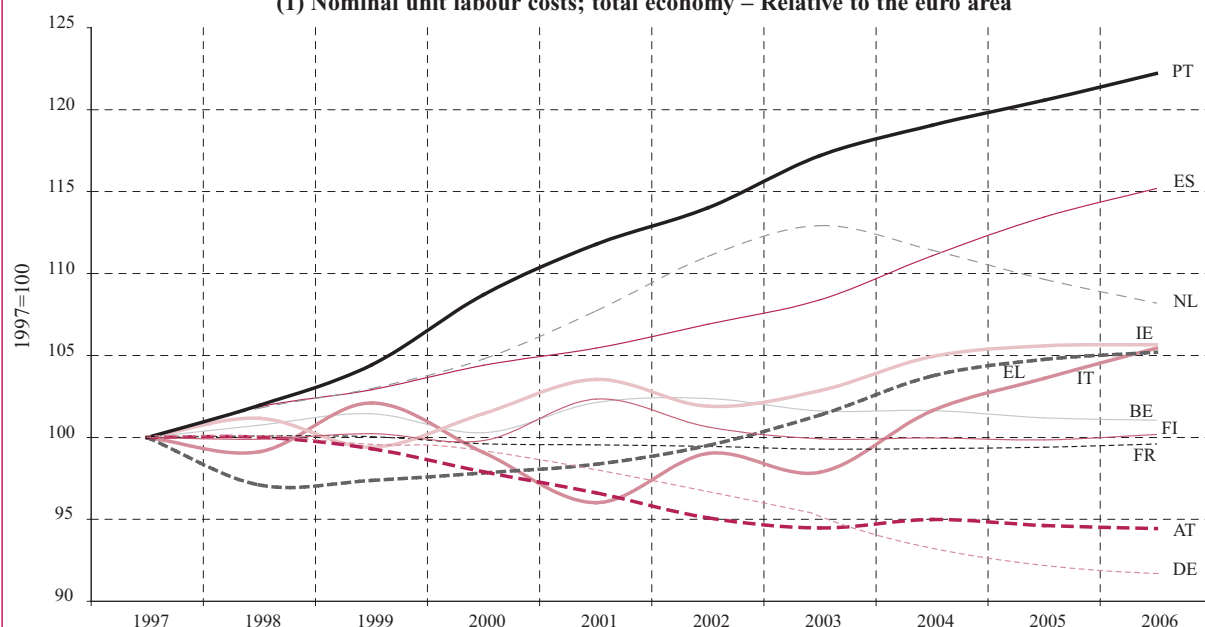
Note: a) CZ, EE, CY, LV, LT, HU, MT, PL, SI, SK. b) DK, SE, UK.

Chart 75 – Real compensation per employee; deflator GDP; total economy (national currency, pps weighted)



Source: DG ECFIN, Ameco.

Note: a) CZ, EE, CY, LV, LT, HU, MT, PL, SI, SK. b) DK, SE, UK.

Chart 76 – Intra euro area real effective exchange rates (nominal unit labour costs relative to competitors, 1987=100)**(1) Nominal unit labour costs; total economy – Relative to the euro area**

Source: DG ECFIN, Ameco.

Note: 1) Ratio of compensation per employee to real GDP per person employed.

ured by the coefficient of variation⁴⁷, declined significantly after 1997. In the “old” EU Member Countries not participating in monetary union (EU-3), wage growth also declined markedly during the 1990s from about 9.5% in 1990 to below 4.5% per year from 1995. In the 10 new Member States, and in line with the ongoing progress towards nominal convergence, average wage inflation declined from above 20% in the mid-1990s to about 5.5% in the 2003-2004 period.

Therefore, wage growth decelerated across the EU during the second half of the 1990s both on account of the disciplinary mechanism that monetary union provided and because of the sustained progress of the 10 new Member States towards nominal convergence.

In a perfect competition setting, for the cases of both a profit-maximising and a cost-minimising firm, there should be a negative relationship between labour demand/employment and real labour costs (i.e. values deflated using GDP prices), all the rest being constant. A number of empirical studies⁴⁸ suggest that part of the employment growth registered in the second half of the 1990s, particularly in the euro area, can be attributed to very favourable developments in real labour costs (chart 75).

However, the fairly benign picture in terms of wage/price growth in the euro area as a whole conceals relatively divergent trends at Member State level. In Germany and Austria, price-competitiveness with the rest of the euro area has improved. While it has

remained relatively stable in Belgium, France and Finland, it has however deteriorated in a number of euro area Member States, from moderately (Greece, Ireland, Italy and the Netherlands) to very significantly (Spain and Portugal) (chart 76)⁴⁹.

Since monetary union – a period which roughly coincides with the launch of the European Employment Strategy – wage developments and wage setting mechanisms have gained more importance in euro area Member States because domestic monetary and exchange rate policies are no longer available as adjustment instruments. Moreover, the continuing process of market integration is likely to raise the output and employment costs of price-competitiveness misalignments (Bertola and Boeri⁵⁰, 2002). Therefore,

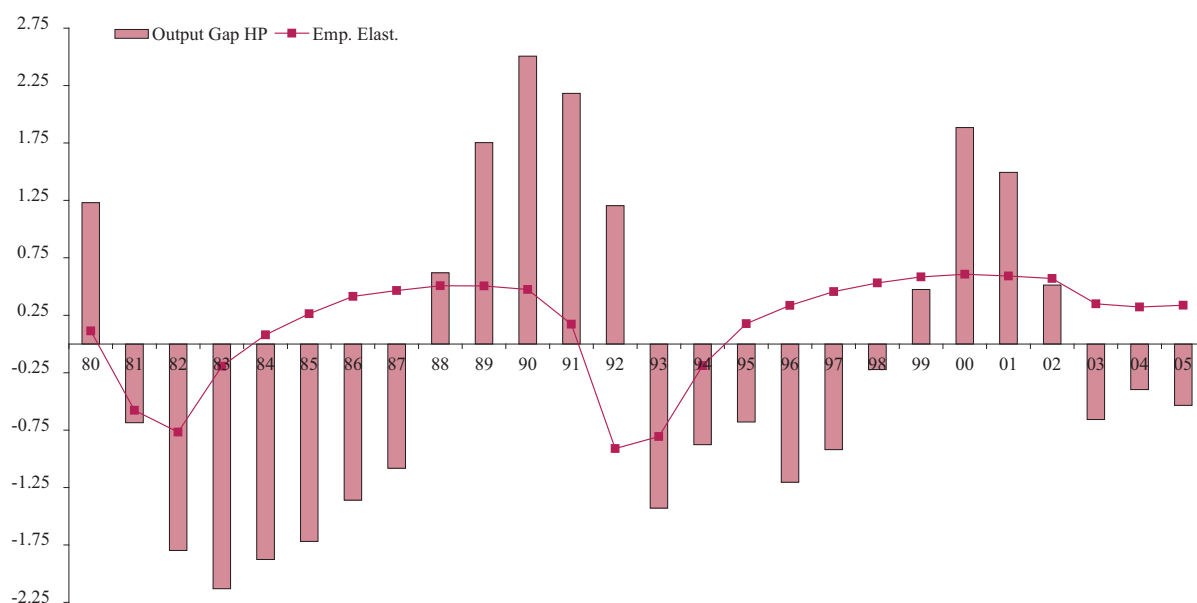
47 The ratio between the standard deviation and the average.

48 Mourre, G. (2004), “Did the Pattern of Aggregate Employment Growth Change in the Euro Area in the Late 1990s?”, *ECB Working Paper No 358*.

49 “EMU after 5 years” (2004), European Commission, DG ECFIN.

50 Bertola, G. and T. Boeri (2002), “EMU labour markets two years on: Microeconomic tensions and institutional evolution”, in Buti M. and A. Sapir (eds.), *EMU and economic policy in Europe: The challenge of early years*, pp. 249-280.

Chart 77 – Employment to GDP elasticity and the output gap in the EU-15



Source: DG ECFIN, Ameco and own calculations.

divergent trends at Member State level in wage developments adjusted for productivity are a cause for concern if not warranted by the fundamentals (e.g. exogenous shifts in demand, Balassa-Samuelson⁵¹ effects, etc.). Persistent price-competitiveness misalignments might lead to situations of economic overheating or overcooling, requiring protracted periods of adjustment or even raising serious tensions inside the monetary union.

3.2.4.2. Turnaround in profitability

In this section, the argument that European labour markets are showing increasing resilience to economic fluctuations is discussed, while the next section presents strong evidence for the occurrence of a positive break in labour demand in many (but not all) EU Member States from 1997 onwards. Later on, econometric estimates are presented suggesting that the labour force and, to a lesser extent, employment have become more responsive during cyclical upturns, raising labour force participation and the employment content of growth.

The data reveal that in the economic slowdown of 2001-2003, the elasticity of employment to changes in GDP⁵² was positive, compared to the negative values observed in previous recessions (chart 77). This apparent change in the elasticity of employment to GDP may, in part, be due to the nature of this last economic slowdown, which was rather prolonged but not very sharp⁵³. However, it may also result from structural changes in the labour market. The next section presents some compelling evidence suggesting that a positive structural break did occur in labour demand in many EU Member States (but not in all) around 1997.

51 In a small open economy (i.e. unable to affect either interest rates or the prices of tradeable goods on world markets), the only (real) element of the exchange rate that can be made endogenous is the relative price between tradeable and non-tradeable goods. In a two-goods model (i.e. with a tradeable and a non-tradeable sector) of a small economy, the Balassa-Samuelson hypothesis states (among other propositions) that a rise in total factor productivity in the tradeable sector raises wages not only in this sector but, owing to intersectoral labour mobility, also in the non-tradeables sector, thus raising non-tradeable prices, which yields a real appreciation.

A large body of literature in the second half of the 1990s and earlier 2000s suggests that the generalised real appreciation across central and east European transition economies is at least partly due to the impact of productivity shocks via a Balassa-Samuelson type effect; Fischer (2002), "Real currency appreciation in accession countries: Balassa-Samuelson and investment demand", DP 19/02, Deutsche Bundesbank.

52 The employment to GDP elasticity in chart 77 is a 3-year moving average centred on the current year. The potential output gap is calculated using the Hodrick-Prescott (HP) filter. The HP filter decomposes a time series into two components: a long term trend and a stationary cycle; it is a linear filter that requires previous specification of a parameter known as lambda (λ). This parameter tunes the smoothness of the trend, and depends on the periodicity of the data. For annual data, a value of 100 was used.

53 DG ECFIN (2005), *Labour Market and Wage Developments in 2004, with a Special Focus on the Risk of Jobless Growth*, European Economy Special Report N° 3/2005.

Since the mid-1990s, profitability⁵⁴ has turned around significantly in the EU area. While there are multiple (and inter-related) causes contributing to this favourable outcome, which broadly coincided with the run-up to EMU, wage moderation and the fall in risk premiums on interest rates across Europe are likely to have played a major role.

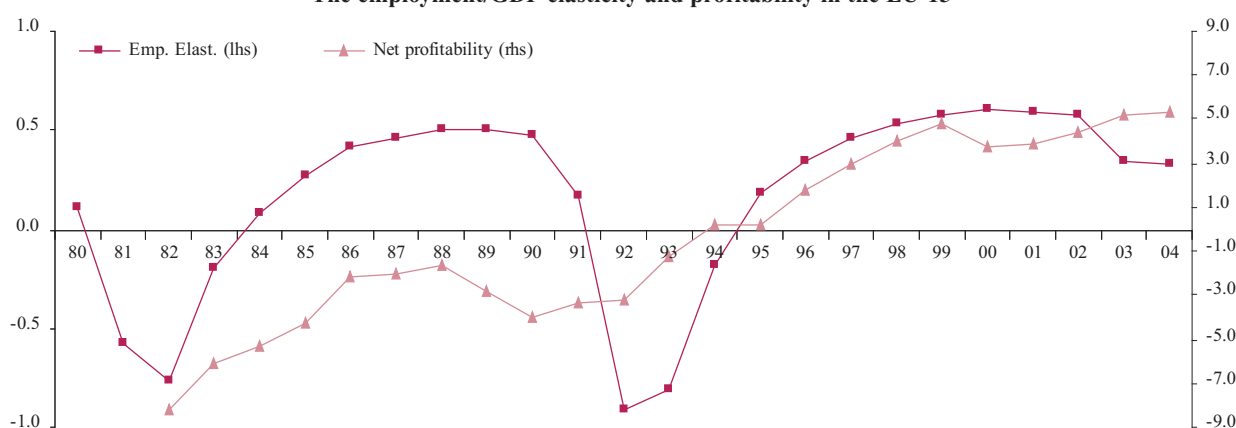
The comparison between the EU-15 and the US (chart 78) suggests that a positive (and adequate) level of profitability is likely to reduce the risk of large-scale labour losses during economic recessions or slowdowns.

The sustained increase in profitability during the 1990s, the general favouring of stability-oriented macroeco-

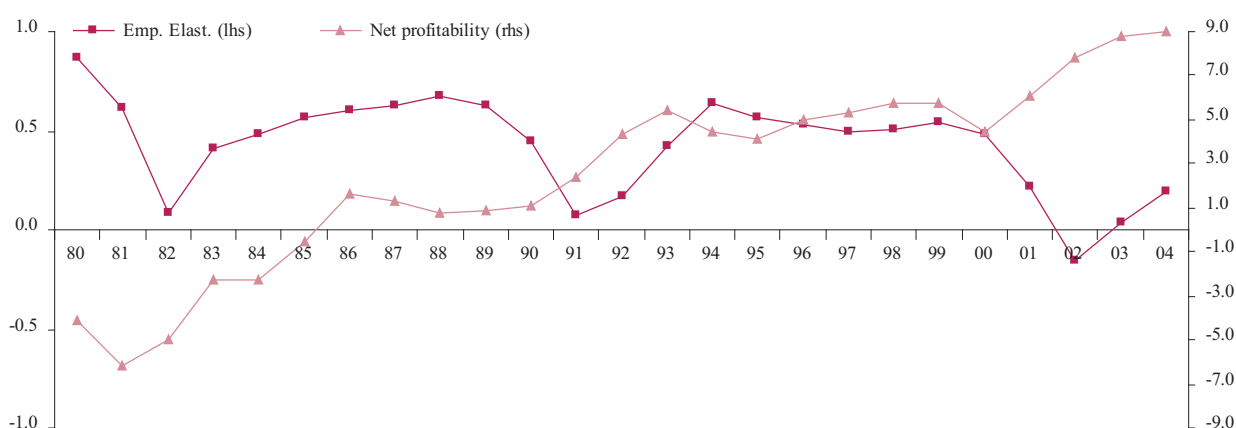
nomie policies and the introduction of structural reforms in a number of areas such as competition policy and labour markets have all contributed to an improvement in the functioning of labour markets, which is beginning to bring benefits, particularly since 1997.

Chart 78 – Employment/GDP elasticity and profitability

The employment/GDP elasticity and profitability in the EU-15



The employment/GDP elasticity and profitability in the US



Source: DG ECFIN, Ameco and own calculations.

54 The profitability of capital/investment is measured using DG ECFIN's Ameco database "net returns on the net capital stock" variable minus the unweighted average of short- and long-term interest rates. The "net returns on the net capital stock" variable is basically the ratio between a net operating surplus variable (approximately output minus the wage bill) and the net capital stock.

3.2.5. Evidence of a positive break in labour demand in many EU Member States (but not all) since 1997

Econometric estimates of labour demand based on aggregate time-series data (focusing on the euro area) show that traditional determinants, such as trend productivity, GDP growth and real labour costs, fail to explain a significant part of employment growth after 1997 (Mourre, 2004). The assumption of a break from 1997 onwards improves significantly the quality of (dynamic) forecasting and increases the stability of the estimated equations⁵⁵.

The finding of a significant break around 1997-1998 coincides with a cyclical upturn, the beginning of the EES and the “effective” start of EMU⁵⁶. The timing of the structural break seems to confirm the IMF’s⁵⁷ (1999) view that the positive effects of structural reforms are reinforced during economic upturns, which sometimes come considerably after their introduction. This suggests that the full impact of labour market reforms implemented under the EES, particularly in Germany, will only fully materialise once the current recovery out of the long economic slowdown of 2001-2003 is completed.

In addition, using macro-panel data, estimates suggest that a group of EU Member States⁵⁸ (representing close to one half of total EU-15 employment) have experienced a positive break in their aggregate labour demand since 1997. However, five

EU Member States⁵⁹, including Germany, did not record any significant positive change in their aggregate labour demand equation in the late 1990s.

Therefore, econometric evidence, based mainly on time-series analysis but also on panel data, suggests that recent employment performance is related to structural improvements in the behaviour of aggregate employment in some EU Member States. The following factors are prime candidates to explain this positive break in aggregate labour demand: i) changes in the sectoral composition of employment; ii) developments in labour market institutions; and iii) the impact of active labour market policies.

Garibaldi and Mauro⁶⁰ (2002) find that in the first half of the 1990s, the strong growth of part-time employment, particularly in the service sector, was a major driving force behind the increase in the total number of jobs, despite some displacement of full-time jobs. However, the dynamism of part-time employment growth was basically present in the first half of the 1990s, so cannot explain the break in employment demand in the late 1990s. In contrast, the sectoral composition of employment growth in the late 1990s, when compared to the early 1990s/late 1980s, may have played a significant role in developments in aggregate employment growth (Marimon and Zilibotti⁶¹, 1998). European economies benefited from favourable

composition effects resulting from the high employment (and GDP) growth rates in most service sectors, which accounted for a higher proportion of total employment in the late 1990s than a decade earlier. Conversely, sectors with low or negative employment growth (such as agriculture and industry excluding construction) accounted for a lower proportion of total employment in the late 1990s than a decade earlier.

In line with a large body of literature on the impact of labour market institutions on labour market performance, Mourre (2004) presented some preliminary evidence linking (average macroeconomic) labour tax wedges⁶² to the presence of a positive break in aggregate employment demand. Specifically, Member States with higher than expected employment in the late 1990s experienced a decline (IE, NL, and ES) or at least no upward movement in their labour tax wedge (BE and FR), while most of those that did not experience any significant positive break in their employment demand in the late 1990s saw an increase in their labour tax wedge. As regards the potential role of active labour market policies in fostering employment growth, Mourre (2004) finds that most active policies seem to be statistically insignificant in explaining employment developments.

A note of caution is warranted as regards the effectiveness of labour market institutions in general, and active labour market policies in particular. Findings based on macroeconomic data usually suffer from a num-

55 The inclusion of an equation break turns out to be significant whatever the measure of employment used: number of people employed, full-time equivalents or hours worked.

56 For prospective EMU Members, interest rates had nearly converged by 1997 and exchange rate stability had been virtually achieved.

57 IMF (1999), “Chronic unemployment in the Euro Area: Causes and Cures”, *World Economic Outlook*, May.

58 BE, ES, FR, IE, IT LU, NL.

59 AT, DE, EL, FI, PT.

60 Garibaldi and Mauro (2002), “Employment growth. Accounting the facts”, *Economic Policy*, April.

61 Marimon and Zilibotti (1998), “Actual versus virtual employment in Europe: Is Spain different?”, *European Economic Review*, 42(1).

62 The difference between the after-tax disposable labour income received by wage earners and total labour costs faced by employers.

ber of drawbacks because the results and policy conclusions do not tend to be robust across the estimated models⁶³.

3.2.6. The effect of the cycle on labour market variables

Labour market variables display a strong cyclical pattern. A common way of evaluating this is by estimating *Okun*-type equations (Annex I)⁶⁴. Using data for the EU-15⁶⁵, covering the period 1972-2003, a set of *Okun*-type equations is estimated using pooled data techniques. The evidence reported in table 19 (and further explored in Annex I) suggests that the cyclical response of labour market variables such as employment and unemployment varies according to the cyclical position of the economy. In addition, since the implementation of the EES in 1998 and over the years with positive output gaps, the results tentatively suggest a rise in the responsiveness of labour market participation and, to a lesser extent, employment⁶⁶.

From the estimation results in table 19, a number of important points emerge. Firstly, and as expected, labour market variables show a clear cyclical pattern that is correctly signed. Secondly, there is evidence of asymmetry in the response of some labour market variables over the business cycle. In particular, employment and labour force

Table 19 – Medium-run impact of a percentage point increase in the output gap on the deviation of labour market variables from their trends (as percentage) ⁶⁷

	Unemployment	Employment	Labour Force
1972-1997			
GDP above potential	-0.25	0.20	-0.08
GDP below potential	-0.25	0.48	0.21
1998-2003			
GDP above potential	-0.25	0.33	0.28
GDP below potential	-0.25	0.48	0.21

Source: DG ECFIN, Ameco; OECD, MEI; and IMF, IFS. Own calculations.

participation tend to undergo a stronger adjustment during downturns than in upturns. Thirdly, the econometric evidence suggests that labour force participation and, to a lesser extent, employment have become more responsive to the economic cycle since 1998, which reflects the favourable developments in the labour market registered during the cyclical upturn of 1998-2001.

Since 1998, and during the cyclical upturn, labour force participation increased above what would have been expected given past statistical trends, suggesting that a structural improvement in the labour market has occurred. Although these results are highly suggestive and encouraging they cannot be taken as formal proof that implementation of the EES caused by itself the observed improvement in labour markets. Indeed, other factors, either policy-induced or not

directly related to policy action, might also have been largely responsible for the observed improvement in labour market performance⁶⁸.

3.2.7. Making work pay through incentives to enhance work attractiveness

In the Employment Guidelines⁶⁹, Member States are asked to pay particular attention to the link between benefit systems and effective job search, and to introduce measures to eliminate inactivity traps, *while preserving an adequate level of social protection*. By 2010, Member States aim to achieve *a significant reduction in high marginal effective tax rates and, where appropriate, in the tax burden of low-paid workers*.

Tables 20 and 21 present data on four structural indicators calculated by Eurostat: a) the tax wedge on low

63 This type of analysis based on macroeconomic panel data is usually affected by a number of technical problems, notably i) small number of time-varying observations for labour market institutions; ii) high multicollinearity between explanatory variables; and iii) endogeneity of regressors in particular for active labour market policies. These problems do not permit a precise identification of estimates for individual institutions (i.e. within acceptable confidence intervals).

64 The original *Okun* law predicted a negative correlation between unemployment and output over the business cycle.

65 EU-15, excluding Luxembourg.

66 Although the latter is not statistically significant.

67 The medium run is defined as two years.

68 The former group includes: monetary union, budgetary consolidation and structural reforms in areas not directed related with labour market policy. The latter covers: economic shocks such as the protracted effects of German reunification, the impact of a period of relative wage moderation since the second half of the 1990s, and effects due to productivity trends.

69 Specifically, the eighth Employment Guideline for 2003-2005.

Table 20 – The tax wedge, the unemployment trap, the low-wage trap indicators and the implicit tax rate on labour

	1997	1998	1999	2000	2001	2002	2003
Tax wedge (a)							
EU-15	40.0	39.3	38.5	37.9	37.0	36.9	37.2
EU-25	40.1	39.4	38.6	38.1	37.2	37.1	37.4
US	29.2	29.1	29.2	29.0	27.4	27.3	27.1
Unemployment trap (b)							
EU-15	NA	NA	NA	NA	79.1	78.8	78.7
EU-25	NA	NA	NA	NA	78.8	78.5	78.3
US	NA	NA	NA	NA	70.6	70.6	70.3
Low wage trap (s/c) (c)							
EU-15	NA	NA	NA	NA	54.3	53.7	53.9
EU-25	NA	NA	NA	NA	53.8	53.1	53.1
US	NA	NA	NA	NA	32.2	31.8	31.1
Low wage trap (c2c) (d)							
EU-15	NA	NA	NA	NA	55.1	56.1	61.4
EU-25	NA	NA	NA	NA	55.6	56.5	61.5
US	NA	NA	NA	NA	58.5	55.2	53.0
Implicit tax rate on labour (e)							
EU-25	37.8	37.9	37.6	37.3	36.9	36.5	37.0

Source: Eurostat, Structural and Employment indicators, and DG TAXUD.

Note: (a) Tax wedge on labour costs, defined as income tax on gross wage earnings plus the employee's and employer's social security contributions expressed as a percentage of labour costs for a single person without children earning 67% of the average earnings of a full time average production worker (APW); (b) Unemployment trap, measuring the percentage of gross earnings which is taxed away through higher tax and social security contributions and the withdrawal of unemployment and other benefits when an unemployed person returns to employment. This structural indicator is available only for single persons without children earning 67% of the APW when in work; (c) Low wage trap for a single person without children, defined as the difference between the increase in gross earnings and the increase in net income, expressed as a percentage of the increase in gross earnings, when gross earnings increase from 33% to 67% of the APW; (d) Low wage trap for a single earner couple with two children in the age between 6 and 11 years, defined as the difference between the increase in gross earnings and the increase in net income, when gross earnings increase from 33% to 67% of the APW; (e) The implicit tax rate on labour is a macro indicator that approximates an average effective tax burden on total labour income in the economy.

wages; b) the unemployment trap for low paid workers; c) two low-wage trap indicators; d) an inactivity trap indicator calculated in a joint Commission/OECD project⁷⁰, and e) an implicit tax rate on total labour

income calculated by DG TAXUD/Eurostat⁷¹.

A tax wedge indicator measures the gap between the net wage for the employee and the labour cost for the

employer. This type of indicator is relevant for the demand for labour. For a given net wage/take-home pay, a higher tax wedge should be associated with lower labour demand. In previous research covering Europe and the US⁷², it was found that a relatively large tax wedge reduces income inequality and increases unemployment, while the effect on participation is insignificant. In the EU, the tax wedge on low-paid workers has fallen on average by about 3 percentage points since 1997 (table 20). The EU countries with the largest declines are: FR, IE, IT, HU, FI and SE.

An unemployment trap indicator attempts to capture the financial incentive for an unemployed person to take up a job. In particular circumstances, an unemployed individual with low earning potential and/or receiving relatively generous unemployment benefits may face a situation where accepting an employment offer may lead to very low (or no) increase in disposable income, as the result of the combined effect of benefit withdrawal and higher taxes on in-work income. In the EU, the unemployment trap indicator remained on average relatively stable but at a high value during the period 2001-2003, hovering at just under 80%, which compares with about 70% in the US. In eight EU Member States, the unemployment trap is over 85%, namely in BE, DK, DE, LV, LU, NL, PT and SE. Although data are only available for three years (2001 to 2003), significant changes in this indicator have occurred in some countries: a decrease in FR, LT, HU, PL and SK and an increase in EL, for example.

70 Some care may be necessary when interpreting these indicators as they primarily focus on the situation of individuals without taking into account broader household circumstances (e.g. income from financial wealth, the labour market situation of other household members, etc.).

71 "The Structures of the Taxation System in the European Union" (2004), DG TAXUD and Eurostat.

72 Groot et al. "Is the American Model Miss World, Choosing between the Anglo-Saxon model and a European-style alternative", 2004, CPB No 40 Discussion Paper.

Table 21 – Inactivity trap indicator for 2001 showing the marginal effective tax rate of moving from social assistance to work at a wage level equivalent to 67% of the average production worker (APW) for the first worker, while the wage level for the second earner is indicated in each column.

	Single					Single parent, 2 children					1 earner couple				
% of APW	33%	50%	67%	100%	150%	33%	50%	67%	100%	150%	33%	50%	67%	100%	150%
BE	85	71	67	64	61	97	77	71	67	63	97	78	69	63	61
DK	96	96	83	72	69	84	92	87	76	72	34	59	73	70	67
DE	84	90	80	71	67	84	90	85	74	67	84	90	81	69	62
EL	16	16	16	18	22	16	16	16	16	20	16	16	16	18	22
ES	69	50	44	40	37	100	68	58	46	40	88	60	47	41	37
FR	81	83	71	60	52	69	75	81	69	55	76	83	86	65	54
IE	100	87	73	59	54	51	50	54	60	53	100	100	87	68	54
IT	10	16	20	27	31	-1	-1	-2	17	27	7	8	13	24	30
LU	89	92	76	63	58	86	94	82	59	54	79	90	98	73	59
NL	97	92	84	72	59	93	82	80	70	59	96	96	92	78	63
AT	100	88	75	64	57	100	99	84	69	61	100	100	86	71	62
PT	55	50	42	36	35	55	55	55	52	45	55	55	55	54	44
FI	100	86	78	67	61	70	65	66	65	60	100	97	91	78	69
SE	100	98	82	67	60	82	63	61	60	56	100	100	98	78	67
UK	80	78	70	58	49	81	45	56	65	57	88	84	82	66	55
CZ	83	70	59	49	43	100	94	80	67	57	100	92	79	64	53
HU	69	55	53	49	51	61	45	38	39	45	69	55	53	49	51
PL	92	72	63	53	47	100	86	84	68	57	100	94	78	63	54
SK	99	81	72	56	46	100	100	91	72	59	100	100	100	80	62
NO	83	85	71	60	56	78	73	69	68	60	93	91	76	63	56
SZ	100	100	81	63	53	100	100	92	69	56	100	100	95	71	57
US	21	29	29	29	33	30	33	43	45	40	18	25	32	31	31
JP	79	69	56	43	36	108	103	95	70	55	79	84	71	54	43

A low-wage trap indicator is usually used to look at the financial consequences of increasing working hours or moving up the wage ladder. This type of indicator is relevant for analysing circumstances where low-paid workers may be locked/trapped in benefit receipt, because they would

suffer a significant reduction in their benefits if they were to take a job in the regular labour market. In Eurostat's *Structural Indicators*, this type of indicator is available for a single person without children and a single-earner couple with two children in the age between 6 to 11 years. The former

indicator suggests that the marginal effective tax rate on labour supply remained relatively stable in the EU-15 and EU-25, while the latter indicator registered an average increase of 5 percentage points over a three-year period, reaching 61.5% in 2003. Therefore, one-earner couples with

Table 21 (cont.) – Inactivity trap indicator for 2001 showing the marginal effective tax rate of moving from social assistance to work at a wage level equivalent to 67% of the average production worker (APW) for the first worker, while the wage level for the second earner is indicated in each column.

	1 earner couple with 2 children					2 earners couple*					2 earners couple with 2 children*				
% of APW	33%	50%	67%	100%	150%	33%	50%	67%	100%	150%	33%	50%	67%	100%	150%
BE	97	72	65	60	59	46	45	49	51	52	46	45	48	51	52
DK	37	58	74	74	69	56	52	50	50	55	83	70	64	59	61
DE	84	90	77	69	62	42	45	47	48	49	52	51	51	51	51
EL	16	16	16	16	20	16	16	16	18	22	16	16	16	16	20
ES	106	77	64	49	42	18	16	19	23	25	15	12	15	20	23
FR	68	75	82	74	58	21	23	27	30	31	56	43	41	37	34
IE	100	95	87	72	57	12	15	18	22	24	34	29	29	29	29
IT	-5	-4	-7	12	26	28	33	32	35	37	37	44	43	44	43
LU	75	87	93	76	59	14	17	20	24	28	14	14	14	18	24
NL	96	94	90	78	63	35	33	36	39	38	38	35	38	40	39
AT	100	100	97	78	67	21	20	24	30	34	21	20	24	30	34
PT	55	55	55	57	56	42	33	30	28	27	87	73	57	46	39
FI	100	100	99	89	76	25	27	30	35	40	42	38	38	40	43
SE	100	100	100	84	71	27	27	29	32	36	37	37	37	36	40
UK	93	66	72	74	62	7	15	19	24	26	63	49	44	40	38
CZ	100	100	96	77	63	31	29	28	28	29	31	30	30	31	31
HU	61	45	38	39	45	21	23	27	32	40	21	23	27	32	40
PL	100	100	91	80	65	31	32	33	33	33	54	47	44	41	41
SK	100	100	100	96	72	32	28	27	26	27	81	61	51	46	40
NO	100	99	92	73	63	26	29	30	32	37	26	29	30	32	37
SZ	100	100	100	75	59	20	21	23	25	27	20	21	22	24	26
US	30	37	46	49	43	27	28	28	29	29	27	20	22	24	26
JP	79	84	86	71	56	15	16	16	17	18	36	28	24	25	23

Source: Joint European Commission-OECD project, using OECD Tax-Benefit models.

Note: * The wage level of the first earner is fixed at 67% of the APW, while the wage level of the second earner is indicated in each column.

two children have a lower financial incentive to take a job than a single person without children.

Besides unemployment and low-wage trap indicators, an inactivity trap indi-

cator can also be calculated. This type of indicator can be interpreted as the marginal effective tax rate relevant for influencing the decision of inactive people to enter the labour force. Such an indicator covers those out of work

and not eligible to receive unemployment benefits, but who are instead benefiting from income or social assistance programmes. Table 21 presents some values for the inactivity trap indicator calculated in a joint Euro-

Table 22 – Employment by type of contract and gender for individuals aged 15-64 (proportions of total employment as percentages)⁷⁷

		1998			2001			2003			2004		
		ft	pt	nkwn	ft	pt	nkwn	ft	pt	nkwn	ft	pt	nkwn
EU-15	M+F	82.9	16.9	0.1	82.3	17.6	0.1	81.8	18.2	NA	80.9	19.0	0.1
	F	67.1	32.7	0.2	66.6	33.3	0.2	66.3	33.6	NA	65.0	34.9	0.1
	M	94.4	5.5	0.1	94.2	5.7	NA	93.8	6.2	NA	93.3	6.6	0.1
EU-25	M+F	NA	NA	NA	83.7	15.9	0.3	83.3	16.5	0.2	82.7	17.3	0.1
	F	NA	NA	NA	70.3	29.4	0.3	69.9	29.9	0.1	68.8	31.1	NA
	M	NA	NA	NA	94.1	5.6	0.3	93.7	6.0	0.3	93.6	6.3	NA

Source: Eurostat, LFS (annual averages based on quarterly data).

Note: ft: full-time; pt: part-time; nkwn: not known.

pean Commission/OECD project⁷³ aimed at monitoring the direct influence of tax and benefit policies on household incomes.

The authors of this report⁷⁴ state that: *the likelihood of an inactivity trap for people receiving means-tested benefits (i.e. under an assistance programme) is highest for low-skilled workers with low earning potential, possibly leading to continued benefit dependency and progressive marginalisation in the labour market.* The

authors conclude by saying that the inactivity trap is potentially more worrying than the unemployment trap.

The implicit tax rate (ITR) on employed labour is defined as all direct and indirect taxes, and employees' and employers' social contributions levied on employed labour income divided by the total compensation of employees⁷⁵. The resulting ITR on labour income is a summary measure that approximates an average effective tax burden on labour income

in the economy⁷⁶. The evolution of the ITR in the EU shows little overall progress in reducing the effective tax burden on labour.

3.2.8. Part-time employment

One main feature over the past two decades in the EU-15 has been the growing share of part-time employment⁷⁸. In 2004, part-time employment accounted for about 17.3% of total employment (for the age group

73 In the European Commission, this project is financed jointly by DGs ECFIN, EMPL and TAXUD and coordinated by EUROSTAT.

74 G. Carone, A. Salomäki, H. Immervoll and D. Paturot, (2003), "Indicators of unemployment and low-wage traps (marginal effective tax rates on labour)", *ECFIN Economic Papers* No 197, December.

75 The ITR is a macro indicator that takes into account the whole economy, whereas the tax-wedge (between labour costs to the employer and the corresponding net take-home pay of the employee) is a micro indicator of a specific private sector calculated for various household types and different representative wage levels.

Par-wise comparisons between the ITR macro indicator and the tax-wedge micro indicator for a single average production worker at average earnings (without children) indicate that tax-wedges are significantly higher than the implicit tax rates on labour income for some Member States. Nevertheless, the correlation between the macro and micro indicators is still moderately strong. Member States with a high tax-wedge for an average production worker generally also have relatively high tax rates on labour.

Heijmans and Acciari (2004), "Examination of the Macroeconomic Implicit Tax Rate on Labour derived by the European Commission", DG TAXUD, *Taxation Papers*, 4/2004.

76 The ITR on labour income is a macro indicator, thereby it can hide important variation in effective tax rates across different household types or at different wage levels. In some Member States, for example, recent tax reforms may have a more pronounced effect on low-paid, low-qualified workers or families with children.

77 DG EMPL estimates of annual averages are based on quarterly LFS data to allow for detailed breakdowns (by gender, age, education, sector, etc.). These breakdowns were estimated for the sections on *part-time employment* (3.2.8), on *fixed-term/temporary employment* (3.2.9), and on *inactivity* (3.2.10). These estimates can differ from Eurostat's official annual totals (reported in tables 37 and 38 and in Chapter 1), mainly because they cover the 15-64 age group (instead of the population of working age, i.e. 15 years and above) and due to rounding errors.

78 The distinction between full-time and part-time work is made on the basis of a spontaneous answer given by the respondent. It is impossible to establish a more exact distinction between part-time and full-time work due to variations in working hours between Member States and also between branches of industry. However, by checking the answer against the number of hours usually worked, it should be possible to detect and correct implausible answers, since part-time work should not exceed 35 hours, while full-time work will usually start at about 30 hours.

15-64) in the enlarged EU⁷⁹, with a large dispersion across Member States. Tables 22 to 26 describe in some detail the major characteristics of part-time employment. Using data from the EU labour force survey (LFS), the relevant facts that emerge are: i) the strong gender dimension of part-time work (nearly one in three women have a part-time job, table 23); ii) the above-average proportion of young people and older workers in part-time employment (about 25% for individuals aged 15-24 and 22% for those aged 55-64, table 23); iii) the proportion of part-time employment drops for individuals with tertiary education (table 24); iv) the propor-

tion of part-time employment is highest in the service sector (table 25); and v) slightly below one fifth of part-time employment is involuntary, about one quarter is due to “family or personal responsibilities”, while slightly below one third is voluntary (table 26). As regards the percentage of “not known”/“no answer” responses, it is negligible for the full-time/part-time question (table 22), but amounts to more than 20% in the replies to “level of education attained” (table 24).

According to some analyses⁸⁰, the cumulative rise in part-time employment observed since the early 1980s explains between one fifth and one

third of the total increase in the employment rate over the same period.

Part-time working has contributed to increased flexibility in labour markets. On the labour demand side, this type of contract is particularly suited to cushion against economic fluctuations, as its administrative and legal rules (i.e. employment protection legislation) are usually less stringent than those for full-time employment. Moreover, from the standpoint of employers, some studies have found that the hourly wage rate received by part-time workers is lower (by about 10%) than for those in full-time employment (OECD⁸¹, 1999). On the labour supply

Table 23 – Proportion of part-time working by gender and age groups (percentages)

		1998				2001			
		15-64	15-24	25-49	55-64	15-64	15-24	25-49	55-64
EU-15	M+F	16.9	22.4	15.7	20.1	17.6	22.9	16.2	21.8
	F	32.7	29.9	31.8	41.3	33.3	30.9	32.3	42.0
	M	5.5	16.3	3.7	7.9	5.7	16.2	3.7	9.3
EU-25	M+F	NA	NA	NA	NA	15.9	21.3	14.4	21.3
	F	NA	NA	NA	NA	29.4	28.5	28.2	40.2
	M	NA	NA	NA	NA	5.6	15.3	3.6	9.7
		2003				2004			
		15-64	15-24	25-49	55-64	15-64	15-24	25-49	55-64
EU-15	M+F	18.2	24.7	16.6	22.3	19.0	26.0	17.4	22.9
	F	33.6	32.6	32.6	41.5	34.9	34.6	33.9	42.1
	M	6.2	17.9	4.0	9.9	6.6	18.8	4.3	10.3
EU-25	M+F	16.5	23.1	14.8	21.5	17.3	24.5	15.5	22.0
	F	29.9	30.4	28.5	39.4	31.1	32.3	29.7	39.9
	M	6.0	16.9	3.8	10.0	6.3	18.0	4.1	10.3

Source: Eurostat, LFS (annual averages based on quarterly data).

79 17.7% for the total population (see Chapter 1).

80 Chapter 2 of *Employment in Europe 2004*.

81 OECD (1999) “Focus on part-time work”. *Employment Outlook*, June.

side, part-time work is likely to increase the opportunities open to individuals, drawing people into the labour market who were previously unwilling or unable to work. By bringing additional individuals into the labour market, the development of part-time employment is likely to increase potential output in the EU.

However, this type of contract also has a number of potential drawbacks. Notably, it is associated with lower wages (and fringe benefits) than a full-time contract, lower chances for promotion, and lower investment in training.

In a recent study⁸², the determinants of the part-time rate⁸³ are investigated using pooled macro-panel data for: i) the business cycle; ii) labour market institutions and policy; and iii) other structural factors of a sociological, demographic or economic nature. From this work, the following findings stand out:

Firstly, the part-time rate is negatively correlated with the output gap, meaning that in “good times” part-time work grows more slowly than total employment and, conversely, the part-time rate tends to increase when the economy operates below its potential. Furthermore, the counter-cyclical

behaviour of the part-time rate is more accentuated in periods of weak activity than in periods of strong activity. This asymmetric behaviour of the part-time rate is a desirable feature that could enhance the counter-cyclical properties of part-time employment and reduce the fluctuations in (total) employment.

Secondly, some institutions and policies appear to have a significant impact on the part-time rate, with the relationships having the correct sign as expected by the economic theory. Employment protection legislation for regular jobs is found to be significantly and positively correlated with the

Table 24 – Proportion of part-time working by gender and education level for individuals aged 15-64 (percentages)

		1998					2001				
		total	0-2	3-4	5-6	nkwn	total	0-2	3-4	5-6	nkwn
EU-15	M+F	16.9	14.2	15.2	13.2	20.4	17.6	17.3	19.3	14.1	23.7
	F	32.7	29.5	29.1	21.7	39.3	33.3	34.8	36.3	24.9	44.5
	M	5.5	5.3	5.3	5.8	5.7	5.7	5.8	5.8	5.2	8.4
EU-25	M+F	NA	NA	NA	NA	NA	15.9	16.9	16.4	13.1	23.6
	F	NA	NA	NA	NA	NA	29.4	33.2	30.2	22.6	44.2
	M	NA	NA	NA	NA	NA	5.6	6.1	5.4	5.1	8.3
		2003					2004				
		total	0-2	3-4	5-6	nkwn	total	0-2	3-4	5-6	nkwn
EU-15	M+F	18.2	17.9	19.9	15.0	22.2	19.0	18.6	21.0	15.8	22.6
	F	33.6	35.6	36.8	25.5	41.6	34.9	37.2	38.5	26.5	41.9
	M	6.2	6.2	6.2	6.0	8.0	6.6	6.4	6.7	6.5	8.0
EU-25	M+F	16.5	17.6	17.0	13.8	22.2	17.3	18.4	18.0	14.6	22.6
	F	29.9	34.2	31.0	23.0	41.6	31.1	35.8	32.7	23.9	41.9
	M	6.0	6.6	5.8	5.6	8.0	6.3	6.8	6.2	6.1	NA

Source: Eurostat, LFS (annual averages based on quarterly data).

Note: 0-2: Pre-primary, primary and lower secondary education – levels 0-2 (ISCED 1997); 3-4: Upper secondary and post-secondary non-tertiary education – levels 3-4 (ISCED 1997); 5-6: Tertiary education – levels 5-6 (ISCED 1997); nkwn: not known.

82 Buddelmeyer, Mourre and Ward, (2004), “The determinants of part-time work in EU countries: empirical investigations with macro-panel data”, *DG ECFIN Economic Papers* No 213.

83 The ratio between part-time employment and total employment (defined as full-time plus part-time).

Table 25 – Part-time rate among individuals aged 15-64 by gender and economic sector (percentages)											
1998							2001				
		total	pri	man	con	ser_pa	total	pri	man	con	ser_pa
EU-15	M+F	16.9	13.6	6.9	5.0	23.0	17.6	14.2	7.2	5.0	23.4
	F	32.7	27.9	19.2	34.8	36.2	33.3	28.6	19.6	35.8	36.4
	M	5.5	6.6	2.2	2.3	8.3	5.7	7.0	2.4	2.1	8.5
EU-25	M+F	NA	NA	NA	NA	NA	15.9	14.8	6.4	4.7	21.4
	F	NA	NA	NA	NA	NA	29.4	25.4	16.1	31.9	32.7
	M	NA	NA	NA	NA	NA	5.6	8.8	2.4	2.2	8.2
2003							2004				
		total	pri	man	con	ser_pa	total	pri	man	con	ser_pa
EU-15	M+F	18.2	13.3	7.6	5.2	24.1	19.0	14.2	7.9	5.4	25.1
	F	33.6	26.3	20.6	35.9	36.7	34.9	27.7	21.5	37.4	37.8
	M	6.2	7.0	2.6	2.4	9.2	6.6	7.7	2.7	2.5	9.8
EU-25	M+F	16.5	14.6	6.8	5.0	22.0	17.3	15.8	7.0	5.1	22.9
	F	29.9	25.2	17.1	32.3	33.1	31.1	26.8	17.8	33.9	34.3
	M	6.0	8.9	2.5	2.5	8.7	6.3	10.0	2.6	2.5	9.3

Source: Eurostat, LFS (annual averages based on quarterly data).

Note: pri: primary sector (A to B of Nace); man: manufacturing sector (C to E of Nace); con: construction (F of NACE); ser_pa: services without public administration (G to K + M to Q of NACE).

part-time rate. This finding is consistent with the interpretation that in the presence of very stringent employment protection legislation for regular jobs, the development of part-time employment can be seen as a way of circumventing regulatory constraints and enhancing flexibility at the margin. Furthermore, it has been found that child benefits can represent a strong disincentive to part-time working, making it less attractive for individuals (notably women) to re-enter the labour market. The above-mentioned study (Buddelmeyer et al., 2004) also finds that temporary work is positively correlated with the part-time rate, suggesting: *the absence of*

substitution effects between part-time employment and temporary employment and that these two flexible schemes are complementary in circumventing the rigidity of European labour markets (for regular employment).

Thirdly, some structural factors of a sociological, demographic or economic nature are also found to be important determinants of the part-time rate. In line with conventional wisdom, the share of the service sector in the economy and the proportion of youth in tertiary education are significantly and positively correlated with the part-time employment rate. The

female participation rate and the fertility rate are also significantly and positively correlated with the part-time employment rate. This suggests that part-time work potentially creates an opportunity for women to reconcile childcare with market work.

3.2.9. Fixed-term/temporary employment

The percentage of employees with temporary contracts⁸⁴ has been increasing over the past two decades. In 2004, the number of temporary contracts corresponded, on average, to about 13.5% of total dependent

84 A job is regarded as temporary if it is understood by both employer and the employee that the termination of the job is determined by objective conditions such as reaching a certain date, completion of an assignment or return of another employee who has been temporary replaced. In the case of a work contract of limited duration the condition for its termination is generally mentioned in the contract.

Table 26 – Reasons for part-time employment among individuals aged 15-64 (percentages)

1998								
		invpt	wantpt	illdis	fam_per	ineduc	noreas	other
EU-15	M+F	18.4	58.1	2.3	NA	11.2	1.9	8.0
	F	16.2	64.9	1.8	NA	7.3	1.6	8.3
	M	28.0	29.2	4.9	NA	27.9	3.1	6.9
EU-25	M+F	NA	NA	NA	NA	NA	NA	NA
	F	NA	NA	NA	NA	NA	NA	NA
	M	NA	NA	NA	NA	NA	NA	NA
2001								
		invpt	wantpt	illdis	fam_per	ineduc	noreas	other
EU-15	M+F	15.3	30.9	2.9	26.5	10.9	2.7	10.8
	F	13.7	31.6	2.2	31.8	7.5	2.1	11.0
	M	22.2	27.8	5.5	3.5	26.1	5.0	9.9
EU-25	M+F	16.1	30.7	3.6	25.3	10.8	2.5	11.0
	F	14.3	31.5	2.6	30.7	7.5	2.1	11.2
	M	23.5	27.2	7.3	3.2	24.3	4.4	10.0
2003								
		invpt	wantpt	illdis	fam_per	ineduc	noreas	other
EU-15	M+F	15.7	30.0	2.9	26.5	10.2	3.0	11.6
	F	14.4	30.4	2.3	31.8	7.1	2.5	11.6
	M	21.2	28.7	5.6	4.1	23.5	5.5	11.5
EU-25	M+F	16.7	29.5	3.6	25.3	10.2	2.9	11.8
	F	15.2	30.0	2.7	30.8	7.1	2.4	11.8
	M	22.3	27.4	7.2	3.7	22.6	5.0	11.8
2004								
		invpt	wantpt	illdis	fam_per	ineduc	noreas	other
EU-15	M+F	16.9	27.3	3.1	28.0	10.0	4.3	10.4
	F	15.4	27.5	2.6	33.8	7.0	3.7	10.1
	M	23.2	26.9	5.4	4.0	22.6	6.4	11.5
EU-25	M+F	17.7	27.1	3.7	26.7	10.1	4.1	10.6
	F	16.1	27.3	2.9	32.7	7.0	3.6	10.4
	M	24.0	26.1	6.8	3.6	21.9	5.9	11.7

Source: Eurostat, LFS (annual averages based on quarterly data).

Note: invpt: “could not find a full-time job”; wantpt: “did not want a full-time job”; illdis: “own illness or disability”; fam_per: “Family or personal responsibilities”; ineduc: “in education or training”; noreas: “no reason given”; other: “other reasons”.

Table 27 – Employees with temporary contracts by gender and age group (percentages)									
1998					2001				
		15-64	15-24	25-49	55-64	15-64	15-24	25-49	55-64
EU-15	M+F	12.7	37.4	10.1	6.0	13.4	38.7	10.8	6.2
	F	13.6	36.1	11.2	6.1	14.6	38.2	12.1	6.6
	M	12.0	38.5	9.2	5.9	12.5	39.2	9.7	5.9
EU-25	M+F	NA	NA	NA	NA	12.8	36.6	10.3	6.8
	F	NA	NA	NA	NA	13.7	36.3	11.3	7.7
	M	NA	NA	NA	NA	12.1	36.9	9.5	6.3
2003					2004				
		15-64	15-24	25-49	55-64	15-64	15-24	25-49	55-64
EU-15	M+F	12.9	37.6	10.6	5.8	13.4	38.7	11.1	5.8
	F	14.0	37.1	12.0	6.0	14.3	37.6	12.5	6.2
	M	12.0	38.2	9.4	5.6	12.5	39.7	9.9	5.6
EU-25	M+F	12.9	37.1	10.7	6.3	13.5	38.5	11.3	6.3
	F	13.7	36.6	11.7	6.7	14.2	37.6	12.4	6.8
	M	12.2	37.4	9.7	6.1	12.9	39.3	10.4	6.0

Source: Eurostat, LFS (annual averages based on quarterly data).

employment in the enlarged EU, with a large variation among individual Member States. Tables 27 to 31 describe in some detail the major characteristics of fixed-term employment. Using data from the EU LFS, the relevant facts can be summarised as follows: i) fixed-term work has a moderate gender dimension (table 27); ii) temporary contracts are heavily concentrated among young people (close to 40% for individuals aged 15-24, table 27); iii) the proportion of employees with temporary contracts is highest for the lowest education level (table 28); iv) the proportion of fixed-term employment is higher in the primary and construction sectors and lower in manufacturing (table 29); v) a majority of individuals holding a temporary contract (about half) report that

their status/situation is involuntary or unwanted (i.e. they would prefer a permanent labour contract, see table 30), although about one in five individuals did not answer this question; and vi) about two-thirds of all temporary contracts have a duration under one year (table 31), although according to a number of studies this does not prevent a high proportion of fixed-term contracts being rolled over on expiry.

The development of fixed-term employment, together with that of part-time work, has made a significant contribution to increasing the flexibility of labour markets in recent years. Temporary employment can be viewed as a buffer for cyclical fluctuations, especially in situations of increased uncertainty, allowing firms to adjust

employment levels at a lower cost (e.g. lower firing costs). This is particularly so when, due to strong political or trade union opposition, the option of liberalising the strict regulations and laws governing permanent employment is not immediately available, leading instead to a strategy of “flexibility at the margin”, represented by the deregulation of fixed-term employment. Temporary employment can also be seen as a mechanism that facilitates transitions into the labour market and employment, particularly in the European (continental) labour markets characterised by relatively low flows.

There are important differences in the perceptions of fixed-term versus part-time employment that should be highlighted. In fact, while only about one

Table 28 – Employees with temporary contracts among individuals aged 15-64 by gender and education level (percentages)

		1998					2001				
		total	0-2	3-4	5-6	nkwn	total	0-2	3-4	5-6	nkwn
EU-15	M+F	12.7	18.3	12.1	14.2	9.9	13.4	20.0	10.5	12.1	9.6
	F	13.6	18.4	14.2	16.9	10.5	14.6	20.0	11.8	14.9	10.4
	M	12.0	18.3	10.5	11.6	9.4	12.5	20.1	9.4	9.5	9.0
EU-25	M+F	NA	NA	NA	NA	NA	12.8	19.8	10.2	11.4	9.6
	F	NA	NA	NA	NA	NA	13.7	19.5	11.2	13.8	10.5
	M	NA	NA	NA	NA	NA	12.1	19.9	9.3	9.2	9.0
		2003					2004				
		total	0-2	3-4	5-6	nkwn	total	0-2	3-4	5-6	nkwn
EU-15	M+F	12.9	19.9	10.0	11.6	8.3	13.4	20.5	10.4	11.8	13.5
	F	14.0	20.3	11.1	14.0	9.1	14.3	20.5	11.6	14.1	13.3
	M	12.0	19.6	9.0	9.4	7.6	12.5	20.5	9.4	9.5	13.7
EU-25	M+F	12.9	19.9	10.5	11.3	8.3	13.5	20.6	11.2	11.6	13.5
	F	13.7	20.1	11.3	13.4	9.1	14.2	20.4	12.0	13.7	13.3
	M	12.2	19.8	9.8	9.3	7.7	12.9	20.8	10.5	9.5	13.7

Source: Eurostat, LFS (annual averages based on quarterly data).

Note: 0-2: Pre-primary, primary and lower secondary education – levels 0-2 (ISCED 1997); 3-4: Upper secondary and post-secondary non-tertiary education – levels 3-4 (ISCED 1997); 5-6: Tertiary education – levels 5-6 (ISCED 1997); nkwn: not known.

in five individuals report that part-time working is involuntary (i.e. they would prefer to have a permanent job), nearly one in two individuals holding a fixed-term contract would prefer a permanent job instead. Moreover, the available evidence suggests that fixed-term posts are subject to high turnover, contradicting the “causality principle” under which fixed-term contracts are supposed to be used only for the temporary needs of firms⁸⁵. In addition, hourly wages in fixed-term employment tend to be lower than in permanent jobs by a factor of approximately 10%.

Other risks commonly associated with temporary employment can be characterised as typical economic externalities. From a social perspective, investment in training is usually too low, which can be partly explained by the high labour turnover and the generally low prospect of moving to a permanent job, leading both the firm and the employee to under-invest in vocational training.

In an insider-outsider wage bargaining framework⁸⁶ (e.g. Bentolila and Dolado⁸⁷, 1994), the presence of a significant proportion of temporary workers may allow permanent workers to negotiate or extract higher wages,

because the brunt of any quantity adjustment in labour demand will tend to fall on the fixed-term component of the labour force.

The high proportion of temporary employment in a number of EU Member States (chart 79) may have a detrimental impact on the welfare of temporary workers. In order to maintain an adequate level of overall flexibility, it would be preferable instead to develop part-time work, given the apparent preference of workers for this type of work organisation.

Given the high proportion of young people holding a temporary contract,

85 Ayuso i Casals (2004), “Fixed-term contracts in Spain: a mixed blessing?”, *ECFIN Country Focus*, v.1, No 1.

86 Where wage formation is controlled by insider/permanent employees protected by high firing costs.

87 Bentolila and Dolado (1994), “Labour flexibility and wages: Lessons from Spain”, *Economic Policy*, volume 18.

Table 29 – Employees with temporary contracts among individuals aged 15-64 by gender and economic sector (percentages)

		1998					2001				
		total	pri	man	con	ser_pa	total	pri	man	con	ser_pa
EU-15	M+F	12.7	30.4	9.8	18.8	12.9	13.4	34.0	10.1	19.7	13.6
	F	13.6	36.0	11.5	11.5	13.9	14.6	39.7	12.0	11.9	14.9
	M	12.0	28.1	9.2	19.5	11.7	12.5	31.6	9.4	20.4	11.9
EU-25	M+F	NA	NA	NA	NA	NA	12.8	29.3	9.6	19.1	13.0
	F	NA	NA	NA	NA	NA	13.7	34.1	11.2	10.9	14.1
	M	NA	NA	NA	NA	NA	12.1	27.3	8.9	19.9	11.6
		2003					2004				
		total	pri	man	con	ser_pa	total	pri	man	con	ser_pa
EU-15	M+F	12.9	31.7	9.2	19.9	13.2	13.4	34.0	9.7	20.5	13.6
	F	14.0	38.8	10.9	12.0	14.5	14.3	40.1	11.3	11.2	14.8
	M	12.0	28.9	8.6	20.7	11.6	12.5	31.5	9.1	21.4	12.1
EU-25	M+F	12.9	28.4	9.7	20.0	13.1	13.5	30.3	10.6	20.6	13.7
	F	13.7	33.9	11.2	11.6	14.1	14.2	35.6	12.2	10.7	14.6
	M	12.2	26.2	9.1	20.9	11.7	12.9	28.2	9.9	21.6	12.3

Source: Eurostat, LFS (annual averages based on quarterly data).

Note: pri: primary sector (A to B of Nace); man: manufacturing sector (C to E of Nace); con: construction (F of NACE); ser_pa: services without public administration (G to K + M to Q of NACE).

together with the relatively low probability of moving into a permanent position, this situation might be negatively affecting fertility rates in a number of countries (e.g. Spain), due to couples having difficulties in establishing themselves as independent households (Toharia and Malo⁸⁸, 2000).

Summing up, the development of fixed-term employment involves considerably more risks (both for the

worker and society) than part-time work. The available evidence suggests that excessive reliance on fixed-term contracts can produce a segmented labour market (between temporary and permanent workers), making it more difficult to make the transition from a fixed-term to a permanent job. In this respect, it should be mentioned that on average in the EU-15, the probability of moving from temporary to permanent employment is relatively low. *Employment in Europe 2004*⁸⁹

estimated that even after a period of six years, the probability of moving from a temporary to a permanent job was only slightly above 50%, with a 20% probability of becoming unemployed or leaving the labour force.

3.2.10. Inactivity

The Employment Guidelines⁹⁰ (EG) focus to a large extent on inactivity⁹¹, calling on Member States to:

88 Toharia and Malo (2000), "The Spanish experiment. Pros and cons of flexibility at the margin", in Esping-Anderson and Regini (eds.), *Why deregulate labour markets?*, Oxford University Press.

89 Chapter 4.

90 Specifically, the first, fifth and eight Employment Guidelines for 2003-2005.

91 The Labour Force Survey defines inactive persons as the population of working age (15 years and above) excluding persons in employment and unemployed persons. A person is considered as having employment if he or she did any work for pay or profit during the reference week, even for as little as one hour. In accordance with the International Labour Organisation guidelines, unemployed persons comprise persons who, during the reference week, were: (a) without work; (b) currently available for work; and (c) actively seeking work.

Table 30 – Reasons for temporary employment among individuals aged 15-64 (percentages)

		1998					2001				
		invtmp	wanttmp	ineduc	stage	noreas	invtmp	wanttmp	ineduc	stage	noreas
EU-15	M+F	39.4	9.0	19.7	4.6	27.4	35.1	6.2	18.1	7.2	33.4
	F	37.6	11.2	18.1	4.1	29.0	33.9	7.4	16.8	6.9	35.1
	M	41.0	7.0	21.1	4.9	25.9	36.2	5.2	19.5	7.4	31.7
EU-25	M+F	NA	NA	NA	NA	NA	36.9	6.8	18.1	7.5	30.7
	F	NA	NA	NA	NA	NA	35.5	7.8	17.0	7.2	32.5
	M	NA	NA	NA	NA	NA	38.3	5.8	19.1	7.7	29.1
		2003					2004				
		invtmp	wanttmp	ineduc	stage	noreas	invtmp	wanttmp	ineduc	stage	noreas
EU-15	M+F	44.3	9.2	17.5	6.7	22.3	47.0	9.1	17.3	6.3	20.3
	F	45.0	10.3	15.9	6.4	22.3	48.6	9.9	15.3	6.0	20.1
	M	43.6	8.1	19.0	7.0	22.2	45.5	8.3	19.1	6.5	20.5
EU-25	M+F	45.3	9.7	16.1	7.2	21.6	48.4	9.1	15.5	6.8	20.2
	F	46.0	10.5	15.0	6.8	21.7	49.5	10.0	14.1	6.6	19.9
	M	44.7	9.0	17.2	7.6	21.5	47.3	8.4	16.8	7.0	20.5

Source: Eurostat, LFS (annual averages based on quarterly data).

Note: invtmp: “could not find a permanent job”; wanttmp: “did not want a permanent job”; ineduc: “in education or training”; stage: “probationary period”; noreas: “no reason given”.

- *Develop and implement active and preventive measures for the unemployed and the inactive to prevent inflow into long-term unemployment, and to promote the sustainable integration into employment of unemployed and inactive people;*
- *Promote active ageing, notably by fostering working conditions conducive to job retention;*
- *Eliminate incentives for early exiting from the labour market, notably by reforming early retirement schemes and ensuring that it pays to remain active in the labour market, and encouraging employers to employ older workers;*
- *Reform financial incentives with a view to making work attractive [...].*

[...] where appropriate, reform tax and benefit systems and their interaction with a view to eliminating unemployment, poverty and inactivity traps, and encouraging the participation of women, low-skilled workers, older workers, people with disabilities and those furthest from the labour market in employment.

Moreover, a target has been set for the EU as a whole aiming for the effective average exit age from the labour force to rise by five years by 2010 (estimated at 59.9 years in 2001).

Given the importance of this subject in the EES, combined with the UK Presidency’s objective of addressing “inactivity issues”, the fifth chapter of this report extensively covers this topic. Therefore, this section presents only

some general facts in order to broadly characterise inactivity and ensure a balanced coverage of all the main relevant issues pertaining to the EES.

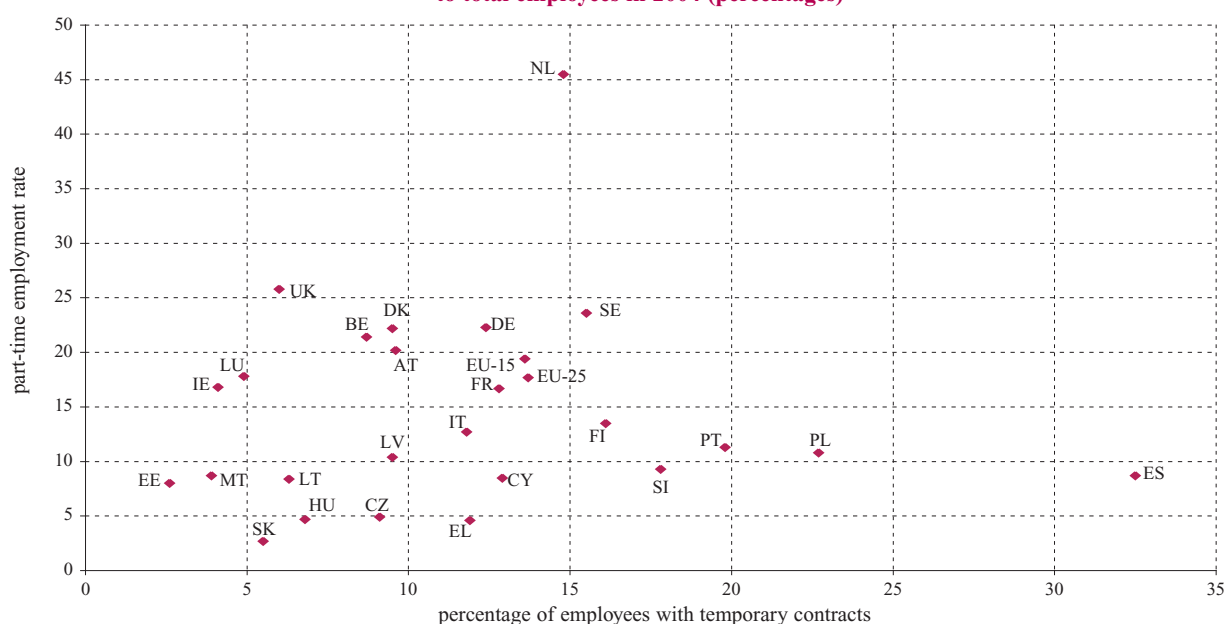
Inactivity has a strong life-cycle pattern, reflecting the changing dominance of different activities during a typical life (i.e. from education in youth, to labour market participation in prime age, to retirement in old age). Between 2001 and 2004, the proportion of inactive older people (aged 55-64) in the total population of the same age group declined by about 4 percentage points (table 32). This reflects a concomitant rise in the employment rate for older workers (table 15).

There is a strong negative correlation between inactivity and education attainment levels (table 33).

Table 31 – Distribution of the duration of temporary employment (in months) among individuals aged 15-64 (percentages)

		1998					2001				
		0-6M	7-12M	13-24M	25-36M	GT_36M	0-6M	7-12M	13-24M	25-36M	GT_36M
EU-15	M+F	36.2	27.9	11.3	12.6	12.0	35.9	26.4	11.6	13.3	12.8
	F	34.6	31.1	11.6	12.6	10.2	35.7	29.0	11.8	13.0	10.4
	M	37.7	25.1	11.1	12.6	13.6	36.1	23.8	11.4	13.6	15.1
EU-25	M+F	NA	NA	NA	NA	NA	37.6	27.4	11.2	12.1	11.7
	F	NA	NA	NA	NA	NA	36.7	30.1	11.5	12.1	9.7
	M	NA	NA	NA	NA	NA	38.5	24.7	10.9	12.2	13.6
		2003					2004				
		0-6M	7-12M	13-24M	25-36M	GT_36M	0-6M	7-12M	13-24M	25-36M	GT_36M
EU-15	M+F	37.2	25.6	10.6	13.7	13.0	38.1	26.5	10.4	12.8	12.2
	F	37.0	27.8	10.9	13.3	11.0	37.8	29.5	10.5	12.4	9.8
	M	37.4	23.2	10.2	14.1	15.1	38.3	23.4	10.4	13.2	14.7
EU-25	M+F	38.8	26.0	10.7	12.3	12.1	38.8	27.6	10.4	11.5	11.7
	F	37.8	28.3	11.1	12.3	10.6	37.8	30.5	10.5	11.5	9.8
	M	39.8	23.7	10.4	12.4	13.7	39.8	24.7	10.3	11.6	13.6

Source: Eurostat, LFS (annual averages based on quarterly data).

Chart 79 – Ratios of part time workers to total employment and of fixed-term employment to total employees in 2004 (percentages)

Source: Eurostat.

Table 32 – Ratio of inactive persons to the total population by gender and age groups (percentages)

		1998				2001			
		15-64	15-24	25-49	55-64	15-64	15-24	25-49	55-64
EU-15	M+F	31.8	53.4	17.0	60.0	31.0	52.8	16.4	59.0
	F	41.7	57.1	27.6	71.2	40.0	56.4	26.0	69.2
	M	22.0	49.8	6.5	48.3	22.0	49.3	6.8	48.4
EU-25	M+F	NA	NA	NA	NA	31.4	54.4	16.0	60.2
	F	NA	NA	NA	NA	39.9	58.0	25.0	70.5
	M	NA	NA	NA	NA	22.8	50.9	7.0	49.4
		2003				2004			
		15-64	15-24	25-49	55-64	15-64	15-24	25-49	55-64
EU-15	M+F	30.0	53.0	15.7	55.7	29.6	52.8	15.4	54.7
	F	38.4	56.4	24.6	65.9	37.7	56.2	24.0	64.7
	M	21.5	49.6	6.8	45.0	21.5	49.5	6.9	44.3
EU-25	M+F	30.7	55.2	15.5	57.1	30.5	55.4	15.2	56.2
	F	38.8	58.8	23.8	67.3	38.3	58.9	23.3	66.2
	M	22.6	51.7	7.1	46.3	22.6	51.9	7.1	45.7

Source: Eurostat, LFS (annual averages based on quarterly data).

According to the Labour Force Survey, individuals quote the following reasons, among others, for being inactive (table 34): i) education or training; ii) retirement; iii) family or personal responsibilities; and iv) own illness or disability. Additionally, between 10 and 15 percent of respondents did not answer the question.

According to the data, almost 15 percent of inactive persons say that they would be willing to work (table 35), which, together with an inactivity rate of about 30% (table 32), suggests the existence of a large pool of discouraged potential workers. Nevertheless,

a positive answer to this question does not necessarily mean that a person was taking steps to find work or would accept a job were one to be offered.

3.2.11. The role of active labour market policies (ALMPs)

The Employment Guidelines⁹² call for Member States to *develop and implement active and preventive measures to prevent inflow into long-term unemployment, and to promote the sustainable integration into employment of unemployed and inactive people.*

Compliance with these guidelines is likely to require the strengthening of active labour market policies⁹³ in many EU Member States. Using Eurostat data (Labour Market Policy database), table 36 presents a breakdown of government expenditure on labour market policies as a percentage of GDP for the period 1998 to 2003.

In the EU-15, the average government expenditure on ALMPs amounted to 0.7 percent of GDP in 2003⁹⁴. There is a wide dispersion in active labour market spending across Member States⁹⁵ and also large differences in

92 Specifically, the first Employment Guideline for 2003-2005.

93 The general purpose of policies grouped under the heading of active labour market policies (ALMPs) is to provide assistance to the unemployed, which will improve their chances of obtaining work. By contrast, passive measures essentially refer to income support measures such as unemployment benefits.

94 Latest year for which there are data.

95 An unweighted standard deviation of 1/2.

Table 33 – Distribution of inactive persons aged 15-64 by gender and education level (percentages)

		1998				2001			
		0-2	3-4	5-6	nkwn	0-2	3-4	5-6	nkwn
EU-15	M+F	42.0	17.9	4.2	35.9	54.1	32.4	7.9	5.6
	F	43.2	17.2	4.1	35.4	55.1	31.5	7.5	5.8
	M	39.7	19.2	4.3	36.8	52.2	33.9	8.6	5.3
EU-25	M+F	NA	NA	NA	NA	53.3	34.8	7.2	4.7
	F	NA	NA	NA	NA	53.9	34.2	7.0	4.9
	M	NA	NA	NA	NA	52.2	35.9	7.5	4.3
		2003				2004			
		0-2	3-4	5-6	nkwn	0-2	3-4	5-6	nkwn
EU-15	M+F	52.7	33.1	8.5	5.6	52.1	34.2	8.9	4.8
	F	53.8	32.3	8.1	5.8	52.8	33.6	8.5	5.1
	M	50.9	34.6	9.2	5.3	51.0	35.2	9.5	4.3
EU-25	M+F	51.7	36.0	7.7	4.6	50.9	37.1	8.1	3.9
	F	52.2	35.5	7.5	4.8	51.0	36.8	8.0	4.2
	M	50.9	36.9	8.0	4.2	50.6	37.6	8.4	3.4

Source: Eurostat, LFS (annual averages based on quarterly data).

Note: 0-2: Pre-primary, primary and lower secondary education – levels 0-2 (ISCED 1997); 3-4: Upper secondary and post-secondary non-tertiary education – levels 3-4 (ISCED 1997); 5-6: Tertiary education – levels 5-6 (ISCED 1997); nkwn: not known.

the proportion of total spending on active labour market policies⁹⁶.

Using pooled macro-panel data, *Employment in Europe 2004*⁹⁷ carried out an econometric analysis of the determinants of employment rate variations across Europe. OECD data on expenditure on various ALMPs were used, among many other regressors⁹⁸. The findings of that analysis suggest

that an increase in the intensity of spending on ALMPs (defined as the percentage of GDP allocated to active policies divided by the unemployment rate) accounts for 10% to 20% of the total increase in the employment rate observed between 1997 and 2002. Using OECD's expenditure breakdown for ALMPs, the results of that analysis suggest that the expenditure

category with the most significant and positive impact on the employment rate is spending on public employment services and administration (i.e. job search assistance).

The evidence from cross-country analyses is that ALMPs significantly reduce unemployment (Scarpetta⁹⁹, 1996; Nickell¹⁰⁰, 1997; Elmeskov et al.¹⁰¹, 1998). This finding is backed up

96 From less than 15% to more than 50%.

97 Chapter 2.

98 In the regressions, data from the OECD Social Expenditure database were used because they provide a longer series than Eurostat sources. OECD's and Eurostat's data are not directly comparable due to the use of different categories for the breakdown of total spending on ALMPs. OECD's Social Expenditure database breaks down total expenditure on ALMPs into the following categories: i) labour market training; ii) youth measures; iii) subsidised employment; iv) employment measures for the disabled; and v) employment services and administration.

99 Scarpetta S. (1996), "Assessing the role of labour market policies and institutional settings on unemployment: a cross country study", *OECD Economic Studies*, vol. 26, pp. 43-98.

100 Nickell, S (1997), "Unemployment and labour market rigidities: Europe versus North America", *Journal of Economic Perspectives*, vol. 11(3), pp. 55-74.

101 Elmeskov J., Martin J. and Scarpetta S (1998), "Key lessons for labour market reforms: evidence from OECD countries' experiences", *Swedish Economic Policy Review*, vol. 5(2), pp. 205-252.

Table 34 – Reasons for inactivity among persons aged 15-64 (percentages)

1998									
		layoff	illdis	fam_per	ineduc	retired	thknowk	noreas	other
EU-15	M+F	NA	8.3	23.2	28.5	16.8	1.4	11.9	9.9
	F	NA	6.2	34.2	22.2	12.3	1.6	12.0	11.5
	M	NA	12.2	2.2	40.6	25.3	1.1	11.9	6.7
EU-25	M+F	NA	NA	NA	NA	NA	NA	NA	NA
	F	NA	NA	NA	NA	NA	NA	NA	NA
	M	NA	NA	NA	NA	NA	NA	NA	NA
2001									
		layoff	illdis	fam_per	ineduc	retired	thknowk	noreas	other
EU-15	M+F	NA	9.5	19.9	28.2	17.2	3.6	12.2	9.4
	F	NA	7.2	29.7	22.3	12.9	3.9	12.4	11.7
	M	NA	13.8	1.7	39.0	25.2	3.1	11.8	5.3
EU-25	M+F	NA	11.1	18.6	29.8	18.2	3.6	10.3	8.4
	F	NA	8.5	28.1	23.8	14.9	3.7	10.6	10.3
	M	NA	15.7	1.6	40.3	24.2	3.4	9.7	5.1
2003									
		layoff	illdis	fam_per	ineduc	retired	thknowk	noreas	other
EU-15	M+F	NA	9.3	18.9	23.1	19.5	3.7	16.7	8.7
	F	NA	7.1	28.5	18.3	14.7	3.9	16.5	10.9
	M	NA	13.1	1.7	31.9	28.3	3.3	17.0	4.7
EU-25	M+F	NA	10.9	17.7	26.0	20.0	3.7	13.9	7.8
	F	NA	8.4	27.0	20.9	16.4	3.8	13.9	9.6
	M	NA	15.2	1.5	34.9	26.2	3.5	13.9	4.7
2004									
		layoff	illdis	fam_per	ineduc	retired	thknowk	noreas	other
EU-15	M+F	0.3	9.8	15.7	22.7	18.5	4.5	15.8	12.6
	F	0.2	7.7	23.7	18.2	14.1	4.7	15.5	16.0
	M	0.4	13.5	1.5	30.9	26.5	4.0	16.5	6.7
EU-25	M+F	0.3	11.4	15.1	25.8	19.1	4.4	12.8	11.2
	F	0.2	9.0	23.1	20.9	15.8	4.5	12.6	13.9
	M	0.4	15.6	1.3	34.4	24.8	4.1	13.1	6.4

Source: Eurostat, LFS (annual averages based on quarterly data).

Note: layoff: “awaiting recall to work (on lay-off)”; illdis: “own illness or disability”; fam_per: “familiar or personal responsibilities”; ineduc: “in education or training”; retired: “retired”; thknowk: “think no work is available”; noreas: “no reason given”; other: “other reasons”.

by numerous micro panel studies¹⁰², which show that certain active labour market policies are effective. In particular, public employment services and

administration tend to have consistently positive outcomes, but other types of measure such as employment subsidies and labour market training must

be well designed if they are to have a significant impact. As regards training, the results are generally poor other than making the unemployed job-ready, though it works better for women (Walsh et al., 2005)¹⁰³.

Some studies¹⁰⁴ suggest that (certain) ALMPs can reduce the potential trade-off between efficiency and equity, which, translated into the overarching objectives of the EES, basically means solving the possible dilemma between labour market participation and social cohesion. Following this through, Groot et al. (2004) find that spending on ALMPs, especially in certain types of measures, can simultaneously raise the rate of participation, lower the rate of unemployment and reduce income inequality. This result contrasts with the estimated

Table 35 – Willingness to work of inactive persons aged 15-64 (percentages)									
		1998		2001		2003		2004	
		a	b	a	b	a	b	a	b
EU-15	M+F	11.5	11.2	10.0	9.7	10.8	10.4	13.8	13.2
	F	11.6	11.4	10.1	9.8	10.8	10.5	13.8	13.4
	M	11.4	11.0	9.9	9.4	10.8	10.2	13.6	12.9
EU-25	M+F	NA	NA	11.1	10.5	11.9	11.5	14.2	13.7
	F	NA	NA	11.1	10.5	11.8	11.5	14.2	13.8
	M	NA	NA	11.3	10.5	12.1	11.5	14.2	13.5

Source: Eurostat, LFS (annual averages based on quarterly data).

Note: a) Fraction of those willing to work over total respondents.

b) Fraction of those willing to work over total respondents and non-respondents.

Table 36 – Government expenditure on active labour market policies in the EU-15 as percentage of GDP (unless otherwise stated)						
	1998	1999	2000	2001	2002	2003
(1) Training	---	0.33	---	0.28	0.29	0.28
(2) Job rotation and job sharing	---	0.01	0.01	0.01	0.00	0.00
(3) Employment incentives	---	0.13	0.13	0.14	0.14	0.14
(4) Integration of the disabled	0.10	0.11	0.11	0.11	0.11	0.11
(5) Direct job creation	---	0.21	0.18	0.17	0.16	0.14
(6) Start-up incentives	0.02	0.02	---	0.03	0.02	0.03
(1) to (6): "Active measures"	---	0.80	---	0.73	0.73	0.70
(8) Out-of-work income	---	1.34	---	1.16	1.26	1.34
(9) Early retirement	---	0.11	0.09	0.09	0.09	0.09
(8) to (9): "Passive measures"	---	1.44	---	1.26	1.35	1.43
(2) to (9): Total measures	---	2.24	---	1.98	2.08	2.13
% of "Active measures" in total	---	35.8	---	36.7	35.0	32.8

Source: Eurostat, Labour Market Policy database, August 2005.

102 Martin J (2000), "What works among active labour market policies? Evidence from OECD countries", *OECD Economic Studies*, n°30, pp. 79-112.

103 Walsh K. and Parsons D. (2005), "Active policies and measures: impact on integration and reintegration in the labour market and social life", *Third Research Report on Vocational Education and Training in Europe*, Thessaloniki, CEDEFOP.

104 Koning and Volvaard (2000), Martin (2000), OECD (2001) and Groot et al. (2004).

effects of other policies, notably the replacement rate, duration of unemployment benefit and the employment protection legislation, which all seem to lead to a trade-off between participation and income distribution¹⁰⁵. Although this analysis cannot be taken as conclusive evidence, these results nevertheless suggest that EU Member States can improve participation while maintaining income cohesion by spending/investing in ALMPs of the right sort. As an example, the high level of ALMPs spending in some countries (e.g. in Scandinavia) might be partly to offset their rather generous unemployment benefit systems and to push unemployed individuals back to work (Nickell et al.¹⁰⁶, 2005).

3.3. Quality and productivity at work

Improving quality and productivity at work is one of the three overarching objectives of the Employment Guidelines for the period 2003-2005, in addition to full employment and social cohesion and inclusion. Quality is a complex concept with many interacting facets, such as the working environment, equal opportunities, the reconciliation of working and person-

al life, lifelong learning, health and safety, contractual security and job satisfaction. Bringing the concept of quality of work into operation has posed difficulties. Nonetheless, in 2001 the Council agreed to assess progress using a set of quality indicators founded on the ten dimensions of quality in work identified by the Commission¹⁰⁷ and a progress report was prepared in 2003¹⁰⁸.

There is a positive link, with potentially wide-ranging synergies, between quality and productivity at work. In particular, improvements in work organisation and in working conditions, as well as in the quality and efficiency of investment in human capital and training, are essential for any improvements in productivity.

For an extensive discussion of the quality of work indicators, see COM(2003) 728 final. In this chapter, the analysis uses data for both the EU-15 and the EU-25 separately, reflecting the difficulties in collecting data covering a sufficiently long time span for the new Member States. However, it is interesting to note that the analysis remains broadly unchanged (in qualitative terms) whether considering either the EU-15 or the EU-25.

3.3.1. Human capital investment and lifelong learning

In recent years, some progress has been made in raising the EU average level of participation in lifelong learning¹⁰⁹. Since 1997, the ratio of the adult working-age population (25 to 64 age group) participation in lifelong learning increased from 5.7% to 10.6% in 2004 in the EU-15 (table 37). In the EU-25 (table 38), this indicator has also improved in recent years (though less markedly), increasing from 7.9% in 2000 to 9.9% in 2004. However, after correcting for some statistical breaks, the lifelong learning ratio is estimated to have increased by less than 1 percentage point since 2000. At this pace of progress, the overall target of 12.5% for 2010 in the EU as a whole is unlikely to be reached¹¹⁰.

Although the level of participation in lifelong learning has increased in recent years in many EU Member States, the social return of these active labour market programmes, especially for some disadvantaged groups such as youth and low-skilled workers, remains largely to be evaluated. Moreover, a number of empirical studies have questioned the effectiveness of these programmes¹¹¹.

105 In addition, liberalisation of these policies usually meets strong political and social resistance due to their anticipated impact on income distribution.

106 Nickell S, Nunziata L, and Ochel W. (2005), "Unemployment in the OECD since 1960s. What do we know?", *The Economic Journal*, 115, pp. 1-27.

107 The Employment Committee agreed a list of indicators on quality in work under the ten dimensions. These indicators were approved by the Council and communicated to the Laeken European Council in December 2001: "Indicators of Quality in Work, Report by the Employment Committee to the Council, 14263/01, 23.11.2001. The ten dimensions of quality are: i) *intrinsic job quality*; ii) *skills, lifelong learning and career development*; iii) *gender equality*; iv) *health and safety at work*; v) *flexibility and security*; vi) *inclusion and access to the labour market*; vii) *work organisation and work-life balance*; viii) *social dialogue and worker involvement*; ix) *diversity and non-discrimination*; and x) *overall work performance*.

108 Communication from the Commission to the Council, the European Parliament, the European Economic and Social Committee and the Committee of the Regions, *Improving quality in work: a review of recent progress*, COM(2003) 728 final.

109 A note of caution is necessary. Definitions of lifelong learning vary across Member States. Although they generally include only structured learning (i.e. courses), their contents can vary from a more "leisure" type to studying for a professional qualification.

110 Across the EU, this target has already been achieved in 6 countries (DK, NL, SI, FI, SE and UK).

111 Heckman et al. (1999), "The Economics and Econometrics of Active Labor Market Programs", *Handbook of Labor Economics*, vol. 3a. Goux and Maurin (2000), "Returns to Firm Provided Training: Evidence from French Worker-Firm Matched Data", *Labour Economics*, vol. 7(1), pp. 1-20.

Table 37 – Selected indicators for the EU-15

	1997	1998	1999	2000	2001	2002	2003	2004
Lifelong learning – total (a)	5.7	NA	8.2	8.4	8.3	8.5	9.9	10.6
Lifelong learning – women	5.6	NA	8.5	8.9	8.9	9.1	10.7	11.4
Lifelong learning – men	5.9	NA	7.8	7.9	7.7	7.8	9.1	9.8
Youth education attainment – total (b)	69.6	NA	72.4	73.5	73.3	73.8	73.7	73.8
Youth education attainment – women	71.9	NA	75.0	76.5	76.3	76.8	76.3	77.0
Youth education attainment – men	67.2	NA	69.6	70.5	70.3	70.7	71.0	70.7
Gender pay gap (non adjusted) (c)	16.0	16.0	15.0	16.0	16.0	16.0	16.0	NA
Total employment rate (d)	60.6	61.4	62.6	63.4	64.0	64.2	64.3	64.7
Employment rate – women	50.8	51.6	53.0	54.1	55.0	55.6	56.0	56.8
Employment rate – men	70.6	71.2	72.1	72.8	73.1	72.8	72.7	72.7
Employment rate (15 to 24 years)	37.2	38.2	39.6	40.5	40.9	40.6	39.9	40.0
Employment rate (25 to 54 years)	73.9	74.6	75.7	76.5	77.0	77.1	77.1	77.6
Employment rate (55 to 64 years)	36.4	36.6	37.1	37.8	38.8	40.2	41.7	42.5
Part-time work (e)	16.7	17.3	17.5	17.7	17.9	18.1	18.5	19.4
Fixed-time work (f)	12.4	13.0	13.4	13.7	13.5	13.1	13.1	13.6
Total unemployment rate (g)	9.8	9.3	8.5	7.6	7.2	7.6	8.0	8.1
Unemployment rate – women	11.8	11.2	10.3	9.3	8.7	8.9	9.2	9.3
Unemployment rate – men	8.4	7.8	7.1	6.4	6.1	6.6	7.0	7.1
Total long-term unemployment rate (h)	4.8	4.4	3.9	3.4	3.1	3.1	3.3	3.4
Long-term unemployment rate – women	5.9	5.4	4.8	4.2	3.8	3.7	3.9	4.0
Long-term unemployment rate – men	4.0	3.6	3.2	2.8	2.5	2.6	2.8	3.0
Youth unemployment rate (i)	20.6	19.0	17.1	15.3	15.1	15.6	16.3	16.6
Serious accidents at work – total (j)	100.0	100.0	100.0	98.0	94.0	86.0	NA	NA
Serious accidents at work – women	99.0	100.0	101.0	103.0	100.0	96.0	NA	NA
Serious accidents at work – men	100.0	100.0	100.0	98.0	93.0	88.0	NA	NA
Total early school-leavers (k)	20.6	NA	20.5	19.4	18.9	18.6	18.3	17.8
Early school-leavers – women	18.7	NA	18.5	17.1	16.6	16.2	16.1	15.3
Early school-leavers – men	22.7	NA	22.6	21.7	21.3	21.1	20.4	20.4
At risk of poverty rate before social transfers – total (l)	25.0	24.0	24.0	23.0	24.0	NA	NA	NA
At risk of poverty rate after social transfers – total	16.0	15.0	15.0	15.0	16.0	NA	NA	NA

Source: Eurostat, Structural and Employment indicators.

Note: (a) Adult participation in education and training, percentage of the population aged 25-64 participating in education and training over the four weeks prior to the survey; (b) Percentage of the total population aged 20 to 24 having completed at least upper secondary education; (c) Difference between men's and women's average gross hourly earnings as a percentage of men's gross hourly earnings; (d) Employed persons aged 15-64 as a percentage of the total population of the same age group; (e) Part-time workers as percentage of total employment; (f) Percentage of employees with temporary contracts; (g) Unemployed persons as a percentage of the total active population; (h) Long-term unemployed (12 months and more) as a percentage of the active population; (i) Unemployed population aged 15 to 24 as a percentage of the total population of the same age group; (j) Index of the number of serious accidents at work per 100 000 persons in employment (1998=100); (k) Percentage of the population aged 18-24 with at most lower secondary education and not in further education or training; (l) Percentage of persons with an equivalised disposable income, before social transfers, below the risk-of-poverty threshold, set at 60% of the median equivalised disposable income (after social transfers). For EU aggregates, this indicator is computed as a population weighted average of available national data.

Table 38 – Selected indicators for the EU-25

	1997	1998	1999	2000	2001	2002	2003	2004
Lifelong learning – total (a)	NA	NA	NA	7.9	7.8	7.9	9.2	9.9
Lifelong learning – women	NA	NA	NA	8.4	8.4	8.5	9.9	10.7
Lifelong learning – men	NA	NA	NA	7.4	7.2	7.2	8.4	9.0
Youth education attainment – total (b)	NA	NA	74.8	76.4	76.5	76.5	76.5	76.7
Youth education attainment – women	NA	NA	77.3	79.2	79.0	79.5	79.1	79.6
Youth education attainment – men	NA	NA	72.2	73.5	73.4	73.6	74.0	73.8
Gender pay gap (non adjusted) (c)	16.0	17.0	16.0	16.0	16.0	16.0	15.0	NA
Total employment rate (d)	60.6	61.2	62.0	62.4	62.8	62.8	62.9	63.3
Employment rate – women	51.1	51.8	52.9	53.6	54.3	54.7	55.0	55.7
Employment rate – men	70.2	70.6	71.0	71.2	71.3	71.0	70.8	70.9
Employment rate (15 to 24 years)	36.4	37.1	37.8	38.1	38.1	37.5	36.9	36.8
Employment rate (25 to 54 years)	74.3	74.9	75.6	76.0	76.3	76.3	76.4	76.8
Employment rate (55 to 64 years)	35.7	35.8	36.2	36.6	37.5	38.7	40.2	41.0
Part-time work (e)	16.0	15.9	16.1	16.2	16.3	16.6	17.0	17.7
Fixed-time work (f)	11.7	11.8	12.3	12.6	12.9	12.9	13	13.7
Total unemployment rate (g)	NA	9.5	9.1	8.6	8.4	8.7	9.0	9.0
Unemployment rate – women	NA	11.3	10.8	10.2	9.9	10.0	10.2	10.2
Unemployment rate – men	NA	8.0	7.7	7.3	7.3	7.7	8.0	8.1
Total long-term unemployment rate (h)	5.0	4.5	4.1	3.9	3.8	3.9	4.0	4.1
Long-term unemployment rate – women	6.1	5.5	5.0	4.8	4.6	4.6	4.7	4.7
Long-term unemployment rate – men	4.1	3.6	3.4	3.3	3.2	3.3	3.5	3.6
Youth unemployment rate (i)	NA	19.4	18.4	17.4	17.6	18.1	18.6	18.7
Serious accidents at work – total (j)	NA	100.0	100.0	99.0	95.0	88.0	NA	NA
Serious accidents at work – women	NA	100.0	101.0	104.0	101.0	97.0	NA	NA
Serious accidents at work – men	NA	100.0	100.0	98.0	94.0	89.0	NA	NA
Total early school-leavers (k)	NA	NA	NA	17.3	16.9	16.6	16.1	15.7
Early school-leavers – women	NA	NA	NA	15.2	14.7	14.3	14.1	13.3
Early school-leavers – men	NA	NA	NA	19.4	19.1	18.9	18.1	18.1
At risk of poverty rate before social transfers – total (l)	NA	NA	NA	NA	24.0	NA	NA	NA
At risk of poverty rate after social transfers – total	NA	NA	NA	NA	15.0	NA	NA	NA

Source: Eurostat, Structural and Employment indicators.

Note: See table 37 for legend.

Table 39 – Employment rates among individuals aged 15-64 by highest level of education attained (percentages)

		1998			2001		
		M+F	F	M	M+F	F	M
EU-15	Total	61.4	51.6	71.2	64.1	55.0	73.2
	0-2	48.1	34.4	62.4	49.3	37.5	62.0
	3-4	64.9	55.9	73.6	70.3	63.3	77.1
	5-6	78.7	73.1	84.3	82.9	78.5	86.9
EU-25	Total	61.2	51.9	70.6	62.9	54.3	71.4
	0-2	NA	NA	NA	46.7	35.8	58.5
	3-4	NA	NA	NA	68.8	61.9	75.5
	5-6	NA	NA	NA	83.0	78.7	87.0
		2003			2004		
		M+F	F	M	M+F	F	M
EU-15	Total	64.4	56.1	72.8	64.8	57.0	72.7
	0-2	49.5	38.1	61.6	49.2	38.0	60.8
	3-4	70.2	63.8	76.4	70.1	63.8	76.3
	5-6	82.5	78.7	86.1	82.5	78.9	86.0
EU-25	Total	63.0	55.1	70.9	63.3	55.8	70.9
	0-2	46.6	36.2	57.8	46.2	36.0	57.0
	3-4	68.4	61.9	74.7	68.3	61.8	74.6
	5-6	82.5	78.8	86.1	82.5	78.9	86.0

Source: Eurostat, LFS (annual averages based on quarterly data).

Note: 0-2: Pre-primary, primary and lower secondary education – levels 0-2 (ISCED 1997).

3-4: Upper secondary and post-secondary non-tertiary education – levels 3-4 (ISCED 1997).

5-6: Tertiary education – levels 5-6 (ISCED 1997).

The youth education attainment level (measured as the percentage of the total population aged 20 to 24 having completed at least upper secondary education) has continued to rise in the EU. This indicator increased by a full 4 percentage points in the EU-15

between 1997 and 2004, reaching 73.8%¹¹². The EU enlargement of May 2004 has increased by about 3 percentage points the average level of youth education attainment, reflecting the overall favourable position in the new Member States. The above-average

performance of new Member States as regards youth education attainment levels contrasts with their below-average performance in other EES targets, notably those related to employment rates. Among the 25 EU Member States, nine had already attained in 2004 the youth education attainment target of 85%¹¹³ for 2010, including five new Member States. However, a number of Member States remain in a particularly unfavourable position¹¹⁴. Where gender mainstreaming is concerned, the existence of a positive gap favourable to women across Member States should be noted. Overall, the gender gap favourable to women reached over 5 percentage points in 2004 in the EU-25 (table 38).

Despite the general increase in education attainment levels across the EU, earnings data suggest that the degree of inequality¹¹⁵ has increased between the 1990s and the early 2000s in a number of EU Member States, particularly in DE, ES, FR, IT, and PL (see Chapter 4).

The importance of raising the education level of the (working-age) population in general and of the youth population in particular, aiming to equip all individuals with the skills required for a modern workforce in a knowledge-based society, should not be underestimated. Furthermore, the quality of the labour supply and the willingness of individuals to participate in the labour market are highly correlated with education attainment levels (table 30). In this respect, any ongoing rise in education levels is likely to contribute towards reaching the employment rate targets set for 2010.

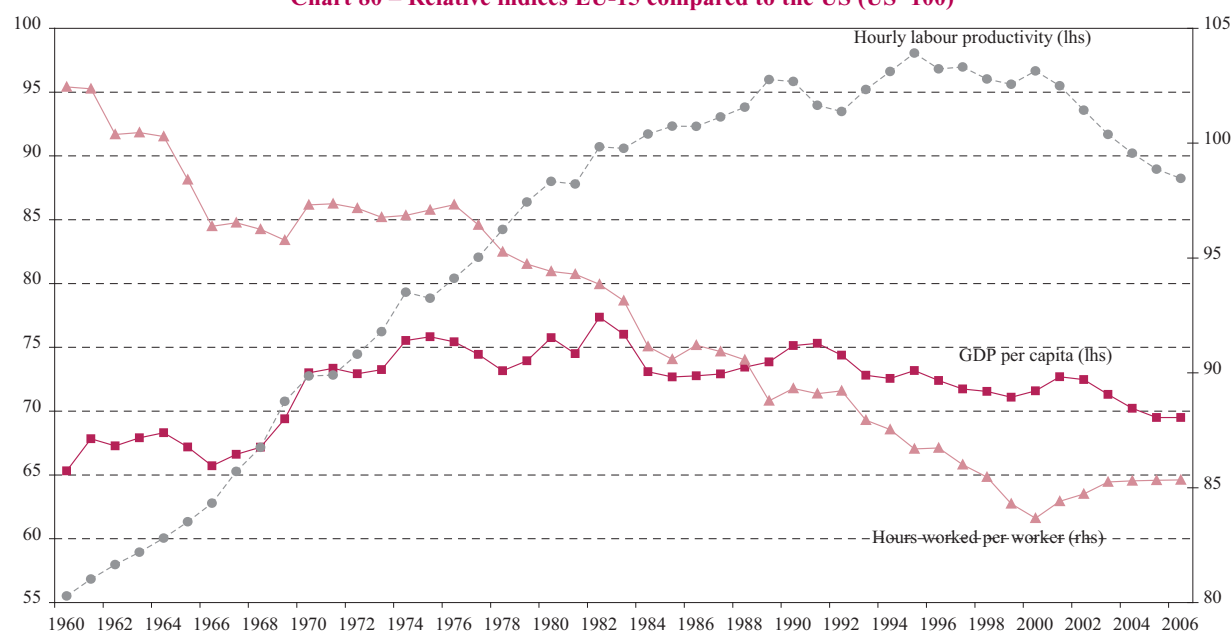
112 However, and particularly for some Member States, breaks in series affect comparability.

113 CZ, IE, LT, AT, PL, SI, SK, FI, and SE.

114 MT, PT, ES and IT.

115 As measured by the ratio between decile 9 to decile 1 of the earnings distribution.

Chart 80 – Relative indices EU-15 compared to the US (US=100)



Source: Ameco, GGDC-OECD, and DG EMPL calculations.

3.3.2. Productivity developments

This section looks at aggregate productivity developments in the EU and the United States, suggesting some major reasons for the different trends observed in recent years¹¹⁶. It also projects developments up to 2006 based on the Commission's Spring 2005 forecast¹¹⁷.

3.3.2.1. A long-term perspective

The process of real convergence between the EU and the US in terms of per capita GDP (measured at purchasing power standard (PPS) prices) petered out around the early 1970s, following the rapid progress achieved after the Second World War. In terms

of per capita GDP at PPS, the EU-15 has made no significant progress since the 1970s in closing the gap, which hovers at around 30 percentage points (chart 80). This gap can be largely explained by lower total labour input (both a lower employment rate and fewer hours worked per worker) and lower productivity per hour. A breakdown suggests that roughly two-thirds of the differential is due to the under-utilisation of labour, while the other third is related to lower hourly labour productivity.

However, the lack of progress in relative GDP per capita over the past thirty years or so does not mean that the EU has a substantially lower welfare level than the US and has been unable to catch up. The GDP per capita gap

mainly reflects the reduction in the average number of hours worked per worker in the EU-15, and only to a lesser extent the lag in terms of hourly productivity. Labour productivity, measured as GDP per hour worked, has increased much faster in the EU-15 than in the United States. EU-15 hourly productivity, which stood at about 65% of the US level in the mid-1960s, now stands at roughly 90% (chart 81).

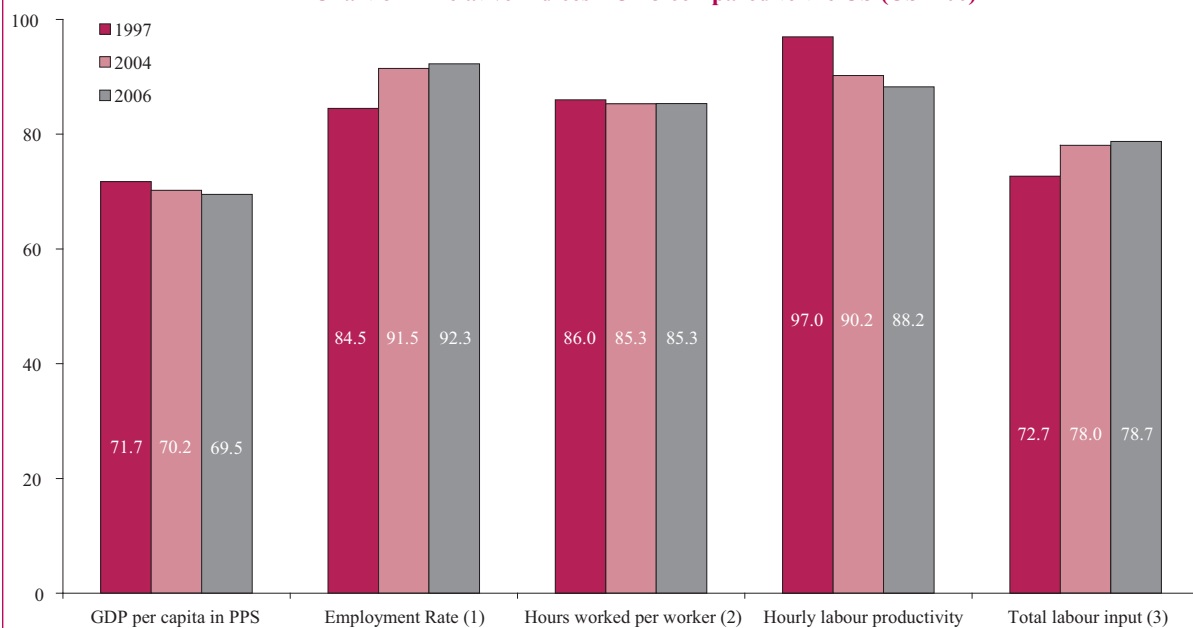
When compared with the US, the largest Member States of the EU-15 have tended to show a greater willingness to trade off income for leisure¹¹⁸. Had relative hours worked per worker remained the same, the EU would, other things being equal, now have a per capita income level closer to that

116 In the short- to medium-term, productivity and employment display significant co-movements, reflecting cyclical conditions in the economy. It is only over the longer term that these two variables can be seen as independent, according to both theoretical considerations and empirical evidence (see the "European Economy: 2004 Review", European Commission).

117 Data for annual working hours per worker is taken from the Groningen Growth and Development Centre (GGDC) database. It is also assumed that over the period 2005-2006 the average annual hours worked per worker will stabilise at their 2004 values.

118 As an example, and according to the GGDC database, between 1980 and 2004 the average annual number of hours worked per person employed fell by more than 10% in DE, FR, ES, and the NL, and by close to 8% in IT and the UK. In the US over the same period, the average annual number of hours worked per person employed fell only by almost 2%.

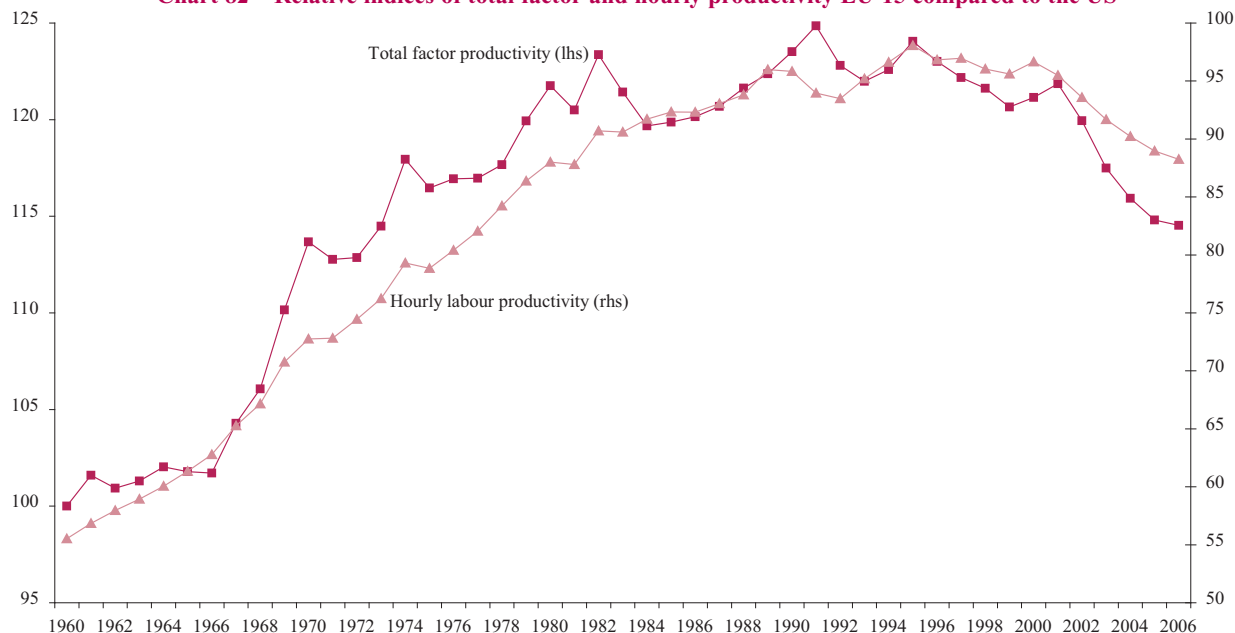
Chart 81 – Relative indices EU-15 compared to the US (US=100)



Source: Ameco, GGDC-OECD, and DG EMPL calculations.

Note: (1) Calculated as: Employment rate = $100 \times \text{GDP per capita} / \text{Labour productivity per person employed}$. (2) Calculated as: Hours worked per worker = $100 \times \text{Labour productivity per person employed} / \text{Hourly labour productivity}$. (3) Calculated as: Total labour supply = Employment Rate * Hours worked per worker.

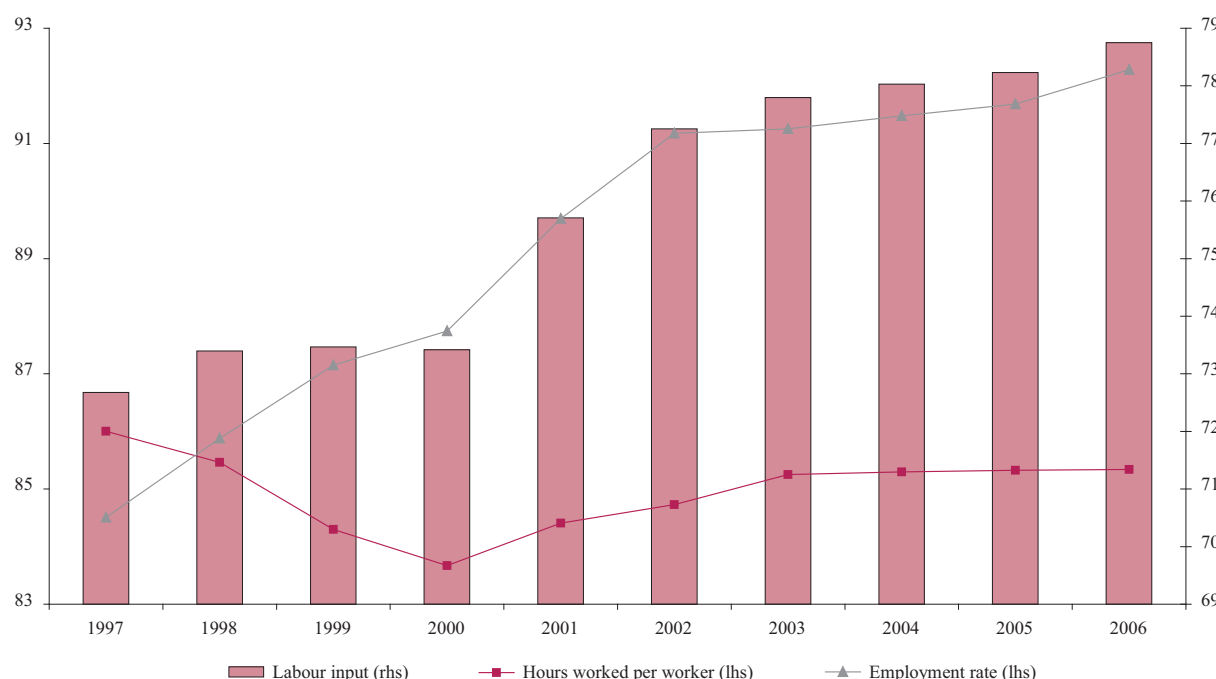
Chart 82 – Relative indices of total factor and hourly productivity EU-15 compared to the US



Source: Ameco, GGDC-OECD, and EMPL calculations.

Note: Total factor productivity: EU/US (1960=100).

Chart 83 – Determinants of total labour input, EU-15 compared to the US (US=100)



Source: Ameco, GGDC-OECD, and DG EMPL calculations.

of the US. This assumes, of course, that neither the higher unemployment rate in the EU nor the higher capital to labour ratio played a major role in raising the measured (hourly) labour productivity¹¹⁹. The close link between relative hourly labour productivity and relative total factor productivity (chart 82) does not call for rejecting this assumption.

Two major competing causes are usually put forward to explain the decline in the average number of hours worked per worker. Firstly, the preferences of workers and, secondly, the effects of increasing tax distortions faced by workers (Prescott¹²⁰, 2003). In the EU, there is evidence linking labour taxation to labour supply.

Mourre (2004) relates labour tax wedges to the presence of a positive break in aggregate employment demand after 1997. Econometric estimates (Nickell et al., 2003) find a significant role for taxes in explaining the decline in hours worked. More specifically, the evolution of tax rates may explain about a third of the decrease in hours worked in the EU.

3.3.2.2. A medium-term perspective

In recent years, some progress has been achieved in raising total labour input in the EU compared to the US. Between 1997 and 2004, total labour input rose overall by 6 percentage points in the EU-15 relative to the US (see chart 81). This improvement

results from an increase in the employment rate in the EU-15 relative to the US (chart 83), which more than offset the continuous reduction (although at a reduced pace) in the number of hours worked per worker. The decline in average annual hours worked per worker in the EU-15 relative to the US seems to have levelled off after 2000.

The rise in the employment rate in the EU means that nearly 13 million jobs were created between 1997 and 2004 (a cumulative increase of about 8.5%). However, nearly all net job creation took place in the first part of that period, between 1997 and 2001. Subsequently, employment creation in the EU-15, although remaining posi-

119 Blanchard (2004), "The Economic Future of Europe", *Journal of Economic Perspectives*, v°18, No 4. The author argues that two types of causes might have "artificially" raised the measured level of (hourly) labour productivity in the EU versus the US: i) relatively high unemployment that disproportionately affects low-skilled workers, together with a higher ratio of the minimum wage to the average wage (i.e. wage compression), excluding more low-skilled workers from the labour force; and ii) due to higher labour costs in the EU, firms have adopted more capital-intensive technologies, increasing measured productivity.

120 Prescott (2003), "Why do Americans Work so much more than Europeans?", *Federal Reserve Bank of Minneapolis*.

tive, was much slower principally because of the lack of sufficient economic growth.

With respect to productivity, *it is worrying to see that since 1995 the European Union's relative position vis-à-vis the United States has deteriorated significantly*¹²¹. After having peaked in the mid-1990s at around 97% of the US level, EU-15 labour productivity per hour is projected to decline to around 88% of the US level by 2006, which is close to its relative level in the late 1970s/early 1980s. The decline in EU labour productivity growth rates since the mid-1990s can be attributed to lower investment per employee and to a slowdown in total factor productivity growth. The former can be partially explained by a higher rate of job creation, involving a high proportion of low-productivity jobs. The latter has been associated with the following factors: (i) low investment in R&D¹²²; (ii) the difficulty in the EU of reorienting outlays towards those sectors with high productivity growth prospects; (iii) the lower productivity performance and size of information and communications technology (ICT) industries (including office equipment and semiconductors) and the lower productivity performance in ICT using

services (such as the wholesale and retail trade and financial services); and (iv) the difficulty in producing and absorbing new, more knowledge-based technologies.

Recent research suggests that at the most one third of the productivity slowdown is due to the increased employment of low-skilled people and seems to confirm that the slowdown in productivity is mostly due to a slowdown in total factor productivity¹²³.

In an OECD paper on ICT and economic growth¹²⁴, encompassing a survey of the relevant literature, there is ample evidence suggesting that the use of ICT does have a significant impact on the productivity of firms, *but primarily, or only, when accompanied by other [organisational] changes and investments*. This statement is in line with the results of other empirical studies suggesting that ICT primarily affects firms where skills have been improved and/or organisational changes have been introduced. Therefore, in order to reap the full benefits of ICT, firms have to carry out complementary actions such as training their staff or introducing organisational changes. *These complementary investments are often much more costly than the initial outlays in*

*ICT investment goods*¹²⁵. The evidence suggests that for ICT to be developed and used effectively, and network externalities to materialise¹²⁶, the skills and competences of workers have to be raised through a variety of means, such as formal education, vocational training and lifelong learning (see the Special Focus on ICT, organisational change and productivity at the end of this chapter).

3.4. Strengthening social cohesion and inclusion

A social market economy should endeavour to have an adequate level of social protection delivered by a well-designed welfare system so as to minimise efficiency costs. Therefore, an optimum welfare system should aim, among other things, to reduce poverty, to minimise the impact of income uncertainty/volatility, to facilitate structural change and to stabilise aggregate demand, all at a minimum cost in terms of economic efficiency. A well-designed welfare/social protection system should thus not only be effective in *combating and preventing poverty but also contribute to increasing labour supply, through developing people's capacity to work and a judicious use of the "make work pay" principle*¹²⁷.

121 "Commission Staff Working Document in support of the report from the Commission to the Spring European Council, 22-23 March 2005, on the Lisbon Strategy of economic, social and environmental renewal", SEC(2005) 160.

122 In 2003, the EU spent on average 1.9% of GDP on R&D (although ranging from 0.3% to 4.3% of GDP across Member States), barely up from the level at the time of the launch of the Lisbon strategy. This compares with a collective EU target for investment in R&D of 3% of GDP. Moreover, only around 55% of research spending in the EU is financed by industry. In 2003, expenditure on R&D amounted to 2.6% and 3.2% of GDP in the US and Japan, respectively.

123 Denis et al. (2004), "An analysis of EU and US production developments (a total economy and industry level perspective)", *DG ECFIN, Economic Papers* No 208.

Denis et al. (2005), "The Lisbon Strategy and the EU's structural productivity problem", *DG ECFIN, Economic Papers* No 221.

Duchêne and Hassan (2005), "Key Figures 2005 on Science, Technology and Innovation -Towards a European Knowledge Area", European Commission.

124 OECD (2003), "ICT and Economic Growth, evidence from OECD countries, industries and firms".

125 Brynjofsson and Hitt, (2000), "Beyond Computation: Information Technology, Organizational Transformation and Business Performance", *Journal of Economic Perspectives*, 14(4) pp. 23-48. These authors suggest that USD 1 of ICT investment may be associated with USD 9 of investment in intangible assets, such as skills and organisational changes.

126 It takes time to build networks that are sufficiently large to have an effect on the economy. In this respect, the US may have benefited from ICT investment ahead of other OECD countries.

127 Communication from the Commission to the Council, the European Parliament, the European Economic and Social Committee and the Committee of the Regions – *Joint Report on Social Protection and Social Inclusion*, SEC (2005).

In a rapidly changing world, social protection systems need to be responsive to wider social and cultural trends, such as those resulting from demographic, economic and socio-cultural factors. The rapid ageing of EU societies, resulting from the combination of declining birth rates and the rise in life expectancy, poses a major challenge to the sustainability of social protection systems, notably with regard to health-care and maintenance of adequate income levels. The interaction of these factors is producing a dramatic change in the size and age composition of Europe's population¹²⁸. With unchanged policies, it is estimated that the impact of ageing will, on the one hand, reduce the potential growth rate of the EU from the present 2-2.25% per year to around 1.25% by 2040¹²⁹ and, on the other, bring about a dramatic increase in pension and healthcare spending, varying from 4 to 8 percentage points of GDP¹³⁰. Moreover, enlargement has made the financial needs related to EU cohesion more pronounced. Higher net migration flows into the EU could help address the imbalance arising from demographic changes, offsetting labour supply shortages and improving the financial sustainability of pension systems, provided that the necessary conditions for the integration of immigrants into the formal labour market, as well as their economic and social integration, are put in place.

In order to meet these challenges, social systems need to be modernised. Existing social protection systems have mostly been devised in times of near

full employment and favourable demographic conditions. The political challenge now is to offer citizens a credible "new deal" that allows for an optimal balance between, on the one hand, security and solidarity, and, on the other, an adequate level of flexibility¹³¹.

As regards the strengthening of social cohesion and inclusion, progress is difficult to assess (as is the case for quality in work) due to lack of data. The available data on poverty and social exclusion only cover a limited time span and do not address the situation of the most exposed groups, especially immigrants, ethnic minorities, people with disabilities, the homeless, and other risk groups, although this situation will improve in the future following recent investment in statistical capacity-building¹³². Moreover, the available indicators can be difficult to interpret at EU level as they are typically designed to reflect the specific national situations.

Harmonised data on income, poverty and social exclusion are only available for EU-15 Member States since the mid-1990s. Following enlargement and during the transition to a new data source, information is being compiled from the best available national sources. Data on social cohesion and inclusion are usually derived from surveys on private households (as for labour market data), hence they cannot reflect the situation of certain highly vulnerable groups such as the homeless and persons in institutionalised care. In addition, sample size

issues may restrict the robustness of data concerning immigrants, ethnic minorities and other risk groups. Ideally, social cohesion should be seen in a broad context: having a low income may not necessarily imply having low living standards (e.g. assistance from family), and there are aspects of social inclusion which cannot be measured in monetary terms.

The following discussion assesses progress in strengthening social cohesion and inclusion in a number of specific areas, notably income distribution and the risk of poverty, gender equality, people at a disadvantage in the labour market, and regional labour market disparities.

3.4.1. Income distribution and the risk of poverty

In the EU-15 between 1995 and 2001, the risk-of-poverty rate¹³³ hovered at around 15 percent, although there is some evidence of an increase in living standards over the period when anchoring the risk-of-poverty threshold at a point in time and comparing that to current incomes¹³⁴. There is now a risk that the 2001-2003 economic slowdown, accompanied by rising unemployment and fewer job opportunities, will put more people at risk of poverty and social exclusion and worsen the position of those who are already affected. The challenge is even greater in many of the new Member States, where economic restructuring requires appropriate social poli-

128 *Facing the Challenge – The Lisbon strategy for growth and employment* (2004), Report from the High Level group chaired by Wim Kok.

129 "The EU economy: 2002 review", European Economy No 6/2002, pp. 192.

130 "The impact of ageing populations on public finances", EPC/ECFIN/407/04 2003.

131 "Commission Staff Working Document in support of the report from the Commission to the Spring European Council, 22-23 March 2005, on the Lisbon Strategy of economic, social and environmental renewal", SEC (2005) 160.

132 For example, the launch of data collection under the EU-SILC regulation No 1177/2003.

133 The risk-of-poverty rate measures the share of the population (as a percentage) living in households with a disposable income below 60% of the national median. The EU aggregate is computed as a population-weighted average of national values. This is therefore a relative concept, depending on national poverty thresholds.

134 Such risk-of-poverty rate decreased from 15% in 1998 to 12% in 2001.

Table 40 – Selected measures of monetary poverty and social exclusion in 2003 (or the latest year for which data are available)

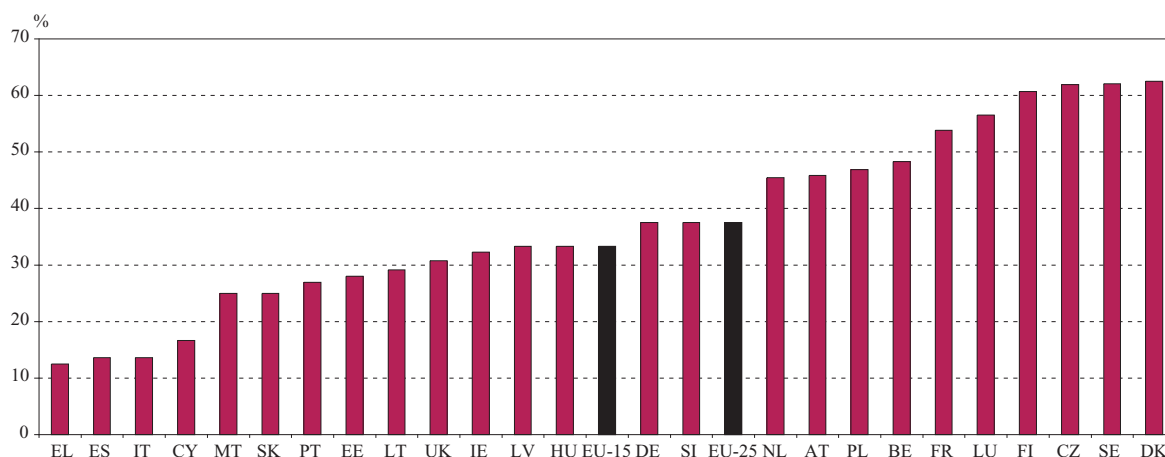
	Gini coefficient	Risk of poverty rate before social transfers (a)	Risk of poverty rate after social transfers	Risk of poverty rate after social transfers		GDP per capita (c)
				Employed	Unemployed	
BE	28.0	29.0	15.0	4.0	32.0	117.7
CZ	25.0	21.0	8.0	NA	NA	68.7
DK	25.0	32.0	12.0	NA	NA	122.0
DE	28.0	24.0	15.0	4.0	37.0	108.0
EE	34.0	25.0	18.0	NA	NA	48.7
EL	35.0	24.0	21.0	12.0	39.0	81.0
ES	31.0	22.0	19.0	10.0	37.0	97.7
FR	27.0	26.0	12.0	8.0	31.0	110.9
IE	30.0	31.0	21.0	7.0	54.0	132.4
IT	29.0	22.0	19.0	10.0	51.0	106.8
CY	27.0	18.0	15.0	NA	NA	81.3
LV	34.0	24.0	16.0	NA	NA	41.0
LT	30.0	24.0	17.0	NA	NA	45.8
LU	28.0	23.0	10.0	8.0	48.0	214.6
HU	24.0	15.0	10.0	NA	NA	60.5
MT	30.0	20.0	15.0	NA	NA	73.0
NL	28.0	22.0	12.0	8.0	18.0	120.9
AT	27.0	24.0	13.0	6.0	23.0	121.9
PL	31.0	32.0	17.0	NA	NA	45.9
PT	37.0	26.0	19.0	12.0	38.0	74.7
SI	22.0	16.0	10.0	NA	NA	76.7
SK	31.0	28.0	21.0	NA	NA	52.3
FI	26.0	28.0	11.0	5.0	31.0	113.6
SE	23.0	29.0	11.0	NA	NA	115.2
UK	35.0	26.0	18.0	6.0	54.0	119.1
EU-25	29.0	24.0	15.0	NA	NA	100.0
EU-15	30.0	24.0	16.0	7.0	39.0	109.2
EU-10 (b)	28.0	NA	15.0	NA	NA	52.7

Source: Eurostat, Income and Living Conditions Statistics, and DG ECFIN Ameco.

Note: Data for 2003 except 2002 (FR, LV, LT, HU, NL, PL, SI, SE, EU-10), 2001 (IT, PT, EU-25, EU-15), 2000 (MT). (a) Risk-of-poverty rate: the share of persons with an equivalised disposable income below 60% of the national median equivalised disposable income. This share is calculated before social transfers (original income including pensions but excluding all other social transfers) and after social transfers (total income). (b) CZ, EE, CY, LV, LT, HU, MT, PL, SI, SK. (c) Gross domestic product at current market prices per head of population (PPS; EU-25=100).

Chart 84 – Impact of social transfers (other than pensions) in the reduction of the risk-of-poverty rate

In percentage of the poverty rate before transfers for 2003 or the latest year available



Source: Eurostat.

cies to limit the number of people at risk of poverty.

In an enlarged EU where some of the new Member States have income levels below half of the average for the EU-15, differences in economic circumstances have clearly widened (table 40). Although average income levels in new Member States are considerably below the average for the EU-15, due to the relative nature of the indicators employed, there is no evidence of any significant difference in income inequality or risk of poverty between new and old Member States. Using either the poverty rate or the Gini¹³⁵ coefficient, there are apparently no significant differences between new and old Member States. In the EU, the poverty rate ranges from a minimum of 8% in the Czech Republic to a maximum of 21% in Greece, Ireland and Slovakia.

As evidenced in table 40, social transfers (other than pensions) play a major role in reducing income inequalities, significantly reducing the average poverty rate in the EU by about 9 percentage points (or about one third of the poverty rate before transfers). However, there are large differences in the social transfer systems as regards their ability to reduce the poverty risk (chart 84). In “southern” Member States, social transfers reduce the poverty risk by less than 30 percent (EL, ES, IT, MT, CY and PT), while in other countries they cut the poverty rate by more than 50 percent (FR, LU, FI, CZ, SE and DK). This may in part be due to a greater focus placed in “southern” countries on care in the family/community than on institutionalised care arrangements provided by public authorities.

As shown in table 40, moving from unemployment into employment low-

ers considerably the likelihood of being exposed to the risk of poverty. This is particularly true for persons living in households where the work intensity of other members is low. Employment is a key factor for social inclusion, not only because it raises income but also because it can promote social inclusion *per se* and personal development/advancement in a professional career. Employment also contributes to maintaining adequate living standards in old age through the accrual of entitlement to pension benefits.

3.4.2. Gender equality

According to the Employment Guideline¹³⁶ on gender equality: *Member States will, through an integrated approach combining gender mainstreaming and specific policy actions, encourage female labour market participation and achieve a substantial*

135 The Gini coefficient is a measure of inequality in the distribution of income. It is half the absolute mean difference in incomes between each pair of individuals, relative to mean income. Plotting a Lorenz curve gives it an intuitive graphical interpretation (“Microeconomic Theory”, Layard and Walters, pp. 49).

136 Specifically, the sixth Employment Guideline for 2003-2005.

Table 41 – Gender gaps

		1997	1998	1999	2000	2001	2002	2003	2004
EU-15	Employment rate gap (a)	19.8	19.6	19.1	18.7	18.1	17.2	16.7	15.9
	Unemployment rate gap (a)	-3.4	-3.4	-3.2	-2.9	-2.6	-2.3	-2.2	-2.2
	Pay gap (b)	16.0	16.0	15.0	16.0	16.0	16.0	16.0	NA
EU-25	Employment rate gap (a)	19.1	18.8	18.1	17.6	17.0	16.3	15.8	15.2
	Unemployment rate gap (a)	NA	-3.3	-3.1	-2.9	-2.6	-2.3	-2.2	-2.1
	Pay gap (b)	16.0	17.0	16.0	16.0	16.0	16.0	15.0	NA

Source: Eurostat, Structural Indicators.

Note: (a) Difference between men's and women's rates; (b) Difference between men's and women's average gross hourly earnings as a percentage of men's gross hourly earnings.

reduction in gender gaps in employment rates, unemployment rates and pay by 2010.

Table 41 suggests that since the launch of the EES in 1997 some progress has been achieved in reducing both the employment and unemployment rate gender gaps, but that no progress has been made in reducing the (unadjusted) gender pay gap¹³⁷. Progress in reducing the employment rate gap is likely to be related (at least in part) to the trend for higher female labour force participation, and the impact of active labour market policies.

An unemployment gap equation – defined as the difference between the female and the total unemployment rates – is estimated for the EU-15¹³⁸ over the period 1985-2004 (for more details see Annex II). The results suggest that: i) the gap between female and total unemployment rates is countercyclical; and ii) this gap has narrowed significantly since the beginning of the EES.

3.4.3. Long-term unemployment

Long-term unemployment¹³⁹ is a particular concern of the EES due to the evidence linking it to a number of problems such as social exclusion, poverty and low productivity growth (or poverty traps). In the Employment Guidelines¹⁴⁰, Member States are asked to ensure that: i) *every unemployed person is offered a new start before reaching [...] 12 months of unemployment in the case of adults in the form of training, retraining, work practice, or other employability measure, combined where appropriate with ongoing job search assistance*; ii) *by 2010, 25% of the long-term unemployed participate in an active measure [...], with the aim of achieving the average of the three most advanced Member States*.

In the EU-15, despite the economic slowdown of 2001-2003, significant progress has been achieved in reducing the long-term unemployment rate since the onset of the EES (table 42 and chart 70). Among all Member States, some

have been particularly successful in reducing it by more than 2 percentage points, notably ES, IE, IT, LV, HU, and FI. In some Member States, notably SK and PL, the long-term unemployment rate is above 10% and has increased since 1999. Rates are also above the EU-25 average in DE, EE, EL, LT and LV.

Developments in the long-term unemployment gap – defined as the difference between the total and the long-term unemployment rates – for the EU-15 in the period 1985-2004 suggest that: i) the gap between the total and the long-term unemployment rates is likely to be countercyclical; and ii) this gap has narrowed significantly since the onset of the EES.

3.4.4. Youth unemployment

Although no specific employment rate target is set for younger workers in the EU, issues related to youth unemployment¹⁴¹ are specifically addressed by a number of Employment Guidelines¹⁴²:

137 The unadjusted gender pay gap does not use econometric techniques to correct for differences due to factors such as age, experience, education or occupation.

138 EU15, excluding Luxembourg.

139 Unemployed for 12 months or more.

140 Specifically, the first Employment Guideline for 2003-2005.

141 Between 15 and 24 years old.

142 Specifically, the first, fourth and seventh Employment Guidelines for 2003-2005.

Table 42 – Long-term unemployment rate

		1997	1998	1999	2000	2001	2002	2003	2004
EU-15	M+F	4.8	4.4	3.9	3.4	3.1	3.1	3.3	3.4
	F	5.9	5.4	4.8	4.2	3.8	3.7	3.9	4.0
	M	4.0	3.6	3.2	2.8	2.5	2.6	2.8	3.0
EU-25	M+F	5.0	4.5	4.1	3.9	3.8	3.9	4.0	4.1
	F	6.1	5.5	5.0	4.8	4.6	4.6	4.7	4.7
	M	4.1	3.6	3.4	3.3	3.2	3.3	3.5	3.6

Source: Eurostat.

Table 43 – Youth unemployment rate

		1997	1998	1999	2000	2001	2002	2003	2004
EU-15	M+F	20.6	19.0	17.1	15.3	15.1	15.6	16.3	16.6
	F	23.0	21.3	19.3	17.1	16.8	16.7	16.9	17.3
	M	18.4	17.0	15.2	13.7	13.6	14.7	15.9	16.0
EU-25	M+F	NA	19.4	18.4	17.4	17.6	18.1	18.6	18.7
	F	NA	21.6	20.3	19.0	19.2	19.1	19.2	19.3
	M	NA	17.6	16.8	16.0	16.3	17.3	18.2	18.1

Source: Eurostat.

Table 44 – Early school-leavers (percentage of the total population aged 18-24 with at most lower secondary education and not in further education or training)

		1997	1998	1999	2000	2001	2002	2003	2004
EU-15	M+F	20.6	NA	20.5	19.4	18.9	18.6	18.3	17.8
	F	22.7	NA	22.6	21.7	21.3	21.1	20.4	20.4
	M	18.7	NA	18.5	17.1	16.6	16.2	16.1	15.3
EU-25	M+F	NA	NA	NA	17.3	16.9	16.6	16.1	15.7
	F	NA	NA	NA	19.4	19.1	18.9	18.1	18.1
	M	NA	NA	NA	15.2	14.7	14.3	14.1	13.3

Source: Eurostat.

i) Member States will ensure that every unemployed person is offered a new start before reaching six months of unemployment in the case of young people [...]; ii) by 2010, at least 85% of 22-year olds in the European Union

should have completed upper secondary education; and iii) policies will aim to achieve by 2010 an EU average rate of no more than 10% early school leavers.

In the EU-15, despite the economic slowdown of 2001-2003, limited progress has been achieved in reducing the youth unemployment rate since the onset of the EES (table 43). As with many labour market variables, youth unemployment has a marked gender dimension. Although a positive gap still persists between the male and female youth unemployment rates, it has narrowed considerably in recent years. Among all Member States, some have been particularly successful in bringing down the total youth unemployment rate by more than 3 percentage points, notably ES, IE, IT, LT, LV, and HU. Rates are above the EU-25 average in twelve Member States¹⁴³.

Developments in the youth unemployment gap – defined as the difference between youth and total unemployment rates – for the EU-15 in the period 1985-2004 suggest that: i) the gap between youth and total unemployment rates is countercyclical; and ii) this gap has narrowed significantly since the onset of the EES.

3.4.5. People at a disadvantage in the labour market

Under the Employment Guidelines¹⁴⁴, Member States are asked to *foster the integration of people facing particular difficulties on the labour market, such as early school leavers, low-skilled workers, people with disabilities, immigrants, and ethnic minorities, by developing their employability, increasing job opportunities and preventing all forms of discrimination against them.*

143 BE, CZ, EE, EL, ES, FR, IT, LT, MT, PL, SK and FI.

144 Specifically, the seventh Employment Guideline for 2003-2005.

Table 45 – Unemployment rates per nationality (aged 15-64)

			1998	2001	2003	2004
EU-15	non-nat.	women	21.9	16.0	17.0	17.9
		men	20.0	15.2	17.2	17.3
	nat.	women	11.1	7.6	8.2	8.7
		men	8.4	5.9	7.1	7.5
EU-25	non-nat.	women	NA	14.6	16.8	17.8
		men	NA	14.2	16.9	17.1
	nat.	women	NA	7.9	8.4	9.9
		men	NA	6.4	7.3	8.7

Source: Eurostat.

Note: Nat.: EU Nationals; Non-Nat.: non-EU Nationals (EU-15).

Annual values are an unweighted average of the available quarterly data.

Table 46 – Employment rates per nationality (aged 15-64)

			1998	2001	2003	2004
EU-15	non-nat.	women	35.3	41.0	43.3	43.1
		men	59.9	64.9	64.1	64.5
	nat.	women	54.8	58.2	59.3	59.5
		men	72.3	74.2	73.6	73.2
EU-25	non-nat.	women	NA	43.5	44.1	43.5
		men	NA	65.3	64.3	64.6
	nat.	women	NA	57.8	58.8	57.5
		men	NA	73.4	73.0	70.9

Source: Eurostat.

Note: Nat.: EU Nationals; Non-Nat.: non-EU Nationals (EU-15).

Annual values are an unweighted average of the available quarterly data.

In this context, a number of objectives were set for 2010, notably: a) a reduction in the average rate of early school-leavers to less than 10%; and b) a significant narrowing of the unemployment gaps for people at a disadvantage and between non-EU and EU nationals.

As regards the proportion of early school-leavers (table 44), progress has been achieved in recent years. In 2004 the proportion of early school-leavers declined to 17.8% and 15.7% in the EU-15 and the EU-25, respectively. The pace of progress in recent years suggests that, if continued, it will reduce the average for the EU-25 to

less than 10% by 2010. However, a number of Member States such as ES, IT, MT, and PT have much further to go in terms of progress towards this target. It is interesting to note that in all EU Member States there are lower proportions of women early school-leavers than men. On average in the EU, this gender gap (in favour of women) widened somewhat between 1997 and 2004.

Non-EU nationals¹⁴⁵ have higher unemployment rates than national citizens (table 45). Although the available data cover only a limited number of years, they suggest a somewhat gradual narrowing of the differentials between nationals and non-nationals. A breakdown of employment rates by nationality confirms the relative disadvantaged situation for non-nationals (table 46).

3.4.6. Regional labour market disparities

Under the Employment Guidelines¹⁴⁶, Member States should implement a broad approach towards reducing regional employment and unemployment disparities. In this respect, Member States will: i) promote favourable conditions for private sector activity and investment in regions lagging behind; ii) ensure that public support in regions lagging behind is focused on investment in human capital and knowledge capital, as well as adequate infrastructure.

In the period 1999 to 2003, modest progress was achieved in reducing the dispersion of regional employment rates (table 47) and of regional unemployment rates (table 48). As regards the former indicator, this basically reflects a fall in the female component.

145 Non-nationals of the EU15.

146 Specifically, the tenth Employment Guideline for 2003-2005.

Table 47 – Dispersion of regional employment rates (a)

		1999	2000	2001	2002	2003
EU-15	M+F	14.1	13.5	13.2	12.6	12.0
	M	8.9	8.6	8.6	8.3	8.2
	F	22.8	21.8	21.1	20.2	19.2
EU-25	M+F	13.4	13.5	13.6	13.5	13.0
	M	9.4	9.9	10.4	10.6	10.4
	F	21.1	20.6	20.1	19.6	18.8

Source: Eurostat.

Note: (a) Coefficient of variation of employment rates (aged 15-64) across regions (NUTS 2 level) in the EU.

Table 48 – Dispersion of regional unemployment rates (a)

		1999	2000	2001	2002	2003
EU-15		59.1	63.9	65.0	60.2	56.0
EU-25		55.1	61.5	66.1	64.0	59.8

Source: Eurostat.

Note: (a) Coefficient of variation of unemployment rates (aged 15-64) across regions (NUTS 2 level) in the EU.

4. Summary and Conclusions

This chapter takes stock of the European Employment Strategy (EES) launched in November 1997¹⁴⁷. The main purpose of the EES is *the promotion of more and better jobs*. For this, it sets many objectives (some of them quantified), which are grouped under three main headings: i) full employment; ii) quality and productivity at work; and iii) strengthening social cohesion and inclusion.

However, two notes of caution are necessary. Firstly, the identification of

causal relationships, linking policy measures adopted under the EES and labour market/social outcomes, is particularly challenging, not only because of the natural complexity of the problem (e.g. the varying time lags involved and the possible effects of the position in the economic cycle), but also because the 1990s witnessed a series of significant changes in Europe with a potentially large impact on labour markets. Secondly, the analysis carried out in this chapter is basically a backward looking exercise, as it ignores the introduction of (labour market) reforms, particularly in Germany. These reforms are expected to put the EU economy in a

better position to take full advantage of the next economic upswing, especially as regards employment creation.

As regards taking stock of the full employment objective of the EES, the analysis made in this chapter strongly suggests that structural improvements have indeed occurred in recent years, although problems remain in a number of areas. Such a view is in line with an emerging consensus, which is based on ample evidence, pointing to structural improvements across the board in EU labour markets.

As regards the overarching objective of “full employment” the following points can be made:

- Although, estimated structural unemployment rates have declined on average across the EU, insufficient or no progress was recorded in some of the largest EU Member States (France and Germany), while a marked deterioration occurred in some new Member States (Poland and Slovakia).
- Lower long-term unemployment rates and shorter average spells in unemployment were observed, particularly in the EU-15.
- An increased efficiency in matching between the unemployed and unfilled vacancies has been seen in a number of EU Member States, according to analyses based on the Beveridge Curve.
- The sustained increase in profitability during the 1990s, the general favouring of stability-oriented

147 This assessment is carried out under the Employment Guideline approved by the Council in 2003 for the period 2003-2005 (OJ L197/13). On 12 April 2005, the Commission published its recommendation for Integrated Guidelines for Growth and Jobs for the period 2005-2008. The new set of integrated guidelines was approved at the European Council of June 2005, leading to the Council Decisions of 12 July 2005 on guidelines for employment policies of Member States (OJ L205/21), and on the broad guidelines for economic policies of the Member States and the Community (OJ L205/28).

macroeconomic policies and the introduction of structural reforms in a number of areas such as competition policy and labour markets have all contributed to an improvement in the functioning of labour markets, which is beginning to bring benefits, particularly since 1997.

- There is the econometric finding of a positive break in the level of aggregate labour demand functions in many EU Member States (but not all) around 1997¹⁴⁸.
- There is statistical evidence indicating that the development of certain types of labour contracts, namely part-time and temporary work, is positively correlated with employment creation and rises in employment rates. As regards temporary work, however, there is also evidence of market segmentation between temporary and permanent workers.
- Expenditure on active labour market policies has been increased and better targeted to the needs of the labour market, with positive results for example in employment creation.
- According to a range of indicators, such as labour tax wedges and unemployment and inactivity traps, little progress has been achieved in lowering marginal effective tax rates on low wages or on facilitating the transition from unemployment/inactivity to employment. However, a decline in tax wedges seems to have contributed somewhat to employment creation in a limited number of Member States in the late 1990s¹⁴⁹.

With respect to the overarching objective of “**quality and productivity at work**”, the situation is complex, but the following observations can be made:

- Quality is a multidimensional concept. There have been significant rises in participation in lifelong learning and youth education attainment levels continue to rise, with (for the latter indicator) a gender gap favourable to women emerging. Further progress is necessary as regards transitions, because the transition probabilities both from a temporary to a permanent job and out of low-paid employment are relatively low.
- With respect to productivity developments, there has been a decline in EU productivity growth rates since the mid-1990s, which can be attributed to the creation of low-productivity jobs and a slowdown in total factor productivity growth. The pace of creation and absorption of new technologies decelerated, which according to some authors largely reflects insufficient outlays on organisational change.

With respect to the overarching objective of “**strengthening social cohesion and inclusion**”, some limited improvements have been achieved, including the following:

- Gender and age labour market gaps have been somewhat reduced.
- The data suggest that social transfers (other than pensions) play a major role in reducing income inequalities, significantly reducing poverty rates in many Member States.

- The data also show that moving from unemployment to employment lowers considerably the likelihood of being exposed to the risk of poverty. Employment is a key factor for social inclusion, not only because it raises income but also because it can promote social inclusion *per se* and personal advancement in a professional career.

148 This break corresponds to an upward shift in the level of the long-term employment relationship, which results in higher but temporary employment growth rates until the new long-term equilibrium is reached.

149 IE, NL and ES, and possibly also in BE and FR.

Box 6 – Special Focus on Information and Communications Technologies (ICT), Organisational change and Productivity

ICT diffusion in Europe and the United States: explanation of the productivity growth gap?

The remarkable acceleration in labour productivity and total factor productivity growth in the United States since the mid 1990s has been widely discussed in recent years. A general consensus has emerged that this acceleration can largely be attributed to information and communication technology (ICT) (Denis, Mc Morrow, Röger, 2005 ; Gordon, 2004; Jorgenson, Ho and Stiroh, 2004; Nordhaus, 2005), suggesting that the “Solow paradox” (“we see computers everywhere but in the productivity statistics”) has been largely resolved.

Empirical studies at aggregate, industry and firm levels all point to three main channels linking ICT and productivity (OECD, 2003; Pilat, 2004).

Capital deepening

Investment in ICT can contribute to capital deepening by adding to the stock of

capital that is available for workers and consequently helps raise labour productivity and growth (e.g. Colecchia and Schreyer, 2001; Schreyer, Bignon and Dupont, 2003; Timmer, Ypma and Van Ark, 2003; Van Ark, Melka, Mulder, Timmer and Ypma, 2003).

ICT investment accounted for between 0.3 to 1.0 percent of average annual GDP growth during 1995-2002 in EU countries (for which data are available) and the United States. Sweden, the United States, Denmark and Belgium had the largest contributions of ICT investment to GDP growth, while France, Germany and Italy lagged behind (Chart 85).

Increased productivity in ICT-producing sectors

The contribution of ICT producing manufacturing to labour productivity growth in the 1990s increased substantially (e.g. Pilat and Wöfl, 2004; Van Ark, Inklaar and McGuckin, 2002). This reflects in part the growing share of the ICT manufacturing sector in total manufacturing,

but also the increased rate of technical change in the production of some ICT goods. ICT producing manufacturing made the largest contributions to labour productivity growth in Ireland, Finland, Sweden and the United States during the period 1996-2002. Its role was more limited in Luxembourg, Spain, Italy and the Netherlands (Table 49).

ICT producing services contributed to labour productivity growth in the 1990s, although to a lesser extent than ICT producing manufacturing. ICT producing services increased labour productivity growth in several countries, such as Germany, Finland and Luxembourg (Table 49). The contribution of ICT producing services mainly reflects the liberalisation of the telecommunications sector and the rapid expansion of the computer services industry.

Increased productivity in the ICT-using sector

The impact of ICT is not limited to ICT producing sectors, but also involves the

Chart 85 – Contribution of ICT investment to GDP growth in selected EU countries and the US (in percentage points)



Source: OECD Productivity Database, September 2004, [www.oecd.org/statistics/productivity].

Note: 1995-2002 for France, Germany and the United States; 1995-2001 for other countries.

Box 6 (cont.) – Special Focus on Information and Communications Technologies (ICT), Organisational change and Productivity

ICT using sector (Pilat and Wölfl *op. cit.*; Triplett and Bosworth, 2004; Van Ark, Inklaar and McGuckin *op. cit.*; Van Ark *op. cit.*). Some estimates emphasise the dramatic increase in the contribution of the ICT using sector to labour productivity growth in the United States in the 1990s, while its contribution remained quite subdued in many EU Member States, such as Luxembourg, France, Spain, Germany and Italy (Table 49).

The results of some of these studies also show that Europe lags behind the United States in terms of labour productivity growth, especially in ICT using services. The performance of the United States in

ICT using services seems to be mainly linked to a major acceleration in labour productivity and output growth in distribution (retail and wholesale trade) and financial services (Table 50).

Organisational change: the missing link in Europe?

Although there are large differences across countries in terms of ICT diffusion, the reviewed literature shows that Europe has enjoyed fewer benefits from ICT than the United States.

The slow ICT diffusion and productivity growth in many countries in recent years

may be due to the insufficient response of firms in introducing the organisational changes necessary to cope with a rapidly changing business environment (Askenazy and Gianella, 2000; Lundvall, 2004). There is growing evidence that maximisation of the productivity gains resulting from ICT effectively requires changes in workplace organisation (Brynjolfsson and Hitt, 2000; Arnal, Ok and Torres, 2001; OECD *op. cit.*).

However, the importance of organisational aspects should not lead to an underestimation of the role played by other factors, such as the costs of ICT investment, firms' ability to absorb knowledge (avail-

Table 49 – Sectoral contributions to labour productivity growth in selected EU countries and the US (percentage points)

	Total economy		ICT-producing manufacturing		ICT-producing services		ICT-using services	
	1990-1995	1996-2002	1990-1995	1996-2002	1990-1995	1996-2002	1990-1995	1996-2002
AT	2.32	1.73	0.12	0.11	0.15	0.13	0.59	0.51
BE	1.90	0.78	0.03	0.13	0.12	0.05	0.47	0.17
DK	1.99	1.45	0.09	0.09	0.27	0.13	0.18	0.37
FI	2.65	2.02	0.20	0.82	0.13	0.36	0.10	0.22
FR	1.13	1.00	0.20	0.21	0.02	0.14	0.01	-0.17
DE	2.11	1.38	0.17	0.09	0.18	0.46	0.17	0.12
IE	2.39	3.76	0.43	0.89	0.10	0.28	0.15	0.73
IT	2.83	0.56	0.09	0.02	0.12	0.20	0.88	0.14
LU	2.08	0.51	-0.03	-0.01	0.74	0.32	1.13	-0.20
NL	0.63	0.77	0.10	0.03	0.09	0.17	0.25	0.28
ES	1.22	0.28	0.14	0.01	0.09	0.16	-0.17	-0.03
SE	2.95	2.67	0.27	0.51	0.24	0.22	0.45	0.60
UK	2.20	1.08	0.19	0.12	0.18	0.24	0.37	0.85
US	1.12	1.74	0.33	0.45	0.14	0.16	0.24	1.29

Source: Pilat and Wölfl (2004) based on STAN database.

Note: ICT-producing manufacturing covers ISIC Rev3 30-33; ICT-producing services cover ISIC Rev3 64+72; ICT-using services cover ISIC Rev3 71-74.

1991-95 for Germany; 1992-95 for France and Italy; 1996-98 for Sweden; 1996-99 for Spain; 1996-2000 for Ireland; 1996-2001 for France, United Kingdom and United States.

Box 6 (cont.) – Special Focus on Information and Communications Technologies (ICT), Organisational change and Productivity

ability of human capital, experience with other innovations), the nature of the businesses and the regulatory environment. The latter factor can play an important role in reducing firms' incentives to introduce new organisational practices.

Changes in workplace organisation and productivity

Since the mid-1980s, an increasing number of firms have introduced new work practices in order to better cope with a more competitive economic environment (Arnal, Ok and Torres *op. cit.*).

These new work practices take many forms, including the restructuring of production processes (e.g. just in time, lean production), management systems and employee involvement schemes (e.g. teamwork, flexible work arrangements, flexible compensation systems), and external re-organisation (e.g. outsourcing) (Murphy, 2002).

A number of studies have highlighted the favourable impact of organisational changes on firms' performance (e.g. Cappelli and Neumark, 1999; Eriksson, 2003). Two main reasons that can be advanced to explain this positive relationship are as follows:

- Organisational changes may improve the overall efficiency of firms in combining labour and physical capital;
- Organisational changes may contribute to productivity growth via their synergies with ICT.

Empirical evidence for the link between ICT, organisational changes and firm performance

A number of studies have related changes in the organisation of work to the introduction of ICT in the workplace, following the seminal contribution of Milgrom and Roberts (1990).

For the United States, Bresnahan, Brynjolfsson and Hitt (2002), using panel data for large firms in the manufacturing and

services sectors, found evidence of complementarities among ICT, workplace organisation, and the launch of new products and services. Black and Lynch (2000a), examining a sample of US establishments, found that firms that re-engineer their workplaces to incorporate more high performance practices (e.g. profit sharing, greater teamwork) experience higher productivity compared to those that have kept more traditional practices. In a subsequent study, these authors, analysing the impact of workplace practices, information technology and human capital on productivity, found

that unionised establishments that have adopted new industrial relations practices that promote joint decision making have higher productivity than other similar non union plants (Black and Lynch 2000b).

For a number of EU Member States, evidence is also available regarding the link between ICT, organisational change and firm performance. For Finland, Maliranta and Rouviren (2004) found that organisational change has a significant impact on productivity gains. In the case of Germany, Bertschek and Kaiser (2004) suggest that workplace reorganisation

Table 50 – Average annual growth rates of hourly labour productivity in the ICT and non-ICT industries of the EU-15 and the US

	1979-1995		1995-2002	
	EU-15	US	EU-15	US
Total Economy	2.3	1.2	1.8	2.5
ICT Producing Industries	6.8	7.2	8.6	9.3
ICT Producing Manufacturing	11.6	15.1	16.2	23.5
ICT Producing Services	4.4	2.4	5.9	2.7
ICT Using Industries	2.3	1.6	1.8	4.9
ICT Using Manufacturing	2.7	0.8	2	2.6
ICT Using Services	2	1.9	1.7	5.3
of which:				
Wholesale Trade	2.4	3.5	1.5	8.1
Retail Trade	1.7	2.4	1.5	7.1
Financial Services	1.9	1.5	2.3	5
ICT-intensive Business Services	0.8	-0.9	0.6	0.7
Non-ICT Industries	1.9	0.4	1.1	0.2
Non-ICT Manufacturing	3.2	2.3	2.1	1.2
Non-ICT Services	0.8	-0.3	0.5	0.2
Non-ICT Other	3.4	1.4	2.1	0.4

Source: Van Ark (2005) based the Groningen Growth and Development Centre, 60-industry Database.

Note: Total economy excludes real estate.

Box 6 (cont.) – Special Focus on Information and Communications Technologies (ICT), Organisational change and Productivity

(i.e. enhancement of group work and flattening of the hierarchy) in business-related services increases labour productivity. For France, Guellec and Greenan (1998) showed that the use of advanced technologies and the skill base are positively correlated to organisational aspects. In addition, firms that introduce organisational changes are more able to adjust to changing market conditions through technological innovation. For the Netherlands, Broersma and McGuckin (2000) found that computer investments have a positive impact on productivity in the wholesale and retail trade sectors.

Conclusions and implications

Since the mid 1990s, labour productivity developments in Europe *vis-à-vis* the United States have raised concerns. There is a general consensus that the New Economy has largely driven the upsurge in labour and total factor productivity growth in recent years in the United States. Conversely, Europe has benefited less from ICT. Moreover, evidence shows that a large ICT producing sector does not seem to be a prerequisite to obtain the full benefits of ICT, since the major contribution to aggregate productivity at industry level comes from the ICT-using sector, especially ICT using services.

However, ICT *alone* is not enough to raise productivity growth. ICT use requires complementary investments, especially in intangible assets. More specifically, the introduction of new work practices in the workplace, often associated with changes in the skill bases of firms, appear to be paramount in order to optimise the return from ICT investment. The critical importance of such organisational changes, and more generally, in the context of ICT, the concept of adaptability, is corroborated by several historical studies on the introduction and diffusion of general purpose technologies (e.g. David, 1990).

As a consequence, policies aiming at facilitating the uptake of ICT in Europe, as mentioned in the *Integrated Guidelines for Growth and Jobs* (2005-2008) *op. cit.*, should go hand in hand with those aiming

to improve the adaptability of workers and enterprises. Such objective has also been recently stressed in the framework of Commission initiative “i2010: European Information Society 2010”.

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Box 6 (cont.) – Special Focus on Information and Communications Technologies (ICT), Organisational change and Productivity

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Annex I

Box 7 – The estimation of Okun type equations

This type of equation reflects the fact that labour market variables display a considerable amount of cyclical variation. In fact, when output moves above trend, employment grows as non-active individuals join the labour force. Typically, the growth in employment tends to outstrip that in the labour force, yielding a reduction in unemployment. The reverse occurs during downturn periods, although the amplitude of movements can vary over the business cycle.

Okun type equations are estimated using a balanced set of pooled annual data for the EU-15^a, covering the period 1972-2003. In effect, what is tested is the correlation of the deviations of labour market variables from their trends (unemployment, employment and the labour force) with the output gap (the deviation of real GDP from its trend). A dummy variable is considered to test for the asymmetry of the effect of the cycle on labour market variables. Another dummy variable is included to identify possible changes that have occurred in the period covered by the EES (1998-2003). The combined effect of these two dummy variables is also considered.

The following equation is estimated for unemployment, employment and the labour force (y_{it})

$$y_{it} = \alpha_i + \beta_1 * y_{it-1} + \beta_2 * y_{it-2} + \gamma_1 * g_{it} + \gamma_2 * g_{it-1} + \gamma_3 * d_1 * g_{it} + \gamma_4 * d_2 * g_{it} + \gamma_5 * d_1 * d_2 * g_{it} + u_{it}$$

where i and t are, respectively, the country and period indices; α_i are the fixed effect coefficients; y_{it} is the cyclical component of the labour market variable being considered; g_{it} is the cyclical component of real GDP; d_1 is a dummy that equals one when the cyclical component is positive ($g_{it} > 0$) and zero otherwise; d_2 is a dummy that equals one in the period 1998-2003 and zero otherwise.

The cyclical component is calculated using the Hodrick Prescott filter. In order to eliminate country specific effects, besides calculating country fixed effects

(α_i), the data used in the regressions are the differences relative to period averages.

The data have various sources. Whenever possible, Eurostat data are used, namely the Labour Force Survey. The other sources of data are DG ECFIN Ameco, OECD MEI, and the IMF IFS.

The following structure for the errors is assumed: (i) errors are independent over time but are contemporaneously correlated across country/cross section; and (ii) the standard deviation of errors varies across country/cross section.

An obvious problem with the estimation of this type of equation is the presence of endogenous regressors, notably the cyclical component of real GDP (g_{it}). This is a serious statistical problem because it leads to biased and inefficient estimates even in large samples. The traditional solution to this problem is the use of instruments.

Using the Eviews programme, *two stage least squares (tsls)* regressions were calcu-

lated. In a first stage, two types of instruments were used: (i) common to all cross sections; and (ii) country specific. The set of common instruments includes: all non endogenous regressors and the lagged endogenous regressor, the relative price of crude oil deflated by the GDP deflator, and total factor productivity. The latter two variables can be seen as a proxy for global shocks. The set of country specific instruments includes: indicators for relative price competitiveness, foreign demand, real wages (deflated by the GDP deflator), and the cyclical adjusted net primary government balance.

In addition, given the assumed structure for the errors, a cross section weighted least squares procedure is used to estimate the coefficient matrix, together with a robust estimation procedure for the coefficient covariance matrix, which takes account of the contemporaneous cross section heteroskedasticity of the errors.

^a EU-15, excluding Luxembourg.

The estimates are presented in the following table:

Coefficient	Unemployment	Employment	Labour Force
β_1	0.93 (24.6) ***	0.86 (20.1) ***	0.73 (16.2) ***
β_2	-0.45 (-12.7) ***	-0.38 (-10.4) ***	-0.28 (-6.8) ***
γ_1	-0.13 (-11.2) ***	0.26 (7.1) ***	0.12 (4.6) ***
γ_2	---	0.10 (3.4) ***	0.10 (4.6) ***
$\gamma_3 * d_1$	---	-0.15 (-3.5) ***	-0.17 (4.9) ***
$\gamma_4 * d_2$	---	---	---
$\gamma_5 * d_1 * d_2$	---	0.07 (0.7)	0.21 (2.3)*
R ² adj.	0.76	0.74	0.60
Standard error of the regression	1.02	1.01	1.00

The t ratios are in parenthesis. *** coefficient significant at 1%; ** coefficient significant at 2%; and * coefficient significant at 3%.

Annex II

Box 8 – The estimation of unemployment gap equations

A prominent feature of European labour markets is the presence of certain groups in a permanent disadvantaged position. For some of them, such as immigrants, ethnic minorities, people with disabilities, the homeless, etc., no (sufficiently long) data series is available to carry out econometric analysis. However, if the data are pooled together across countries, there are some groups for which some preliminary estimates can be presented for the evolution of the gaps in their respective labour market outcomes against a benchmark group. These groups are women, the long term unemployed and youth unemployed. The benchmark group used is the total aggregate (i.e. the universe). The unemployment rate is the measure chosen for labour market performance.

Unemployment gap equations are estimated using an unbalanced set of pooled annual data for the EU-15^a. Equations for three gaps are estimated: i) women's versus total unemployment rates; ii) long term versus total unemployment rates; and iii) youth versus total unemployment rates. In the first equation, the estimation period is 1985-2004, while in the second and third equations the period is 1991-2004.

The regressors are the endogenous variables lagged one period and two dummy variables. A first dummy variable is considered to test for the asymmetry of the effect of the cycle on the unemployment gaps. The cyclical component of GDP is calculated using the Hodrick Prescott filter. A second dummy variable is included to identify possible changes that have occurred in the period covered by the EES (1998-2004).

The following type of equation is estimated

$$g_{it} = \beta_{1i} + \beta_2 g_{it-1} + \beta_3 d_{1t} + \beta_4 d_{2t} + \varepsilon_{it}$$

where

$$g_{it} \equiv f_{it} - u_{it} \text{ or } g_{it} \equiv u_{it} - l_{it} \text{ or } g_{it}$$

$$\equiv y_{it} - u_{it}$$

where i and t are respectively the country and period indices; f_{it} is the women's unemployment rate; u_{it} is the total unemployment rate; l_{it} is the long term unem-

ployment rate; y_{it} is the youth unemployment rate; g_{it} are the gap variables defined in such a way as to hold normally positive values; β_i are the fixed effect coefficients; d_1 is a dummy that equals one when the cyclical component of GDP is positive and zero otherwise; d_2 is a dummy that equals one in the period 1998-2004 and zero otherwise; and ε_{it} are the errors which are tested for a first order autoregressive structure.

The source for the data is the *Employment Indicators* database of Eurostat.

The following structure for the errors is assumed: (i) a possible first order autoregressive structure i.e. ar(1); (ii) contemporaneously correlated across country/cross section; and (iii) the standard deviation of errors varies across country/cross section.

Following the equation specification, regressors and errors are assumed to be independent, allowing the use of cross section weighted least squares. In addition, given the assumed structure for the errors, the coefficient covariance matrix is estimated using a robust method with

respect to the presence of cross section heteroskedascity.

^a EU-15, excluding Luxembourg.

The estimates are presented in the following table:

Coefficient	Women	Long-term	Youth
β_1	0.34 (3.6) ***	1.8 (8.1) ***	3.6 (8.3) ***
β_2	0.83 (19.9) ***	0.66 (14.4) ***	0.69 (16.3) ***
β_3	-0.08 (-2.3) **	-0.11 (-2.0) **	-0.24 (-1.8) *
β_4	-0.12 (-2.2) **	-0.28 (-4.5) ***	-0.84 (-6.2) ***
AR(1)	0.28 (3.8) ***	---	---
R ² adj.	0.98	0.98	0.97
Standard error of the regression	0.33	0.47	1.14

The t ratios are in parenthesis. *** coefficient significant at 1%; ** coefficient significant at 5%; and * coefficient significant at 10%.

